



The Merge

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
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
INCE	Institute of Noise Control Engineering
L_{eq}	Equivalent continuous (average) sound level
L_{max}	Maximum level measured over the time interval
L_{min}	Minimum level measured over the time interval
mph	Miles per hour
PPV	Peak Particle Velocity
Project	The Merge
REMEL	Reference Energy Mean Emission Level
RMS	Root-mean-square
VdB	Vibration Decibels

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EXECUTIVE SUMMARY

Urban Crossroads, Inc. has prepared this noise study to determine the noise exposure and the necessary noise mitigation measures, if any, for the proposed The Merge development (“Project”). The Project site is located at the northeast corner of Archibald Avenue and Limonite Avenue in the City of Eastvale. The Project development includes a combination of warehousing and commercial uses. This study has been prepared consistent with applicable City of Eastvale noise standards, and significance criteria based on guidance provided by Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1) In addition, since some of the sensitive receivers are located in the City of Ontario, appropriate standards and thresholds from the adjacent jurisdiction are used in this analysis where applicable.

OFF-SITE TRAFFIC NOISE ANALYSIS

Traffic generated by the operation of the proposed Project will influence the traffic noise levels in surrounding off-site areas. To quantify the traffic noise increases on the surrounding off-site areas, the changes in traffic noise levels on 25 roadway segments surrounding the Project site were calculated based on the change in the average daily traffic (ADT) volumes. The traffic noise levels provided in this analysis are based on the traffic forecasts found in *The Merge 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, Horizon Year 2040 Without Limonite Extension, and Horizon Year 2040 With Limonite Extension conditions. The analysis shows that the unmitigated Project-related traffic noise level increases under all traffic scenarios will be *less than significant*.

OPERATIONAL NOISE ANALYSIS

Using reference noise levels to represent the potential noise sources within The Merge site, this analysis estimates the Project-related operational (stationary-source) noise levels at the nearby noise-sensitive receiver locations. The Project-related operational noise sources are expected to include roof-top air conditioning units, shopping cart corrals, drive-through speakerphones, car wash tunnel exit and vacuum activities, gas station activity, parking lot vehicle movements, and truck unloading/docking activity.

OPERATIONAL NOISE LEVEL COMPLIANCE

The analysis shows that the unmitigated Project-related operational noise levels will exceed the City of Eastvale exterior noise level standards at the closest noise-sensitive receiver locations in the Project study area. Therefore, the unmitigated operational noise impacts are considered *potentially significant*. As such, operational noise mitigation measures in the form of noise barriers and restricted operating hours are identified herein, which result in *less than significant* mitigated Project operational noise levels at all receiver locations.

OPERATIONAL NOISE LEVEL CONTRIBUTIONS

Further, this analysis demonstrates that the unmitigated Project-related noise level increases to the existing noise environment at all receiver locations would be less than the Federal Interagency Committee on Noise (FICON) guidance for noise level increases, and thus would be *less than significant* during daytime and nighttime hours. Therefore, the operational noise level impacts associated with the proposed Project activities, such as the roof-top air conditioning units, shopping cart corrals, drive-through speakerphones, car wash tunnel exit and vacuum activities, gas station activity, parking lot vehicle movements, and truck unloading/docking activity will be *less than significant*.

OPERATIONAL NOISE MITIGATION MEASURES

The following mitigation measures are required to reduce the operational noise level impacts at the nearby sensitive receiver locations:

- The following noise barriers are required to reduce the operational noise levels at adjacent noise-sensitive receiver locations:
 - Minimum 10-foot high screen walls (noise barriers) are required at the eastern Project warehouse building loading docks (Building 6, 7, and 8), as shown on Exhibit ES-A;
 - The barriers shall provide a weight of at least 4 pounds per square foot of face area with no decorative cutouts or line-of-sight openings between shielded areas and the roadways, and a minimum transmission loss of 20 dBA. (3) The barriers shall consist of a solid face from top to bottom. Unnecessary openings or decorative cutouts shall not be made. All gaps (except for weep holes) should be filled with grout or caulking. The noise barriers shall be constructed using, but not limited to, the following materials:
 - Masonry block;
 - Earthen berm;
 - Or any combination of construction materials capable of the minimum weight of 4 pounds per square foot and a minimum transmission loss of 20 dBA.
- Car wash activity shall be restricted to between the daytime hours established in the City of Eastvale Municipal Code (7:00 a.m. to 10:00 p.m.). No nighttime (10:00 p.m. to 7:00 a.m.) car wash activity shall be permitted.

SHORT-TERM CAR WASH NOISE EVENTS

Car wash activities may cycle on and off as each car progresses through the tunnel, however, this analysis assumes all activities would operate continuously to present worst-case conditions. Short-term noise events such as car doors slamming, air blowers cycling on and off, and water spraying are expected to occur and produce high noise levels over short durations of a few seconds to a few minutes, which are likely to be audible and perceived as nuisance noise. However, these short-term events will not represent a significant contribution to the overall average L_{eq} noise levels when evaluated based on the City of Eastvale L_{eq} average noise level standards. As such, while daytime car wash operational noise levels are shown to be compliant with City of Eastvale standards, short-term events may still be perceived as nuisance noise over shorter durations.

CONSTRUCTION NOISE ANALYSIS

Using sample reference noise levels to represent the planned construction activities of The Merge 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 72.3 dBA L_{eq} . Since the City of Eastvale General Plan and Municipal Code 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, which is consistent with criteria established by the Federal Transit Administration (FTA). 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 9.9 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 50 to 559 feet from Project construction activity, construction vibration velocity levels are expected to approach 0.068 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. (5) The peak Project-construction vibration levels are shown to approach 0.068 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.

CONSTRUCTION NOISE AND VIBRATION BEST PRACTICES

Though construction noise is temporary, intermittent and of short duration, and will not present any long-term impacts, the following best practices measures would reduce the noise and vibration levels produced by the construction equipment to the nearby noise-sensitive residential land uses:

- During all Project site construction, the construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers’ standards.
- The construction contractor(s) shall place all stationary construction equipment so that emitted noise is directed away from the noise sensitive receivers nearest the Project site.
- The contractor shall design delivery routes to minimize the exposure of sensitive land uses or residential dwellings to delivery truck-related noise.

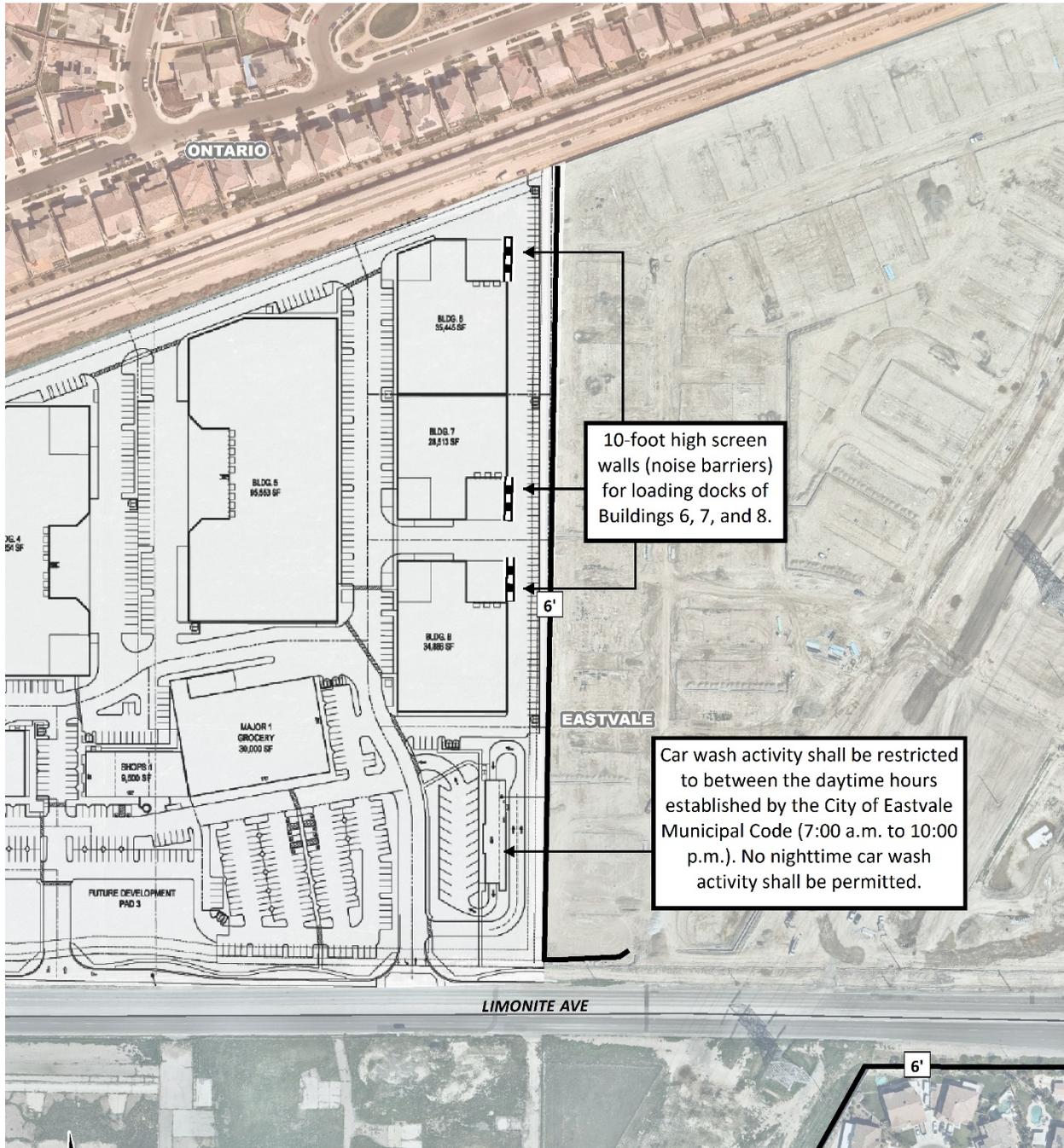
SUMMARY OF CEQA SIGNIFICANCE FINDINGS

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

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS

Analysis	Report Section	Significance Findings	
		Unmitigated	Mitigated
Off-Site Traffic Noise Levels	7	<i>Less Than Significant</i>	<i>n/a</i>
Operational Noise Level Compliance	9	<i>Potentially Significant</i>	<i>Less Than Significant</i>
Operational Noise Level Increases (Permanent)		<i>Less Than Significant</i>	<i>n/a</i>
Construction Noise Level Compliance	10	<i>Less Than Significant</i>	<i>n/a</i>
Construction Noise Level Increases (Temporary)		<i>Less Than Significant</i>	<i>n/a</i>
Construction Vibration Levels		<i>Less Than Significant</i>	<i>n/a</i>

EXHIBIT ES-A: OPERATIONAL NOISE MITIGATION MEASURES



LEGEND:

- 6' Barrier Height (in feet) Recommended 10-Foot High Noise Barriers
- Existing Barrier

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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 Merge (“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 noise and short-term construction noise and vibration impacts.

1.1 SITE LOCATION

The proposed The Merge Project is located at the northeast corner of Archibald Avenue and Limonite Avenue in the City of Eastvale, as shown on Exhibit 1-A. Chino Airport is located approximately one mile west of the Project site. Existing land uses in the Project study area include residential uses north, east, and southeast of the Project site, and existing agricultural use to the west and south (designated as future commercial use) of the Project site.

1.2 PROJECT DESCRIPTION

Exhibit 1-B illustrates the preliminary Project site plan. As indicated on Exhibit 1-B, the Project is proposed to consist of the following uses:

- 336,501 square feet of warehousing use
- 4,750 square feet of shopping center use
- 30,000 square foot supermarket (grocery store)
- 14,600 square foot pharmacy/drug store use with drive-through window
- 16 vehicle fueling position gas station with convenience market
- 4,000 square foot automated car wash
- 7,750 square foot fast-food restaurant without drive-through window
- 6,000 square foot fast-food restaurant with drive-through window
- 2,500 square foot coffee/donut shop with drive-through window

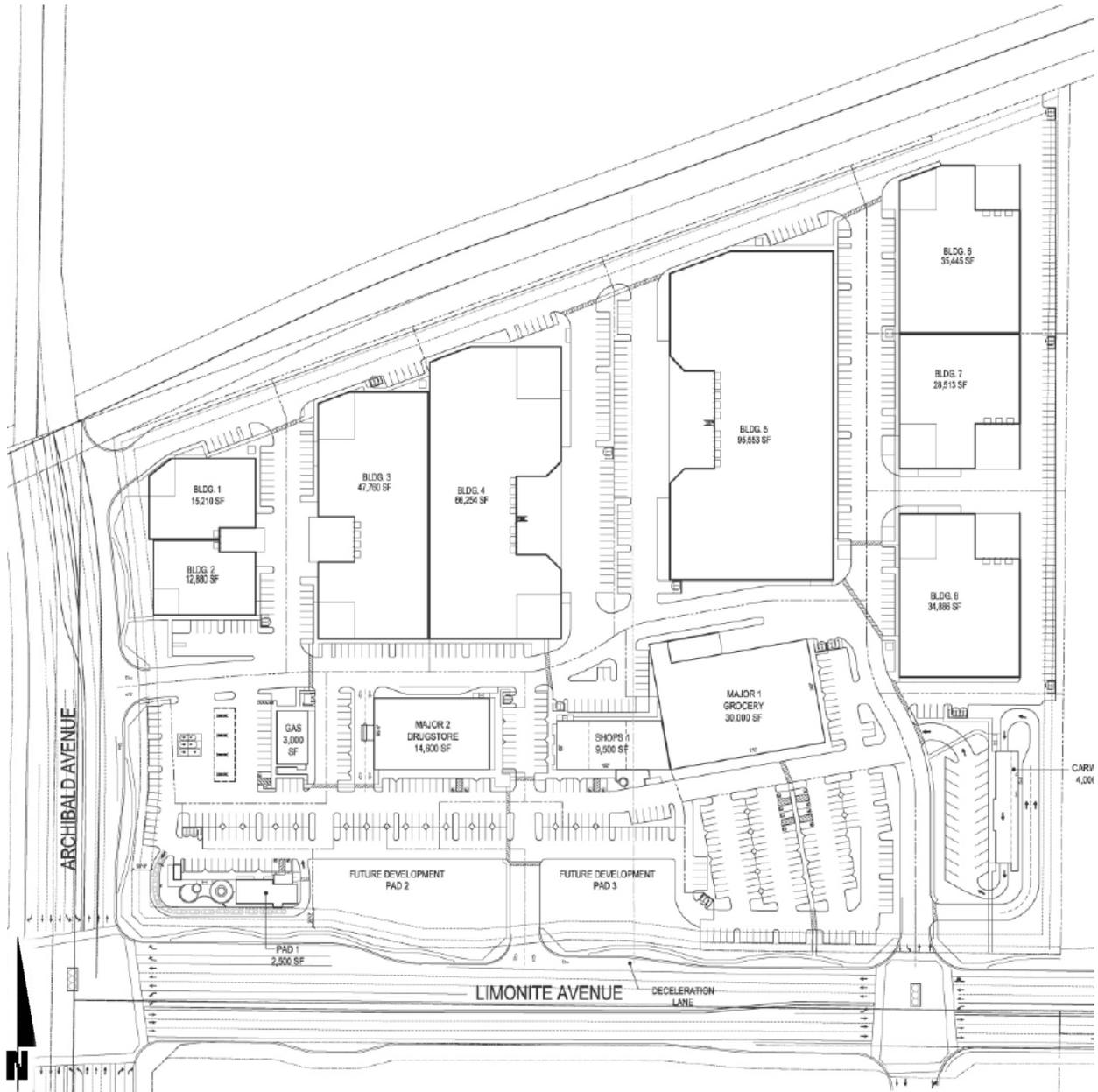
The on-site Project-related noise sources are expected to include: roof-top air conditioning units, shopping cart corrals, drive-through speakerphones, car wash tunnel exit and vacuum activities, gas station activity, parking lot vehicle movements, and truck unloading/docking activity. This noise analysis is intended to describe noise level impacts associated with the expected typical operational activities at the Project site.

Based on *The Merge Traffic Impact Analysis* prepared by Urban Crossroads, Inc. the Project is expected to generate a net total of approximately 6,737 trip-ends per day (actual vehicles). (2) The Project trip generation includes 117 truck trip-ends per day from the proposed Project site. This noise study relies on the 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	INTOLERABLE OR DEAFENING	HEARING LOSS
NEAR JET ENGINE		130		
		120		
JET FLY-OVER AT 300m (1000 ft)	ROCK BAND	110		
LOUD AUTO HORN		100	VERY NOISY	SPEECH INTERFERENCE
GAS LAWN MOWER AT 1m (3 ft)		90		
DIESEL TRUCK AT 15m (50 ft), at 80 km/hr (50 mph)	FOOD BLENDER AT 1m (3 ft)	80	LOUD	
NOISY URBAN AREA, DAYTIME	VACUUM CLEANER AT 3m (10 ft)	70		
HEAVY TRAFFIC AT 90m (300 ft)	NORMAL SPEECH AT 1m (3 ft)	60	MODERATE	SLEEP DISTURBANCE
QUIET URBAN DAYTIME	LARGE BUSINESS OFFICE	50		
QUIET URBAN NIGHTTIME	THEATER, LARGE CONFERENCE ROOM (BACKGROUND)	40	FAINT	NO EFFECT
QUIET SUBURBAN NIGHTTIME	LIBRARY	30		
QUIET RURAL NIGHTTIME	BEDROOM AT NIGHT, CONCERT HALL (BACKGROUND)	20		
	BROADCAST/RECORDING STUDIO	10	VERY FAINT	
LOWEST THRESHOLD OF HUMAN HEARING	LOWEST THRESHOLD OF HUMAN HEARING	0		

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

2.1 RANGE OF NOISE

Since the range of intensities that the human ear can detect is so large, the scale frequently used to measure intensity is a scale based on multiples of 10, the logarithmic scale. The scale for measuring intensity is the decibel scale. Each interval of 10 decibels indicates a sound energy ten times greater than before, which is perceived by the human ear as being roughly twice as loud. (6) 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. (7) Another important aspect of noise is the duration of the sound and the way it is described and distributed in time.

2.2 NOISE DESCRIPTORS

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

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

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. (6)

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. (8)

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. (6)

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 resident. However, for vegetation to provide a substantial, or even noticeable, noise reduction, the vegetation area must be at least 15 feet in height, 100 feet wide and dense enough to completely obstruct the line-of sight between the source and the receiver. This size of vegetation may provide up to 5 dBA of noise reduction. The FHWA does not consider the planting of vegetation to be a noise abatement measure. (8)

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. (8)

2.6 LAND USE COMPATIBILITY WITH NOISE

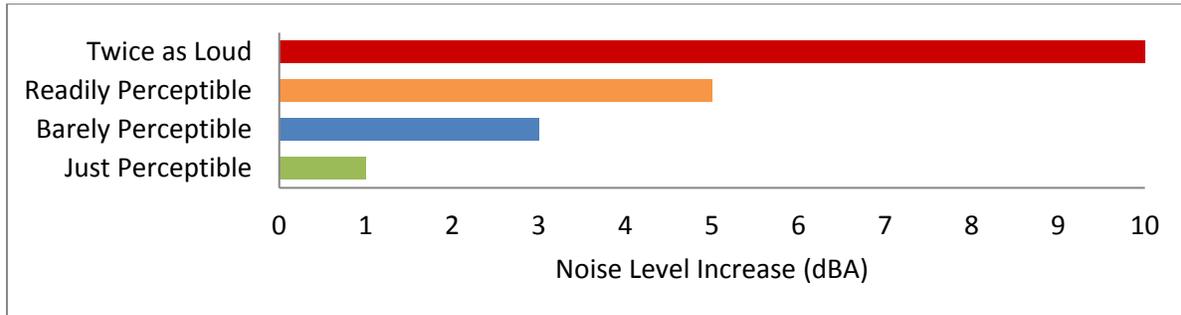
Some land uses are more tolerant of noise than others. For example, schools, hospitals, churches, and residences are more sensitive to noise intrusion than are commercial or industrial developments and related activities. As ambient noise levels affect the perceived amenity or livability of a development, 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. (9)

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. (10) 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. (10) 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*. (8)

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. (11)

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. Further, periodic exposure to high noise levels in short duration, such as Project construction, is typically considered an annoyance and not impactful to human health. It would take several years of exposure to high noise levels to result in hearing impairment. (12)

2.9 VIBRATION

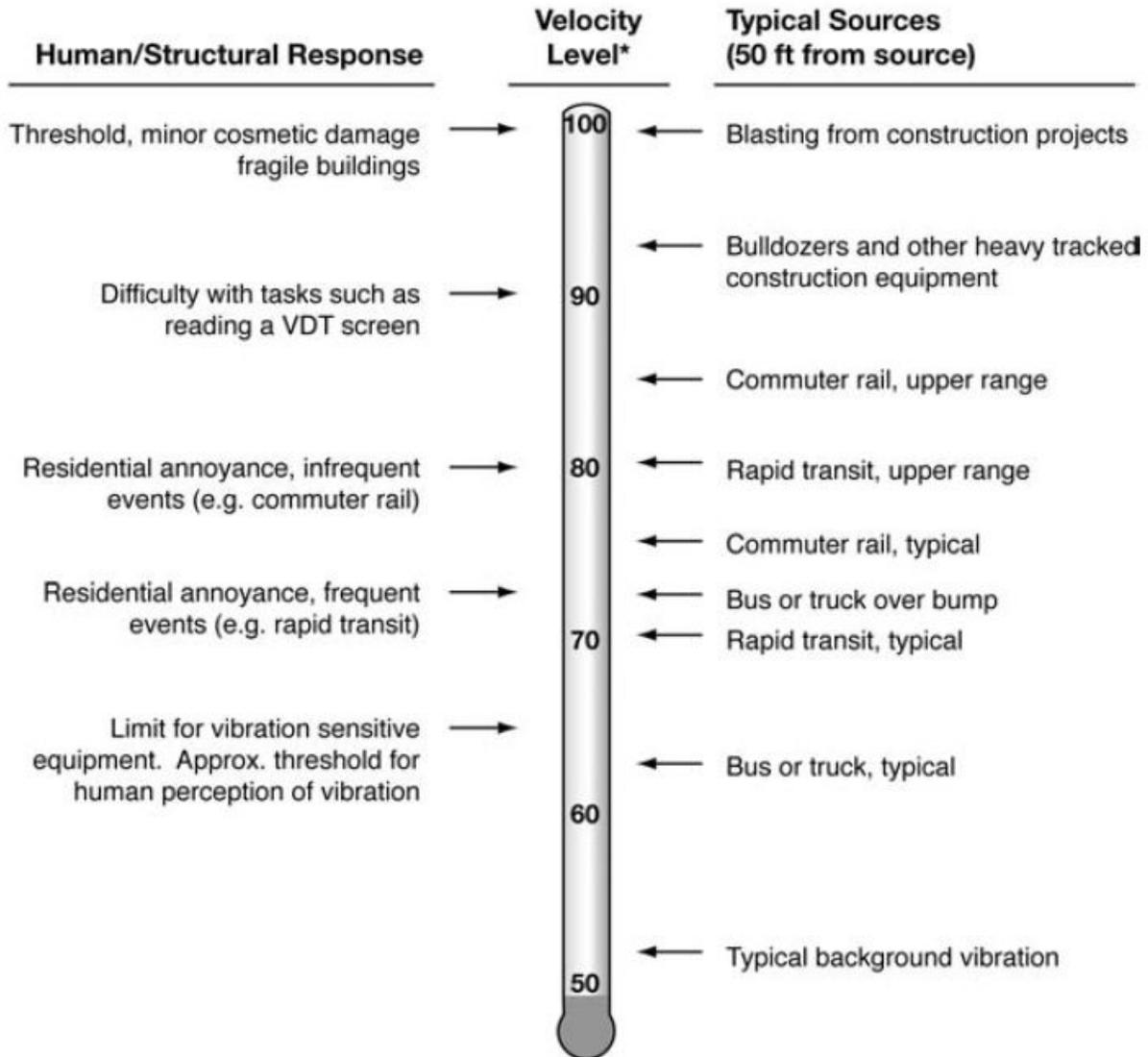
Per the Federal Transit Administration (FTA) *Transit Noise Impact and Vibration Assessment* (5), vibration is the periodic oscillation of a medium or object. The rumbling sound caused by the vibration of room surfaces is called structure-borne noise. Sources of ground-borne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or human-made causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, such as factory machinery, or transient, such as explosions.

As is the case with airborne sound, ground-borne vibrations may be described by amplitude and frequency.

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

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

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



* RMS Vibration Velocity Level in VdB relative to 10^{-6} inches/second

Source: Federal Transit Administration (FTA) Transit Noise 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. (13) The purpose of the Noise Element is to *limit the exposure of the community to excessive noise levels*. In addition, the California Environmental Quality Act (CEQA) requires that all known environmental effects of a project be analyzed, including environmental noise impacts.

3.2 STATE OF CALIFORNIA BUILDING STANDARDS

The 2016 State of California's Green Building Standards Code contains mandatory measures for non-residential building construction in Section 5.507 on Environmental Comfort. (14) 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.

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

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

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) (17) 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 Merge 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 roof-top air conditioning units, shopping cart corrals, drive-through speakerphones, car wash tunnel exit and vacuum activities, gas station activity, parking lot vehicle movements, and truck unloading/docking activity 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
	7 a.m. to 10 p.m.	60
Multiple Residential 3 or More Units Per Building (Triplex +)	10 p.m. to 7 a.m.	55
	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.). (18) 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. In addition, Section 5-29.05(a)(1) indicates that *if the ambient noise level exceeds the resulting standard, the ambient noise level shall be the standard*. As shown on Table 5-1 of this report, the lowest ambient noise levels measured in the City of Ontario, at measurement location L2, exceed the nighttime noise level standard of 45 dBA L_{eq} with a measured nighttime noise level of 60.1 dBA L_{eq} . Therefore, the nighttime ambient noise level measured at location L2 of 60 dBA L_{eq} , rounded down to be conservative, is used in this analysis as the nighttime exterior noise level standard for receiver locations in the City of Ontario. 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.

TABLE 3-1: OPERATIONAL NOISE STANDARDS

City	Land Use	Time Period	Exterior Noise Levels (dBA) ³		
			L_{eq} (Energy Avg.)	L_{25} (15 mins)	L_{max} (Anytime)
Eastvale ¹	Residential	Daytime	60	-	-
		Nighttime	50	-	-
Ontario ²	Residential	Daytime	65	65	85
		Nighttime	60	60	80

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. L_{25} is the noise level exceeded 25% of the time.

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

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.

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.

"n/a" = The City of Ontario does not identify specific vibration level standards.

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 L_{eq} 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 L_{eq} noise levels. Therefore, the noise level threshold of 85 dBA L_{eq} 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 85 dBA L_{eq} threshold is also consistent with the FTA *Transit Noise and Vibration Impact Assessment* criteria for construction noise which identifies an hourly construction noise level threshold of 90 dBA L_{eq} during daytime hours, and 80 dBA L_{eq} during nighttime hours for

construction for general assessment at noise-sensitive uses (e.g., residential, medical/hospital, school, etc.). (5) Detailed assessment, according to the FTA, identifies an 8-hour dBA L_{eq} noise level threshold specific to noise-sensitive uses of 80 dBA L_{eq} . Therefore, the Noise Study relies on the NIOSH 85 dBA L_{eq} threshold, consistent with FTA general and detailed assessment criteria for noise-sensitive uses and represents an appropriate threshold for construction noise analysis. The construction noise standards are shown on Table 3-3.

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).

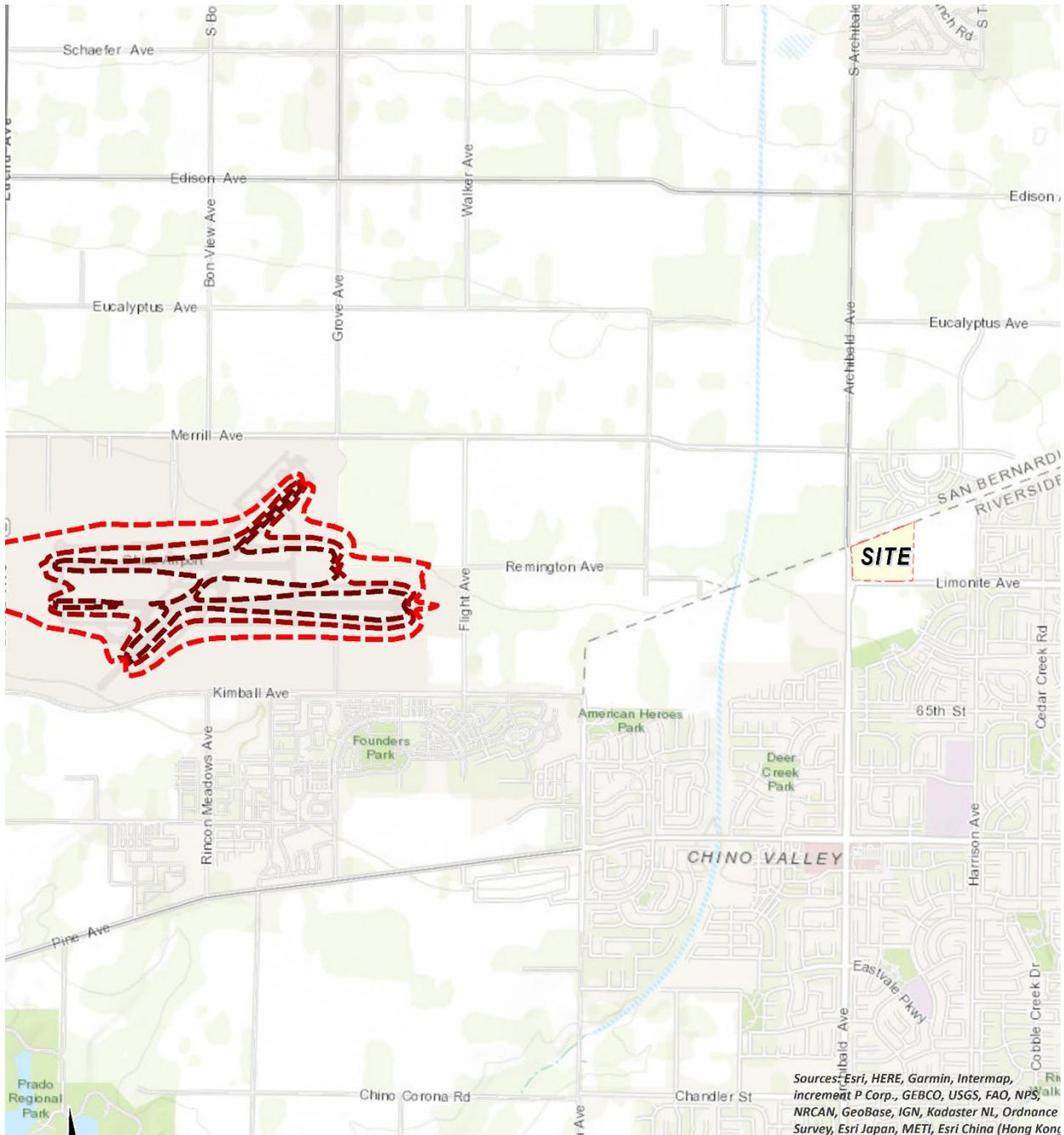
² Source: NIOSH, Criteria for Recommended Standard: Occupational Noise Exposure, June 1998.

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. As shown on Exhibit 3-C, 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)

EXHIBIT 3-C: CHINO AIRPORT LONG-TERM NOISE CONTOURS



LEGEND:
Noise Level Contour Boundaries
 65 dBA CNEL
 70 dBA CNEL
 75 dBA CNEL

Source: City of Chino General Plan Noise Element, Figure N-6 Long-Term Noise Contours for Chino Airport

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4 SIGNIFICANCE CRITERIA

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

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

While the CEQA Guidelines and 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 under CEQA Guideline A, they do not define the levels at which increases are considered substantial for use under Guidelines B, C, and D. CEQA Guidelines E and F apply to nearby public and private airports, if any, and the Project's land use compatibility. Based on the Chino Airport noise level contours previously shown on Exhibit 3-C, 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 Guidelines E and F.

4.1 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*. (24) 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) (25) 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 (i.e., CNEL), energy average noise level (L_{eq}), and median noise level (L_{50}).

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 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.

4.2 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.

4.3 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
 - already exceed 65 dBA CNEL, and the Project creates a community noise level impact 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:
 - 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
 - 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

- already exceed 65 dBA L_{eq} , and the Project creates a community noise level impact 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

Analysis	Receiving Land Use	Condition(s)	Significance Criteria	
			Daytime	Nighttime
Off-Site Traffic Noise ¹	Noise-Sensitive	if ambient is < 60 dBA CNEL	≥ 5 dBA CNEL Project increase	
		if ambient is 60 - 65 dBA CNEL	≥ 3 dBA CNEL Project increase	
		if ambient is > 65 dBA CNEL	≥ 1.5 dBA CNEL Project increase	
	Non-Noise-Sensitive ²	if ambient is < 70 dBA CNEL	≥ 5 dBA CNEL Project increase	
		if ambient is > 70 dBA CNEL	≥ 3 dBA CNEL Project increase	
Operational Noise	Noise-Sensitive	Exterior Noise Level Standards ³	See Table 3-1.	
		if ambient is < 60 dBA L _{eq} ¹	≥ 5 dBA L _{eq} Project increase	
		if ambient is 60 - 65 dBA L _{eq} ¹	≥ 3 dBA L _{eq} Project increase	
if ambient is > 65 dBA L _{eq} ¹		≥ 1.5 dBA L _{eq} Project increase		
Construction Noise & Vibration		Noise Level Threshold ⁴	85 dBA L _{eq}	n/a
		Noise Level Increase ⁵	12 dBA L _{eq}	n/a
	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.

"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.

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5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, six individual 24-hour noise level measurements were taken at sensitive receiver locations in the Project study area. The receiver locations were selected to describe and document the existing noise environment within the Project study area. Exhibit 5-A provides the boundaries of the Project study area and the noise level measurement locations. To fully describe the existing noise conditions, noise level measurements were collected by Urban Crossroads, Inc. on Wednesday, May 16th, 2018. 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. (26)

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 any 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.* (6) 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.* (5)

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. (5) 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.

At the time the noise level measurements were collected, the residential development east of the Project site was under construction. To avoid overstating the ambient noise levels due to background construction activities, a sound level meter was located adjacent to similar existing residential homes in the Project study area at location L2, to represent the anticipated ambient noise levels at the future residential homes east of the Project site. Further, of the six noise level measurements, the lowest ambient noise levels were measured at location L2, and therefore, are used in this noise study to represent lower ambient noise conditions expected at the future residential uses east of the Project site. Appendix 5.2 provides a summary of the existing hourly ambient noise levels described below:

- Location L1 represents the noise levels north of the Project site on Archibald Avenue adjacent to existing residential homes. The noise level measurements collected show an overall 24-hour exterior noise level of 71.5 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 66.2 dBA L_{eq} with an average nighttime noise level of 64.5 dBA L_{eq} .
- Location L2 represents the noise levels at the northern Project site boundary near existing residential homes and a trail adjacent to a flood control channel. The noise level measurements collected show an overall 24-hour exterior noise level of 67.3 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 62.9 dBA L_{eq} with an average nighttime noise level of 60.1 dBA L_{eq} .
- Location L3 represents the noise levels west of the Project site adjacent to an existing agricultural use on Archibald Avenue. The 24-hour CNEL indicates that the overall exterior noise level is 74.4 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 70.3 dBA L_{eq} with an average nighttime noise level of 67.1 dBA L_{eq} .
- Location L4 represents the noise levels south of the Project site on Limonite Avenue adjacent to an existing agricultural use on a commercial-designated use lot. The noise level measurements collected show an overall 24-hour exterior noise level of 74.2 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 70.8 dBA L_{eq} with an average nighttime noise level of 66.6 dBA L_{eq} .
- Location L5 represents the noise levels southeast of the Project site on Limonite Avenue adjacent to existing residential homes. The noise level measurements collected show an overall 24-hour exterior noise level of 68.9 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 65.9 dBA L_{eq} with an average nighttime noise level of 60.9 dBA L_{eq} .

- Location L6 represents the noise levels east of the Project site adjacent to existing residential homes north of Limonite Avenue. The noise level measurements collected show an overall 24-hour exterior noise level of 69.2 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 64.7 dBA L_{eq} with an average nighttime noise level of 62.0 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, L_1 , L_2 , L_5 , L_8 , L_{25} , L_{50} , L_{90} , L_{95} , and L_{99} 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. The 24-hour existing noise level measurements shown on Table 5-1 present the existing ambient noise conditions.

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

Location ¹	Distance to Project Boundary (Feet)	Description	Energy Average Noise Level (dBA L_{eq}) ²		CNEL
			Daytime	Nighttime	
L1	440'	Located north of the Project site on Archibald Avenue adjacent to existing residential homes.	66.2	64.5	71.5
L2	105'	Located at the northern Project site boundary near existing residential homes and a trail adjacent to a flood control channel.	62.9	60.1	67.3
L3	110'	Located west of the Project site adjacent to an existing agricultural use on Archibald Avenue.	70.3	67.1	74.4
L4	90'	Located south of the Project site on Limonite Avenue adjacent to an existing agricultural use on a commercial-designated use lot.	70.8	66.6	74.2
L5	475'	Located southeast of the Project site on Limonite Avenue adjacent to existing residential homes.	65.9	60.9	68.9
L6	1,350'	Located east of the Project site adjacent to existing residential homes north of Limonite Avenue.	64.7	62.0	69.2

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

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

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

EXHIBIT 5-A: NOISE MEASUREMENT LOCATIONS



LEGEND:

- ▲ Noise Measurement Locations

6 METHODS AND PROCEDURES

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

6.1 FHWA TRAFFIC NOISE PREDICTION MODEL

The estimated roadway noise impacts from vehicular traffic were calculated using a computer program that replicates the Federal Highway Administration (FHWA) Traffic Noise Prediction Model- FHWA-RD-77-108. (27) 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. (28) 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.

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 25 study area roadway segments, the distance from the centerline to adjacent land use based on the functional roadway classifications per the City of Eastvale, Ontario, and Chino General Plan Circulation Elements, and the posted vehicle speeds. The ADT volumes used in this study are presented on Table 6-2 are based on *The Merge Traffic Impact Analysis* prepared by Urban Crossroads, Inc., for the following traffic scenarios: Existing, Opening Year 2021, Horizon Year 2040 Without Limonite Extension, and Horizon Year 2040 With Limonite Extension conditions. (2) For this analysis, soft site conditions are used to analyze the traffic noise impacts within the Project study area. Soft site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. Caltrans' research has shown that the use of soft site conditions is appropriate for the application of the FHWA traffic noise prediction model as used in this off-site traffic noise analysis. (29)

Per *The Merge Traffic Impact Analysis* prepared by Urban Crossroads, Inc. the Project is expected to generate a net total of approximately 6,737 trip-ends per day (actual vehicles). (2) The Project trip generation includes 117 truck trip-ends per day from the proposed Project.

This noise study relies on the net 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. 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. 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.

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	Grove Av.	n/o Merrill Av.	Business Park (Agr.)	50'	50
2	Hellman Av.	n/o Merrill Av.	Business Park (Agr.)	74'	50
3	Hellman Av.	s/o Kimball Av.	Residential	49'	45
4	Archibald Av.	n/o Riverside Dr.	Residential	74'	50
5	Archibald Av.	s/o Riverside Dr.	Residential	74'	55
6	Archibald Av.	s/o Chino Av.	Residential	74'	55
7	Archibald Av.	s/o Schaefer Av.	Residential	74'	55
8	Archibald Av.	s/o Ontario Ranch Rd.	Residential	74'	55
9	Archibald Av.	s/o Eucalyptus Av.	Residential	74'	55
10	Archibald Av.	s/o Merrill Av.	Residential	74'	55
11	Archibald Av.	s/o Limonite Av.	Residential	76'	50
12	Archibald Av.	s/o 65th St.	Residential	76'	50
13	Archibald Av.	s/o Schleisman Rd.	Residential	76'	50
14	Ontario Ranch Rd.	e/o Archibald Av.	Residential	80'	50
15	Merrill Av.	w/o Grove Av.	Commercial	44'	50
16	Merrill Av.	w/o Flight Av.	Public	44'	50
17	Merrill Av.	e/o Hellman Av.	Industrial	44'	50
18	Merrill Av.	e/o Archibald Av.	Residential	44'	45
19	Kimball Av.	w/o Hellman Av.	Residential	49'	50
20	Limonite Av.	e/o Hellman Av.	Industrial (Agr.)	76'	50
21	Limonite Av.	e/o Archibald Av.	Commercial/Res.	76'	50
22	Limonite Av.	e/o Harrison Av.	Residential	76'	50
23	Limonite Av.	e/o Sumner Av.	Residential	76'	50
24	Limonite Av.	e/o Scholar Wy.	Residential	76'	50
25	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.

"Agr." = Agricultural use

TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES

ID	Roadway Segment	Average Daily Traffic Volumes ¹							
		Existing		Opening Year Cumulative 2021		Horizon Year 2040 Without Limonite Ext.		Horizon Year 2040 With Limonite Ext.	
		Without Project	With Project	Without Project	With Project	Without Project	With Project	Without Project	With Project
1	Grove Av. n/o Merrill Av.	7,331	7,596	10,387	10,652	10,920	11,185	9,032	9,297
2	Hellman Av. n/o Merrill Av.	108	439	2,952	3,283	9,423	9,754	8,509	8,840
3	Hellman Av. s/o Kimball Av.	16,982	17,313	21,309	21,640	17,899	18,230	23,553	23,884
4	Archibald Av. n/o Riverside Dr.	32,371	32,683	48,043	48,355	35,411	35,723	35,411	35,723
5	Archibald Av. s/o Riverside Dr.	31,768	32,345	46,540	47,117	42,497	43,074	42,497	43,074
6	Archibald Av. s/o Chino Av.	26,541	27,184	42,194	42,837	41,265	41,908	41,265	41,908
7	Archibald Av. s/o Schaefer Av.	26,108	26,817	42,064	42,773	38,707	39,416	38,707	39,416
8	Archibald Av. s/o Ontario Ranch Rd.	33,454	34,626	53,171	54,343	46,807	47,979	46,807	47,979
9	Archibald Av. s/o Eucalyptus Av.	33,516	34,755	53,530	54,769	47,856	49,095	47,856	49,095
10	Archibald Av. s/o Merrill Av.	35,558	38,144	55,894	58,480	41,892	44,478	48,540	51,126
11	Archibald Av. s/o Limonite Av.	29,449	30,641	47,823	49,015	54,572	55,764	45,758	46,950
12	Archibald Av. s/o 65th St.	n/a	n/a	n/a	n/a	56,000	56,927	43,565	44,492
13	Archibald Av. s/o Schleisman Rd.	28,489	29,019	38,745	39,275	43,202	43,732	36,882	37,412
14	Ontario Ranch Rd. e/o Archibald Av.	19,905	20,236	30,803	31,134	27,830	28,161	27,830	28,161
15	Merrill Av. w/o Grove Av.	12,064	12,418	23,165	23,519	23,238	23,592	30,501	30,855
16	Merrill Av. w/o Flight Av.	13,208	13,827	25,931	26,550	30,970	31,589	34,501	35,120
17	Merrill Av. e/o Hellman Av.	13,301	14,383	25,444	26,526	39,574	40,656	31,024	32,106
18	Merrill Av. e/o Archibald Av.	3,604	3,869	7,959	8,224	6,081	6,346	7,905	8,170
19	Kimball Av. w/o Hellman Av.	16,982	17,445	22,454	22,917	17,407	17,870	27,495	27,958
20	Limonite Av. e/o Hellman Av.	n/a	n/a	n/a	n/a	11,505	12,299	29,432	30,226
21	Limonite Av. e/o Archibald Av.	21,999	24,098	36,787	38,886	47,688	49,787	47,960	50,059
22	Limonite Av. e/o Harrison Av.	26,386	28,353	45,012	46,979	51,100	53,067	51,100	53,067
23	Limonite Av. e/o Sumner Av.	28,149	29,983	47,707	49,541	50,414	52,248	50,414	52,248
24	Limonite Av. e/o Scholar Wy.	31,041	32,677	50,086	51,722	50,591	52,227	50,647	52,283
25	Limonite Av. e/o Hamner Av.	45,529	46,768	64,961	66,200	54,882	56,121	54,882	56,121

¹ Source: The Merge Traffic Impact Analysis, Urban Crossroads, Inc., May 2018.

"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

Vehicle Type	Time of Day Splits ¹			Total of Time of Day Splits
	Daytime	Evening	Nighttime	
Autos	66.44%	16.49%	17.07%	100.00%
Medium Trucks	69.14%	10.31%	20.55%	100.00%
Heavy Trucks	72.81%	7.35%	19.85%	100.00%

¹ Based on existing 24-hour classification counts by vehicle type taken on 4/10/18 at Limonite Avenue east of Hamner Avenue (The Merge Traffic Impact Analysis, Urban Crossroads, Inc., May 2018). Vehicle mix percentage values rounded to the nearest 100th.

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

TABLE 6-4: WITHOUT PROJECT CONDITIONS VEHICLE MIX

Classification	Total % Traffic Flow ¹			Total
	Autos	Medium Trucks	Heavy Trucks	
All Segments	91.34%	6.66%	2.00%	100.00%

¹ Based on existing 24-hour classification counts by vehicle type taken on 4/10/18 at Limonite Avenue east of Hamner Avenue (The Merge Traffic Impact Analysis, Urban Crossroads, Inc., May 2018). Vehicle mix percentage values rounded to the nearest one-hundredth.

TABLE 6-5: EXISTING WITH PROJECT CONDITIONS VEHICLE MIX

ID	Roadway	Segment	With Project ¹			
			Autos	Medium Trucks	Heavy Trucks	Total ²
1	Grove Av.	n/o Merrill Av.	91.64%	6.43%	1.93%	100.00%
2	Hellman Av.	n/o Merrill Av.	97.87%	1.64%	0.49%	100.00%
3	Hellman Av.	s/o Kimball Av.	91.51%	6.53%	1.96%	100.00%
4	Archibald Av.	n/o Riverside Dr.	91.28%	6.62%	2.10%	100.00%
5	Archibald Av.	s/o Riverside Dr.	91.35%	6.57%	2.08%	100.00%
6	Archibald Av.	s/o Chino Av.	91.37%	6.53%	2.10%	100.00%
7	Archibald Av.	s/o Schaefer Av.	91.39%	6.51%	2.09%	100.00%
8	Archibald Av.	s/o Ontario Ranch Rd.	91.50%	6.46%	2.04%	100.00%
9	Archibald Av.	s/o Eucalyptus Av.	91.51%	6.45%	2.04%	100.00%
10	Archibald Av.	s/o Merrill Av.	91.74%	6.24%	2.02%	100.00%
11	Archibald Av.	s/o Limonite Av.	91.68%	6.40%	1.92%	100.00%
12	Archibald Av.	s/o 65th St.	91.58%	6.48%	1.94%	100.00%
13	Archibald Av.	s/o Schleisman Rd.	91.50%	6.54%	1.96%	100.00%
14	Ontario Ranch Rd.	e/o Archibald Av.	91.48%	6.55%	1.97%	100.00%
15	Merrill Av.	w/o Grove Av.	91.40%	6.50%	2.10%	100.00%
16	Merrill Av.	w/o Flight Av.	91.56%	6.39%	2.05%	100.00%
17	Merrill Av.	e/o Hellman Av.	91.83%	6.19%	1.98%	100.00%
18	Merrill Av.	e/o Archibald Av.	91.93%	6.20%	1.86%	100.00%
19	Kimball Av.	w/o Hellman Av.	91.57%	6.48%	1.95%	100.00%
20	Limonite Av.	e/o Hellman Av.	99.99%	0.01%	0.00%	100.00%
21	Limonite Av.	e/o Archibald Av.	91.90%	6.11%	1.99%	100.00%
22	Limonite Av.	e/o Harrison Av.	91.77%	6.23%	2.00%	100.00%
23	Limonite Av.	e/o Sumner Av.	91.71%	6.28%	2.01%	100.00%
24	Limonite Av.	e/o Scholar Wy.	91.63%	6.35%	2.02%	100.00%
25	Limonite Av.	e/o Hamner Av.	91.47%	6.50%	2.03%	100.00%

¹ Source: The Merge Traffic Impact Analysis, Urban Crossroads, Inc., May 2018.

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

TABLE 6-6: OPENING YEAR 2021 WITH PROJECT CONDITIONS VEHICLE MIX

ID	Roadway	Segment	With Project ¹			
			Autos	Medium Trucks	Heavy Trucks	Total ²
1	Grove Av.	n/o Merrill Av.	91.56%	6.49%	1.95%	100.00%
2	Hellman Av.	n/o Merrill Av.	92.21%	5.99%	1.80%	100.00%
3	Hellman Av.	s/o Kimball Av.	91.47%	6.56%	1.97%	100.00%
4	Archibald Av.	n/o Riverside Dr.	91.30%	6.63%	2.07%	100.00%
5	Archibald Av.	s/o Riverside Dr.	91.35%	6.60%	2.06%	100.00%
6	Archibald Av.	s/o Chino Av.	91.36%	6.58%	2.06%	100.00%
7	Archibald Av.	s/o Schaefer Av.	91.37%	6.57%	2.06%	100.00%
8	Archibald Av.	s/o Ontario Ranch Rd.	91.44%	6.53%	2.03%	100.00%
9	Archibald Av.	s/o Eucalyptus Av.	91.45%	6.52%	2.03%	100.00%
10	Archibald Av.	s/o Merrill Av.	91.60%	6.39%	2.01%	100.00%
11	Archibald Av.	s/o Limonite Av.	91.55%	6.50%	1.95%	100.00%
12	Archibald Av.	s/o 65th St.	91.50%	6.54%	1.96%	100.00%
13	Archibald Av.	s/o Schleisman Rd.	91.46%	6.57%	1.97%	100.00%
14	Ontario Ranch Rd.	e/o Archibald Av.	91.43%	6.59%	1.98%	100.00%
15	Merrill Av.	w/o Grove Av.	91.37%	6.58%	2.05%	100.00%
16	Merrill Av.	w/o Flight Av.	91.46%	6.52%	2.02%	100.00%
17	Merrill Av.	e/o Hellman Av.	91.61%	6.40%	1.99%	100.00%
18	Merrill Av.	e/o Archibald Av.	91.62%	6.45%	1.94%	100.00%
19	Kimball Av.	w/o Hellman Av.	91.52%	6.53%	1.96%	100.00%
20	Limonite Av.	e/o Hellman Av.	97.14%	2.20%	0.66%	100.00%
21	Limonite Av.	e/o Archibald Av.	91.69%	6.32%	1.99%	100.00%
22	Limonite Av.	e/o Harrison Av.	91.60%	6.40%	2.00%	100.00%
23	Limonite Av.	e/o Sumner Av.	91.57%	6.43%	2.00%	100.00%
24	Limonite Av.	e/o Scholar Wy.	91.52%	6.46%	2.01%	100.00%
25	Limonite Av.	e/o Hamner Av.	91.43%	6.55%	2.02%	100.00%

¹ Source: The Merge Traffic Impact Analysis, Urban Crossroads, Inc., May 2018.

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

TABLE 6-7: HORIZON YEAR 2040 WITHOUT LIMONITE EXT. WITH PROJECT VEHICLE MIX

ID	Roadway	Segment	With Project ¹			
			Autos	Medium Trucks	Heavy Trucks	Total ²
1	Grove Av.	n/o Merrill Av.	91.55%	6.50%	1.95%	100.00%
2	Hellman Av.	n/o Merrill Av.	91.63%	6.43%	1.93%	100.00%
3	Hellman Av.	s/o Kimball Av.	91.50%	6.54%	1.96%	100.00%
4	Archibald Av.	n/o Riverside Dr.	91.28%	6.62%	2.09%	100.00%
5	Archibald Av.	s/o Riverside Dr.	91.35%	6.59%	2.06%	100.00%
6	Archibald Av.	s/o Chino Av.	91.36%	6.58%	2.06%	100.00%
7	Archibald Av.	s/o Schaefer Av.	91.38%	6.56%	2.06%	100.00%
8	Archibald Av.	s/o Ontario Ranch Rd.	91.45%	6.51%	2.03%	100.00%
9	Archibald Av.	s/o Eucalyptus Av.	91.46%	6.51%	2.03%	100.00%
10	Archibald Av.	s/o Merrill Av.	91.69%	6.30%	2.01%	100.00%
11	Archibald Av.	s/o Limonite Av.	91.53%	6.52%	1.96%	100.00%
12	Archibald Av.	s/o 65th St.	91.48%	6.55%	1.97%	100.00%
13	Archibald Av.	s/o Schleisman Rd.	91.44%	6.58%	1.98%	100.00%
14	Ontario Ranch Rd.	e/o Archibald Av.	91.44%	6.58%	1.98%	100.00%
15	Merrill Av.	w/o Grove Av.	91.37%	6.58%	2.05%	100.00%
16	Merrill Av.	w/o Flight Av.	91.44%	6.54%	2.02%	100.00%
17	Merrill Av.	e/o Hellman Av.	91.51%	6.49%	1.99%	100.00%
18	Merrill Av.	e/o Archibald Av.	91.70%	6.38%	1.92%	100.00%
19	Kimball Av.	w/o Hellman Av.	91.56%	6.49%	1.95%	100.00%
20	Limonite Av.	e/o Hellman Av.	91.90%	6.23%	1.87%	100.00%
21	Limonite Av.	e/o Archibald Av.	91.61%	6.40%	1.99%	100.00%
22	Limonite Av.	e/o Harrison Av.	91.57%	6.43%	2.00%	100.00%
23	Limonite Av.	e/o Sumner Av.	91.55%	6.44%	2.00%	100.00%
24	Limonite Av.	e/o Scholar Wy.	91.52%	6.47%	2.01%	100.00%
25	Limonite Av.	e/o Hamner Av.	91.45%	6.53%	2.03%	100.00%

¹ Source: The Merge Traffic Impact Analysis, Urban Crossroads, Inc., May 2018.

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

TABLE 6-8: HORIZON YEAR 2040 WITH LIMONITE EXT. WITH PROJECT VEHICLE MIX

ID	Roadway	Segment	With Project ¹			
			Autos	Medium Trucks	Heavy Trucks	Total ²
1	Grove Av.	n/o Merrill Av.	91.59%	6.47%	1.94%	100.00%
2	Hellman Av.	n/o Merrill Av.	91.66%	6.41%	1.93%	100.00%
3	Hellman Av.	s/o Kimball Av.	91.46%	6.57%	1.97%	100.00%
4	Archibald Av.	n/o Riverside Dr.	91.28%	6.62%	2.09%	100.00%
5	Archibald Av.	s/o Riverside Dr.	91.35%	6.59%	2.06%	100.00%
6	Archibald Av.	s/o Chino Av.	91.36%	6.58%	2.06%	100.00%
7	Archibald Av.	s/o Schaefer Av.	91.38%	6.56%	2.06%	100.00%
8	Archibald Av.	s/o Ontario Ranch Rd.	91.45%	6.51%	2.03%	100.00%
9	Archibald Av.	s/o Eucalyptus Av.	91.46%	6.51%	2.03%	100.00%
10	Archibald Av.	s/o Merrill Av.	91.64%	6.35%	2.01%	100.00%
11	Archibald Av.	s/o Limonite Av.	91.56%	6.49%	1.95%	100.00%
12	Archibald Av.	s/o 65th St.	91.52%	6.52%	1.96%	100.00%
13	Archibald Av.	s/o Schleisman Rd.	91.46%	6.57%	1.97%	100.00%
14	Ontario Ranch Rd.	e/o Archibald Av.	91.44%	6.58%	1.98%	100.00%
15	Merrill Av.	w/o Grove Av.	91.36%	6.60%	2.04%	100.00%
16	Merrill Av.	w/o Flight Av.	91.43%	6.55%	2.02%	100.00%
17	Merrill Av.	e/o Hellman Av.	91.56%	6.45%	1.99%	100.00%
18	Merrill Av.	e/o Archibald Av.	91.62%	6.44%	1.94%	100.00%
19	Kimball Av.	w/o Hellman Av.	91.48%	6.55%	1.97%	100.00%
20	Limonite Av.	e/o Hellman Av.	91.57%	6.48%	1.95%	100.00%
21	Limonite Av.	e/o Archibald Av.	91.61%	6.40%	1.99%	100.00%
22	Limonite Av.	e/o Harrison Av.	91.57%	6.43%	2.00%	100.00%
23	Limonite Av.	e/o Sumner Av.	91.55%	6.44%	2.00%	100.00%
24	Limonite Av.	e/o Scholar Wy.	91.52%	6.47%	2.01%	100.00%
25	Limonite Av.	e/o Hamner Av.	91.45%	6.53%	2.03%	100.00%

¹ Source: The Merge Traffic Impact Analysis, Urban Crossroads, Inc., May 2018.

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

6.3 CONSTRUCTION VIBRATION ASSESSMENT METHODOLOGY

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 several types of construction equipment are summarized on Table 6-9. Based on the representative vibration levels presented for various construction equipment types, it is possible to estimate the human response (annoyance) using the following vibration assessment methods defined by the FTA. To describe the human response (annoyance) associated with vibration impacts the FTA provides the following equation: $PPV_{\text{equip}} = PPV_{\text{ref}} \times (25/D)^{1.5}$

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, May 2006.

7 OFF-SITE TRANSPORTATION NOISE IMPACTS

To assess the off-site transportation CNEL noise level impacts associated with development of the proposed Project, noise contours were developed based on *The Merge 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:

- Existing Conditions Without / With Project: 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.
- Horizon Year 2040 Without / With Project Without Limonite Avenue Extension: This scenario below refers to the background noise conditions at future Year 2040 without and with the proposed Project plus ambient growth without the Limonite Avenue extension. This scenario corresponds to Year 2040 conditions, and includes all cumulative projects identified in the *Traffic Impact Analysis*.
- Horizon Year 2040 Without / With Project With Limonite Avenue Extension: This scenario below refers to the background noise conditions at future Year 2040 without and with the proposed Project plus ambient growth with the Limonite Avenue extension. This scenario corresponds to Year 2040 conditions, and 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 and 7-8 present a summary of the exterior traffic noise levels, without barrier attenuation, for the 25 study area roadway segments analyzed from the without Project to the with Project conditions under Existing, Opening Year 2021, Horizon Year 2040 Without Limonite Extension, and Horizon Year 2040 With Limonite Extension traffic conditions. 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

ID	Road	Segment	Adjacent Planned (Existing) Land Use ¹	CNEL at Nearest Adjacent Land Use (dBA) ²	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Grove Av.	n/o Merrill Av.	Business Park (Agr.)	71.4	62	133	286
2	Hellman Av.	n/o Merrill Av.	Business Park (Agr.)	50.7	RW	RW	RW
3	Hellman Av.	s/o Kimball Av.	Residential	73.7	86	185	400
4	Archibald Av.	n/o Riverside Dr.	Residential	75.4	171	368	793
5	Archibald Av.	s/o Riverside Dr.	Residential	76.3	195	421	906
6	Archibald Av.	s/o Chino Av.	Residential	75.5	173	373	804
7	Archibald Av.	s/o Schaefer Av.	Residential	75.5	171	369	795
8	Archibald Av.	s/o Ontario Ranch Rd.	Residential	76.5	202	435	938
9	Archibald Av.	s/o Eucalyptus Av.	Residential	76.6	202	436	939
10	Archibald Av.	s/o Merrill Av.	Residential	76.8	210	453	977
11	Archibald Av.	s/o Limonite Av.	Residential	74.2	145	313	675
12	Archibald Av.	s/o 65th St.	Residential	74.7	155	335	721
13	Archibald Av.	s/o Schleisman Rd.	Residential	74.1	142	306	660
14	Ontario Ranch Rd.	e/o Archibald Av.	Residential	73.6	138	298	641
15	Merrill Av.	w/o Grove Av.	Commercial	73.5	75	162	349
16	Merrill Av.	w/o Flight Av.	Public	73.9	80	172	371
17	Merrill Av.	e/o Hellman Av.	Industrial	73.9	80	173	373
18	Merrill Av.	e/o Archibald Av.	Residential	67.2	RW	62	133
19	Kimball Av.	w/o Hellman Av.	Residential	74.7	101	218	469
20	Limonite Av.	e/o Hellman Av.	Industrial (Agr.)	n/a	n/a	n/a	n/a
21	Limonite Av.	e/o Archibald Av.	Commercial/Res.	73.0	120	258	556
22	Limonite Av.	e/o Harrison Av.	Residential	73.7	135	291	627
23	Limonite Av.	e/o Sumner Av.	Residential	74.0	141	304	655
24	Limonite Av.	e/o Scholar Wy.	Residential	74.5	151	324	699
25	Limonite Av.	e/o Hamner Av.	Commercial	75.1	166	357	769

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

ID	Road	Segment	Adjacent Planned (Existing) Land Use ¹	CNEL at Nearest Adjacent Land Use (dBA) ²	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Grove Av.	n/o Merrill Av.	Business Park (Agr.)	71.4	62	134	289
2	Hellman Av.	n/o Merrill Av.	Business Park (Agr.)	54.2	RW	RW	RW
3	Hellman Av.	s/o Kimball Av.	Residential	73.7	87	186	402
4	Archibald Av.	n/o Riverside Dr.	Residential	75.5	173	373	804
5	Archibald Av.	s/o Riverside Dr.	Residential	76.4	198	427	921
6	Archibald Av.	s/o Chino Av.	Residential	75.7	177	381	820
7	Archibald Av.	s/o Schaefer Av.	Residential	75.6	175	377	812
8	Archibald Av.	s/o Ontario Ranch Rd.	Residential	76.7	206	444	957
9	Archibald Av.	s/o Eucalyptus Av.	Residential	76.7	207	445	959
10	Archibald Av.	s/o Merrill Av.	Residential	77.0	218	469	1011
11	Archibald Av.	s/o Limonite Av.	Residential	74.3	147	317	682
12	Archibald Av.	s/o 65th St.	Residential	74.7	157	337	727
13	Archibald Av.	s/o Schleisman Rd.	Residential	74.1	143	308	663
14	Ontario Ranch Rd.	e/o Archibald Av.	Residential	73.6	139	299	644
15	Merrill Av.	w/o Grove Av.	Commercial	73.6	77	166	357
16	Merrill Av.	w/o Flight Av.	Public	74.1	82	177	381
17	Merrill Av.	e/o Hellman Av.	Industrial	74.1	83	179	386
18	Merrill Av.	e/o Archibald Av.	Residential	67.3	RW	63	136
19	Kimball Av.	w/o Hellman Av.	Residential	74.8	102	219	472
20	Limonite Av.	e/o Hellman Av.	Industrial (Agr.)	n/a	n/a	n/a	n/a
21	Limonite Av.	e/o Archibald Av.	Commercial/Res.	73.2	125	269	579
22	Limonite Av.	e/o Harrison Av.	Residential	74.0	140	301	649
23	Limonite Av.	e/o Sumner Av.	Residential	74.2	145	313	675
24	Limonite Av.	e/o Scholar Wy.	Residential	74.6	155	333	717
25	Limonite Av.	e/o Hamner Av.	Commercial	75.2	168	363	781

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 2021 WITHOUT PROJECT CONDITIONS NOISE CONTOURS

ID	Road	Segment	Adjacent Planned (Existing) Land Use ¹	CNEL at Nearest Adjacent Land Use (dBA) ²	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Grove Av.	n/o Merrill Av.	Business Park (Agr.)	72.9	78	167	360
2	Hellman Av.	n/o Merrill Av.	Business Park (Agr.)	65.0	RW	75	161
3	Hellman Av.	s/o Kimball Av.	Residential	74.7	100	216	465
4	Archibald Av.	n/o Riverside Dr.	Residential	77.2	222	479	1031
5	Archibald Av.	s/o Riverside Dr.	Residential	78.0	252	543	1169
6	Archibald Av.	s/o Chino Av.	Residential	77.6	236	508	1095
7	Archibald Av.	s/o Schaefer Av.	Residential	77.5	235	507	1093
8	Archibald Av.	s/o Ontario Ranch Rd.	Residential	78.6	275	593	1278
9	Archibald Av.	s/o Eucalyptus Av.	Residential	78.6	276	596	1283
10	Archibald Av.	s/o Merrill Av.	Residential	78.8	285	613	1321
11	Archibald Av.	s/o Limonite Av.	Residential	76.3	201	433	932
12	Archibald Av.	s/o 65th St.	Residential	76.4	204	439	947
13	Archibald Av.	s/o Schleisman Rd.	Residential	75.4	175	376	810
14	Ontario Ranch Rd.	e/o Archibald Av.	Residential	75.5	185	398	858
15	Merrill Av.	w/o Grove Av.	Commercial	76.3	116	250	539
16	Merrill Av.	w/o Flight Av.	Public	76.8	125	270	582
17	Merrill Av.	e/o Hellman Av.	Industrial	76.7	124	267	574
18	Merrill Av.	e/o Archibald Av.	Residential	70.6	49	105	226
19	Kimball Av.	w/o Hellman Av.	Residential	75.9	122	262	565
20	Limonite Av.	e/o Hellman Av.	Industrial (Agr.)	n/a	n/a	n/a	n/a
21	Limonite Av.	e/o Archibald Av.	Commercial/Res.	75.2	169	363	783
22	Limonite Av.	e/o Harrison Av.	Residential	76.1	193	416	896
23	Limonite Av.	e/o Sumner Av.	Residential	76.3	201	432	931
24	Limonite Av.	e/o Scholar Wy.	Residential	76.5	207	446	962
25	Limonite Av.	e/o Hamner Av.	Commercial	76.6	210	452	975

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 2021 WITH PROJECT CONDITIONS NOISE CONTOURS

ID	Road	Segment	Adjacent Planned (Existing) Land Use ¹	CNEL at Nearest Adjacent Land Use (dBA) ²	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Grove Av.	n/o Merrill Av.	Business Park (Agr.)	72.9	78	168	363
2	Hellman Av.	n/o Merrill Av.	Business Park (Agr.)	65.2	RW	77	165
3	Hellman Av.	s/o Kimball Av.	Residential	74.7	101	217	467
4	Archibald Av.	n/o Riverside Dr.	Residential	77.2	224	483	1041
5	Archibald Av.	s/o Riverside Dr.	Residential	78.0	255	549	1182
6	Archibald Av.	s/o Chino Av.	Residential	77.6	239	515	1109
7	Archibald Av.	s/o Schaefer Av.	Residential	77.6	239	514	1107
8	Archibald Av.	s/o Ontario Ranch Rd.	Residential	78.6	279	601	1294
9	Archibald Av.	s/o Eucalyptus Av.	Residential	78.7	280	603	1300
10	Archibald Av.	s/o Merrill Av.	Residential	78.9	291	627	1350
11	Archibald Av.	s/o Limonite Av.	Residential	76.4	202	436	939
12	Archibald Av.	s/o 65th St.	Residential	76.5	205	442	952
13	Archibald Av.	s/o Schleisman Rd.	Residential	75.4	175	378	813
14	Ontario Ranch Rd.	e/o Archibald Av.	Residential	75.5	185	399	860
15	Merrill Av.	w/o Grove Av.	Commercial	76.4	118	253	546
16	Merrill Av.	w/o Flight Av.	Public	76.9	127	274	589
17	Merrill Av.	e/o Hellman Av.	Industrial	76.9	126	272	585
18	Merrill Av.	e/o Archibald Av.	Residential	70.7	49	106	227
19	Kimball Av.	w/o Hellman Av.	Residential	76.0	122	264	568
20	Limonite Av.	e/o Hellman Av.	Industrial (Agr.)	n/a	n/a	n/a	n/a
21	Limonite Av.	e/o Archibald Av.	Commercial/Res.	75.4	173	373	803
22	Limonite Av.	e/o Harrison Av.	Residential	76.2	197	424	914
23	Limonite Av.	e/o Sumner Av.	Residential	76.4	204	440	948
24	Limonite Av.	e/o Scholar Wy.	Residential	76.6	211	454	977
25	Limonite Av.	e/o Hamner Av.	Commercial	76.7	212	457	986

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: HORIZON YEAR 2040 WITHOUT PROJECT WITHOUT LIMONITE EXT. CONDITIONS

ID	Road	Segment	Adjacent Planned (Existing) Land Use ¹	CNEL at Nearest Adjacent Land Use (dBA) ²	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Grove Av.	n/o Merrill Av.	Business Park (Agr.)	73.1	80	173	373
2	Hellman Av.	n/o Merrill Av.	Business Park (Agr.)	70.1	75	162	348
3	Hellman Av.	s/o Kimball Av.	Residential	73.9	89	192	414
4	Archibald Av.	n/o Riverside Dr.	Residential	75.8	181	391	842
5	Archibald Av.	s/o Riverside Dr.	Residential	77.6	237	511	1100
6	Archibald Av.	s/o Chino Av.	Residential	77.5	232	501	1079
7	Archibald Av.	s/o Schaefer Av.	Residential	77.2	223	480	1034
8	Archibald Av.	s/o Ontario Ranch Rd.	Residential	78.0	253	545	1174
9	Archibald Av.	s/o Eucalyptus Av.	Residential	78.1	257	553	1191
10	Archibald Av.	s/o Merrill Av.	Residential	77.5	235	506	1090
11	Archibald Av.	s/o Limonite Av.	Residential	76.9	219	473	1018
12	Archibald Av.	s/o 65th St.	Residential	77.0	223	481	1036
13	Archibald Av.	s/o Schleisman Rd.	Residential	75.9	188	404	871
14	Ontario Ranch Rd.	e/o Archibald Av.	Residential	75.0	173	372	802
15	Merrill Av.	w/o Grove Av.	Commercial	76.3	116	251	541
16	Merrill Av.	w/o Flight Av.	Public	77.6	141	304	655
17	Merrill Av.	e/o Hellman Av.	Industrial	78.7	166	358	771
18	Merrill Av.	e/o Archibald Av.	Residential	69.5	RW	87	189
19	Kimball Av.	w/o Hellman Av.	Residential	74.8	103	221	477
20	Limonite Av.	e/o Hellman Av.	Industrial (Agr.)	n/a	n/a	n/a	n/a
21	Limonite Av.	e/o Archibald Av.	Commercial/Res.	76.3	201	432	931
22	Limonite Av.	e/o Harrison Av.	Residential	76.6	210	452	975
23	Limonite Av.	e/o Sumner Av.	Residential	76.6	208	448	966
24	Limonite Av.	e/o Scholar Wy.	Residential	76.6	209	449	968
25	Limonite Av.	e/o Hamner Av.	Commercial	75.9	188	404	871

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: HORIZON YEAR 2040 WITH PROJECT WITHOUT LIMONITE EXT. CONDITIONS

ID	Road	Segment	Adjacent Planned (Existing) Land Use ¹	CNEL at Nearest Adjacent Land Use (dBA) ²	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Grove Av.	n/o Merrill Av.	Business Park (Agr.)	73.1	81	174	375
2	Hellman Av.	n/o Merrill Av.	Business Park (Agr.)	70.2	76	163	352
3	Hellman Av.	s/o Kimball Av.	Residential	73.9	90	193	416
4	Archibald Av.	n/o Riverside Dr.	Residential	75.9	184	396	852
5	Archibald Av.	s/o Riverside Dr.	Residential	77.7	240	517	1114
6	Archibald Av.	s/o Chino Av.	Residential	77.5	235	507	1093
7	Archibald Av.	s/o Schaefer Av.	Residential	77.3	226	487	1049
8	Archibald Av.	s/o Ontario Ranch Rd.	Residential	78.1	256	553	1191
9	Archibald Av.	s/o Eucalyptus Av.	Residential	78.2	260	561	1208
10	Archibald Av.	s/o Merrill Av.	Residential	77.7	242	521	1122
11	Archibald Av.	s/o Limonite Av.	Residential	76.9	221	475	1024
12	Archibald Av.	s/o 65th St.	Residential	77.0	224	483	1041
13	Archibald Av.	s/o Schleisman Rd.	Residential	75.9	188	406	874
14	Ontario Ranch Rd.	e/o Archibald Av.	Residential	75.0	173	373	804
15	Merrill Av.	w/o Grove Av.	Commercial	76.4	118	254	547
16	Merrill Av.	w/o Flight Av.	Public	77.7	143	307	662
17	Merrill Av.	e/o Hellman Av.	Industrial	78.7	168	362	780
18	Merrill Av.	e/o Archibald Av.	Residential	69.6	RW	88	191
19	Kimball Av.	w/o Hellman Av.	Residential	74.9	103	223	480
20	Limonite Av.	e/o Hellman Av.	Industrial (Agr.)	n/a	n/a	n/a	n/a
21	Limonite Av.	e/o Archibald Av.	Commercial/Res.	76.4	204	441	949
22	Limonite Av.	e/o Harrison Av.	Residential	76.7	214	460	992
23	Limonite Av.	e/o Sumner Av.	Residential	76.7	212	456	982
24	Limonite Av.	e/o Scholar Wy.	Residential	76.7	212	457	984
25	Limonite Av.	e/o Hamner Av.	Commercial	76.0	190	410	883

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 2040 WITHOUT PROJECT WITH LIMONITE EXT. CONDITIONS

ID	Road	Segment	Adjacent Planned (Existing) Land Use ¹	CNEL at Nearest Adjacent Land Use (dBA) ²	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Grove Av.	n/o Merrill Av.	Business Park (Agr.)	72.3	71	152	328
2	Hellman Av.	n/o Merrill Av.	Business Park (Agr.)	69.6	RW	151	325
3	Hellman Av.	s/o Kimball Av.	Residential	75.1	107	231	497
4	Archibald Av.	n/o Riverside Dr.	Residential	75.8	181	391	842
5	Archibald Av.	s/o Riverside Dr.	Residential	77.6	237	511	1100
6	Archibald Av.	s/o Chino Av.	Residential	77.5	232	501	1079
7	Archibald Av.	s/o Schaefer Av.	Residential	77.2	223	480	1034
8	Archibald Av.	s/o Ontario Ranch Rd.	Residential	78.0	253	545	1174
9	Archibald Av.	s/o Eucalyptus Av.	Residential	78.1	257	553	1191
10	Archibald Av.	s/o Merrill Av.	Residential	78.2	259	558	1202
11	Archibald Av.	s/o Limonite Av.	Residential	76.1	195	420	905
12	Archibald Av.	s/o 65th St.	Residential	75.9	189	407	876
13	Archibald Av.	s/o Schleisman Rd.	Residential	75.2	169	364	784
14	Ontario Ranch Rd.	e/o Archibald Av.	Residential	75.0	173	372	802
15	Merrill Av.	w/o Grove Av.	Commercial	77.5	140	301	648
16	Merrill Av.	w/o Flight Av.	Public	78.1	152	327	704
17	Merrill Av.	e/o Hellman Av.	Industrial	77.6	141	304	655
18	Merrill Av.	e/o Archibald Av.	Residential	70.6	48	104	225
19	Kimball Av.	w/o Hellman Av.	Residential	76.8	139	300	646
20	Limonite Av.	e/o Hellman Av.	Industrial (Agr.)	74.2	145	313	675
21	Limonite Av.	e/o Archibald Av.	Commercial/Res.	76.3	201	434	934
22	Limonite Av.	e/o Harrison Av.	Residential	76.6	210	452	975
23	Limonite Av.	e/o Sumner Av.	Residential	76.6	208	448	966
24	Limonite Av.	e/o Scholar Wy.	Residential	76.6	209	450	969
25	Limonite Av.	e/o Hamner Av.	Commercial	75.9	188	404	871

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.

TABLE 7-8: HORIZON YEAR 2040 WITH PROJECT WITH LIMONITE EXT. CONDITIONS

ID	Road	Segment	Adjacent Planned (Existing) Land Use ¹	CNEL at Nearest Adjacent Land Use (dBA) ²	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Grove Av.	n/o Merrill Av.	Business Park (Agr.)	72.3	71	154	331
2	Hellman Av.	n/o Merrill Av.	Business Park (Agr.)	69.7	RW	153	329
3	Hellman Av.	s/o Kimball Av.	Residential	75.1	107	232	499
4	Archibald Av.	n/o Riverside Dr.	Residential	75.9	184	396	852
5	Archibald Av.	s/o Riverside Dr.	Residential	77.7	240	517	1114
6	Archibald Av.	s/o Chino Av.	Residential	77.5	235	507	1093
7	Archibald Av.	s/o Schaefer Av.	Residential	77.3	226	487	1049
8	Archibald Av.	s/o Ontario Ranch Rd.	Residential	78.1	256	553	1191
9	Archibald Av.	s/o Eucalyptus Av.	Residential	78.2	260	561	1208
10	Archibald Av.	s/o Merrill Av.	Residential	78.3	266	572	1233
11	Archibald Av.	s/o Limonite Av.	Residential	76.2	196	423	912
12	Archibald Av.	s/o 65th St.	Residential	76.0	190	409	881
13	Archibald Av.	s/o Schleisman Rd.	Residential	75.2	170	365	787
14	Ontario Ranch Rd.	e/o Archibald Av.	Residential	75.0	173	373	804
15	Merrill Av.	w/o Grove Av.	Commercial	77.6	141	304	654
16	Merrill Av.	w/o Flight Av.	Public	78.1	153	330	711
17	Merrill Av.	e/o Hellman Av.	Industrial	77.7	143	309	665
18	Merrill Av.	e/o Archibald Av.	Residential	70.7	49	105	226
19	Kimball Av.	w/o Hellman Av.	Residential	76.8	140	301	649
20	Limonite Av.	e/o Hellman Av.	Industrial (Agr.)	74.3	146	315	680
21	Limonite Av.	e/o Archibald Av.	Commercial/Res.	76.5	205	442	953
22	Limonite Av.	e/o Harrison Av.	Residential	76.7	214	460	992
23	Limonite Av.	e/o Sumner Av.	Residential	76.7	212	456	982
24	Limonite Av.	e/o Scholar Wy.	Residential	76.7	212	457	984
25	Limonite Av.	e/o Hamner Av.	Commercial	76.0	190	410	883

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.

7.2 EXISTING CONDITION PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-1 presents the Existing without Project conditions CNEL noise levels. The without Project exterior noise levels are expected to range from 50.7 to 76.8 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 54.2 to 77.0 dBA CNEL. As shown on Table 7-9 the Project will generate a noise level increase of up to 3.5 dBA CNEL on the study area roadway segments. The highest Project-related increase of up to 3.5 dBA CNEL on Segment 2 is due to the overall percentage increase in the total ADT volume from Existing without Project conditions to Existing with Project conditions.

Based on the significance criteria in Section 4, the Project-related noise level increases are considered *less than significant* under Existing conditions at the land uses adjacent to roadways conveying Project traffic.

TABLE 7-9: EXISTING CONDITION OFF-SITE PROJECT-RELATED TRAFFIC NOISE IMPACTS

ID	Road	Segment	CNEL at Adjacent Land Use (dBA) ¹			Noise-Sensitive Land Use?	Threshold Exceeded? ²
			No Project	With Project	Project Addition		
1	Grove Av.	n/o Merrill Av.	71.4	71.4	0.0	No	No
2	Hellman Av.	n/o Merrill Av.	50.7	54.2	3.5	No	No
3	Hellman Av.	s/o Kimball Av.	73.7	73.7	0.0	Yes	No
4	Archibald Av.	n/o Riverside Dr.	75.4	75.5	0.1	Yes	No
5	Archibald Av.	s/o Riverside Dr.	76.3	76.4	0.1	Yes	No
6	Archibald Av.	s/o Chino Av.	75.5	75.7	0.2	Yes	No
7	Archibald Av.	s/o Schaefer Av.	75.5	75.6	0.1	Yes	No
8	Archibald Av.	s/o Ontario Ranch Rd.	76.5	76.7	0.2	Yes	No
9	Archibald Av.	s/o Eucalyptus Av.	76.6	76.7	0.1	Yes	No
10	Archibald Av.	s/o Merrill Av.	76.8	77.0	0.2	Yes	No
11	Archibald Av.	s/o Limonite Av.	74.2	74.3	0.1	Yes	No
12	Archibald Av.	s/o 65th St.	74.7	74.7	0.0	Yes	No
13	Archibald Av.	s/o Schleisman Rd.	74.1	74.1	0.0	Yes	No
14	Ontario Ranch Rd.	e/o Archibald Av.	73.6	73.6	0.0	Yes	No
15	Merrill Av.	w/o Grove Av.	73.5	73.6	0.1	Yes	No
16	Merrill Av.	w/o Flight Av.	73.9	74.1	0.2	Yes	No
17	Merrill Av.	e/o Hellman Av.	73.9	74.1	0.2	Yes	No
18	Merrill Av.	e/o Archibald Av.	67.2	67.3	0.1	Yes	No
19	Kimball Av.	w/o Hellman Av.	74.7	74.8	0.1	Yes	No
20	Limonite Av.	e/o Hellman Av.	n/a	n/a	n/a	n/a	n/a
21	Limonite Av.	e/o Archibald Av.	73.0	73.2	0.2	Yes	No
22	Limonite Av.	e/o Harrison Av.	73.7	74.0	0.3	Yes	No
23	Limonite Av.	e/o Sumner Av.	74.0	74.2	0.2	Yes	No
24	Limonite Av.	e/o Scholar Wy.	74.5	74.6	0.1	Yes	No
25	Limonite Av.	e/o Hamner Av.	75.1	75.2	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).

"n/a" = Roadway segment does not exist in the given scenario.

7.3 OPENING YEAR 2021 PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-3 presents the Opening Year 2021 without Project conditions CNEL noise levels. The without Project exterior noise levels are expected to range from 65.0 to 78.8 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-4 shows the Opening Year 2021 with Project conditions will range from 65.2 to 78.9 dBA CNEL. As shown on Table 7-10 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 Opening Year 2021 conditions at the land uses adjacent to roadways conveying Project traffic.

TABLE 7-10: OPENING YEAR OFF-SITE PROJECT-RELATED TRAFFIC NOISE IMPACTS

ID	Road	Segment	CNEL at Adjacent Land Use (dBA) ¹			Noise-Sensitive Land Use?	Threshold Exceeded? ²
			No Project	With Project	Project Addition		
1	Grove Av.	n/o Merrill Av.	72.9	72.9	0.0	No	No
2	Hellman Av.	n/o Merrill Av.	65.0	65.2	0.2	No	No
3	Hellman Av.	s/o Kimball Av.	74.7	74.7	0.0	Yes	No
4	Archibald Av.	n/o Riverside Dr.	77.2	77.2	0.0	Yes	No
5	Archibald Av.	s/o Riverside Dr.	78.0	78.0	0.0	Yes	No
6	Archibald Av.	s/o Chino Av.	77.6	77.6	0.0	Yes	No
7	Archibald Av.	s/o Schaefer Av.	77.5	77.6	0.1	Yes	No
8	Archibald Av.	s/o Ontario Ranch Rd.	78.6	78.6	0.0	Yes	No
9	Archibald Av.	s/o Eucalyptus Av.	78.6	78.7	0.1	Yes	No
10	Archibald Av.	s/o Merrill Av.	78.8	78.9	0.1	Yes	No
11	Archibald Av.	s/o Limonite Av.	76.3	76.4	0.1	Yes	No
12	Archibald Av.	s/o 65th St.	76.4	76.5	0.1	Yes	No
13	Archibald Av.	s/o Schleisman Rd.	75.4	75.4	0.0	Yes	No
14	Ontario Ranch Rd.	e/o Archibald Av.	75.5	75.5	0.0	Yes	No
15	Merrill Av.	w/o Grove Av.	76.3	76.4	0.1	Yes	No
16	Merrill Av.	w/o Flight Av.	76.8	76.9	0.1	Yes	No
17	Merrill Av.	e/o Hellman Av.	76.7	76.9	0.2	Yes	No
18	Merrill Av.	e/o Archibald Av.	70.6	70.7	0.1	Yes	No
19	Kimball Av.	w/o Hellman Av.	75.9	76.0	0.1	Yes	No
20	Limonite Av.	e/o Hellman Av.	n/a	n/a	n/a	n/a	n/a
21	Limonite Av.	e/o Archibald Av.	75.2	75.4	0.2	Yes	No
22	Limonite Av.	e/o Harrison Av.	76.1	76.2	0.1	Yes	No
23	Limonite Av.	e/o Sumner Av.	76.3	76.4	0.1	Yes	No
24	Limonite Av.	e/o Scholar Wy.	76.5	76.6	0.1	Yes	No
25	Limonite Av.	e/o Hamner Av.	76.6	76.7	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).

"n/a" = Roadway segment does not exist in the given scenario.

7.4 HORIZON YEAR 2040 PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

The following sections present Horizon Year 2040 off-site traffic noise level conditions without and with the Project, without and with the Limonite Extension.

7.4.1 WITHOUT LIMONITE EXTENSION CONDITIONS

Table 7-5 presents the Horizon Year 2040 without Limonite Extension without Project conditions CNEL noise levels. The without Project exterior noise levels are expected to range from 69.5 to 78.7 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-6 shows the Horizon Year 2040 without Limonite Extension with Project conditions will range from 69.6 to 78.7 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 2040 without Limonite Extension conditions at the land uses adjacent to roadways conveying Project traffic.

7.4.2 WITH LIMONITE EXTENSION CONDITIONS

Table 7-7 presents the Horizon Year 2040 with Limonite Extension without Project conditions CNEL noise levels. The without Project exterior noise levels are expected to range from 69.6 to 78.2 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-8 shows the Horizon Year 2040 with Limonite Extension with Project conditions will range from 69.7 to 78.3 dBA CNEL. As shown on Table 7-12 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 2040 with Limonite Extension conditions at the land uses adjacent to roadways conveying Project traffic.

TABLE 7-11: HORIZON YEAR 2040 WITHOUT LIMONITE EXT. PROJECT TRAFFIC NOISE IMPACTS

ID	Road	Segment	CNEL at Adjacent Land Use (dBA) ¹			Noise-Sensitive Land Use?	Threshold Exceeded? ²
			No Project	With Project	Project Addition		
1	Grove Av.	n/o Merrill Av.	73.1	73.1	0.0	No	No
2	Hellman Av.	n/o Merrill Av.	70.1	70.2	0.1	No	No
3	Hellman Av.	s/o Kimball Av.	73.9	73.9	0.0	Yes	No
4	Archibald Av.	n/o Riverside Dr.	75.8	75.9	0.1	Yes	No
5	Archibald Av.	s/o Riverside Dr.	77.6	77.7	0.1	Yes	No
6	Archibald Av.	s/o Chino Av.	77.5	77.5	0.0	Yes	No
7	Archibald Av.	s/o Schaefer Av.	77.2	77.3	0.1	Yes	No
8	Archibald Av.	s/o Ontario Ranch Rd.	78.0	78.1	0.1	Yes	No
9	Archibald Av.	s/o Eucalyptus Av.	78.1	78.2	0.1	Yes	No
10	Archibald Av.	s/o Merrill Av.	77.5	77.7	0.2	Yes	No
11	Archibald Av.	s/o Limonite Av.	76.9	76.9	0.0	Yes	No
12	Archibald Av.	s/o 65th St.	77.0	77.0	0.0	Yes	No
13	Archibald Av.	s/o Schleisman Rd.	75.9	75.9	0.0	Yes	No
14	Ontario Ranch Rd.	e/o Archibald Av.	75.0	75.0	0.0	Yes	No
15	Merrill Av.	w/o Grove Av.	76.3	76.4	0.1	Yes	No
16	Merrill Av.	w/o Flight Av.	77.6	77.7	0.1	Yes	No
17	Merrill Av.	e/o Hellman Av.	78.7	78.7	0.0	Yes	No
18	Merrill Av.	e/o Archibald Av.	69.5	69.6	0.1	Yes	No
19	Kimball Av.	w/o Hellman Av.	74.8	74.9	0.1	Yes	No
20	Limonite Av.	e/o Hellman Av.	n/a	n/a	n/a	n/a	n/a
21	Limonite Av.	e/o Archibald Av.	76.3	76.4	0.1	Yes	No
22	Limonite Av.	e/o Harrison Av.	76.6	76.7	0.1	Yes	No
23	Limonite Av.	e/o Sumner Av.	76.6	76.7	0.1	Yes	No
24	Limonite Av.	e/o Scholar Wy.	76.6	76.7	0.1	Yes	No
25	Limonite Av.	e/o Hamner Av.	75.9	76.0	0.1	Yes	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).

"n/a" = Roadway segment does not exist in the given scenario.

TABLE 7-12: HORIZON YEAR 2040 WITH LIMONITE EXT. PROJECT TRAFFIC NOISE IMPACTS

ID	Road	Segment	CNEL at Adjacent Land Use (dBA) ¹			Noise-Sensitive Land Use?	Threshold Exceeded? ²
			No Project	With Project	Project Addition		
1	Grove Av.	n/o Merrill Av.	72.3	72.3	0.0	No	No
2	Hellman Av.	n/o Merrill Av.	69.6	69.7	0.1	No	No
3	Hellman Av.	s/o Kimball Av.	75.1	75.1	0.0	Yes	No
4	Archibald Av.	n/o Riverside Dr.	75.8	75.9	0.1	Yes	No
5	Archibald Av.	s/o Riverside Dr.	77.6	77.7	0.1	Yes	No
6	Archibald Av.	s/o Chino Av.	77.5	77.5	0.0	Yes	No
7	Archibald Av.	s/o Schaefer Av.	77.2	77.3	0.1	Yes	No
8	Archibald Av.	s/o Ontario Ranch Rd.	78.0	78.1	0.1	Yes	No
9	Archibald Av.	s/o Eucalyptus Av.	78.1	78.2	0.1	Yes	No
10	Archibald Av.	s/o Merrill Av.	78.2	78.3	0.1	Yes	No
11	Archibald Av.	s/o Limonite Av.	76.1	76.2	0.1	Yes	No
12	Archibald Av.	s/o 65th St.	75.9	76.0	0.1	Yes	No
13	Archibald Av.	s/o Schleisman Rd.	75.2	75.2	0.0	Yes	No
14	Ontario Ranch Rd.	e/o Archibald Av.	75.0	75.0	0.0	Yes	No
15	Merrill Av.	w/o Grove Av.	77.5	77.6	0.1	Yes	No
16	Merrill Av.	w/o Flight Av.	78.1	78.1	0.0	Yes	No
17	Merrill Av.	e/o Hellman Av.	77.6	77.7	0.1	Yes	No
18	Merrill Av.	e/o Archibald Av.	70.6	70.7	0.1	Yes	No
19	Kimball Av.	w/o Hellman Av.	76.8	76.8	0.0	Yes	No
20	Limonite Av.	e/o Hellman Av.	74.2	74.3	0.1	Yes	No
21	Limonite Av.	e/o Archibald Av.	76.3	76.5	0.2	Yes	No
22	Limonite Av.	e/o Harrison Av.	76.6	76.7	0.1	Yes	No
23	Limonite Av.	e/o Sumner Av.	76.6	76.7	0.1	Yes	No
24	Limonite Av.	e/o Scholar Wy.	76.6	76.7	0.1	Yes	No
25	Limonite Av.	e/o Hamner Av.	75.9	76.0	0.1	Yes	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).

8 RECEIVER LOCATIONS

To assess the potential for long-term operational and short-term construction noise impacts, the following six receiver locations as shown on Exhibit 8-A were identified as representative locations for focused 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.

Sensitive receivers near the Project site include existing residential homes and agricultural land 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 135 feet north of the Project site, R1 represents existing residential homes and outdoor living areas (backyards). A 24-hour noise level measurement was taken near this location, L2, to describe the existing ambient noise environment.
- R2: Location R2 represents existing residential homes north of the Project site at roughly 112 feet and outdoor living areas (backyards). A 24-hour noise level measurement, L2, is used describe the existing ambient noise environment at this location.
- R3: Location R3 represents recently constructed residential homes and outdoor living areas (backyards) at roughly 10 feet east of the Project site. A 24-hour noise level measurement, L2, is used describe the existing ambient noise environment at this location. As discussed in Section 5.3, representative ambient noise levels at measurement location L2 are used to describe the ambient conditions at this receiver location due to on-going construction activities of the future residential use.
- R4: Location R4 represents recently constructed residential homes and outdoor living areas (backyards) at roughly 10 feet east of the Project site. A 24-hour noise level measurement, L2, is used describe the existing ambient noise environment at this location. As discussed in Section 5.3, representative ambient noise levels at measurement location L2 are used to describe the ambient conditions at this receiver location due to on-going construction activities of the future residential use.
- R5: Location R5 represents existing residential homes located roughly 512 feet southeast of the Project site across Limonite Avenue. A 24-hour noise level measurement was taken east of this location, L5, to describe the existing ambient noise environment.
- R6: Location R6 represents an existing agricultural use with residential home located approximately 220 feet west of the Project site on Archibald Avenue. A 24-hour noise

level measurement was taken near this location, L3, to describe the existing ambient noise environment.

EXHIBIT 8-A: RECEIVER LOCATIONS



9 OPERATIONAL IMPACTS

This section analyzes the potential operational noise impacts due to the Project's stationary noise sources on the off-site sensitive receiver locations identified in Section 8. In addition, a focused evaluation is provided for the car wash use within the Project site which includes additional receivers at location R4 (R4.1 to R4.4) to represent individual backyards as well as first and second-floor building façades of each residence. This focused car wash analysis is provided due to the proximity of the residential homes located immediately east of the car wash and the associated operational noise levels such as the tunnel exit blowers and vacuum activities. Exhibit 9-A identifies the receiver locations and noise source locations used to assess the Project-related operational noise levels.

9.1 REFERENCE NOISE LEVELS

To estimate the Project operational noise impacts, reference noise level measurements were collected from similar types of activities to represent the noise levels expected with the development of the proposed Project. This section provides a detailed description of the reference noise level measurements shown on Table 9-1 used to estimate the Project operational noise impacts. It is important to note that the following projected noise levels represent a conservative noise environment with the roof-top air conditioning units, shopping cart corrals, drive-through speakerphones, car wash tunnel exit and vacuum activities, gas station activity, parking lot vehicle movements, and truck unloading/docking activity all operating simultaneously. These noise level impacts will likely vary throughout the day.

Table 9-1 shows the reference noise level measurement for each operational activity expected at the Project site in addition to the duration the reference noise level measurement was measured for at the time it was collected. All reference measurements represent peak observed activities over the given reference measurement duration. To describe the worst-case peak hour conditions, all operational activities within the Project site are analyzed for all 60 minutes of the "peak-hour" condition. As such, this analysis includes no periods of inactivity in its calculations of Project-only operational noise levels. This approach likely overstates the actual Project impacts since it assumes constant operational noise sources when in reality, these activities (such as air-conditioning units) cycle on and off throughout the hour.

Consistent with the City of Eastvale and City of Ontario operational noise level standards previously shown on Table 3-1, the reference noise levels for each noise source used in this analysis are provided on Table 9-1 under the applicable L_{eq} , L_{25} , and L_{max} noise level descriptors.

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.) ⁸	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
Shopping Cart Corral ²	00:00:16	5'	3'	60	72.9	70.3	83.4	52.9	50.3	63.4
Drive-Through Speakerphone ³	02:00:00	15'	3'	60	62.0	62.1	66.4	51.5	51.6	55.9
Car Wash Tunnel Exit (Air Dryer) ⁴	-	40'	10'	60	76.0	65.2	81.5	74.1	63.3	79.6
Gas Station Activity ⁵	00:03:00	5'	5'	60	68.2	66.9	82.4	48.2	46.9	62.4
Parking Lot Vehicle Movements ²	00:15:00	5'	5'	60	60.1	60.7	79.5	45.1	45.7	64.5
Car Wash Vacuum Activity ⁶	00:01:02	5'	5'	60	74.6	75.4	78.8	54.6	55.4	58.8
Truck Unloading/Docking Activity ⁷	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.

² As measured by Urban Crossroads, Inc. on 5/30/2012 at the Laguna Niguel Walmart located at 27470 Alicia Parkway.

³ As measured by Urban Crossroads, Inc. on 12/19/2014 at a Panera Bread drive-thru in the City of Brea.

⁴ Based on a Motor City Wash Works 90 horsepower air blowers/tunnel exit reference noise level at 40 feet.

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

⁶ As measured by Urban Crossroads, Inc. on 5/27/2011 at an express car wash located at 1195 Baker Street in Costa Mesa.

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

⁸ Anticipated duration (minutes within the hour) of noise activity during peak hourly conditions expected at the Project site.

9.1.1 ROOF-TOP AIR CONDITIONING UNITS

To assess the noise levels created by the roof-top air conditioning units at the Project site, reference noise levels measurements were taken at the Santee Walmart on July 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. The reference noise level represents a Lennox SCA120 series 10-ton model packaged air conditioning unit. Using a uniform reference distance of 50 feet, the reference noise level noise level is 57.2 dBA L_{eq} . 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.

9.1.2 SHOPPING CART CORRAL (METAL CARTS)

To evaluate the noise level impacts from shopping carts placed by customers into assigned shopping cart areas, Urban Crossroads collected noise level measurements at the Laguna Niguel Walmart located at 27470 Alicia Parkway on May 30th, 2012. The reference noise level at a uniform distance of 50 feet is 52.9 dBA L_{eq} . The noise impacts are mainly due to the metal shopping carts crashing into other carts already placed in the corral as well as striking the side rails.

9.1.3 DRIVE-THROUGH SPEAKERPHONE

To describe the potential noise level impacts associated with potential drive-thru speakerphones and vehicle activities, a reference noise level measurement was collected on Friday, December 19th, 2014 at a Panera Bread restaurant located at 423 South Associated Road in the City of Brea. The reference noise levels collected at the Panera Bread restaurant are expected to reflect potential drive-thru speakerphone noise level activities at the Project site, since the reference measurement includes both drive-thru speakerphone and vehicle activity noise. The noise sources included in the reference noise level measurement consist of voices of the Panera Bread employees over the speakerphone, customers' voices ordering food, car engines idling, car radios playing music, and cars queuing in the drive-thru lane. At 50 feet from the speakerphone, a reference noise level of 51.5 dBA L_{eq} was measured. This reference noise level measurement overstates the actual average noise levels since it represents the average of 28 speakerphone menu board ordering events observed over a two-hour period. In other words, the Panera Bread speakerphone menu board reference noise level describes continuous drive-thru operations and does not include any periods of inactivity.

9.1.4 CAR WASH TUNNEL EXIT (AIR DRYERS)

The car wash tunnel exit reference noise level used in this noise study are based on specifications for a 90 horsepower Profiler plus Dry-N-Shine provided by Motor City Wash Works for air blower and dryer tunnel equipment. (30) Based on equipment specifications, the reference car wash tunnel exit noise level is 76 dBA at 40 feet under peak operating conditions. This does not account for the actual time-weighted energy average noise levels during typical Project operational conditions. (30) However, to present a conservative approach, this analysis assumes

continuous operation based on a reference noise level of 76 dBA L_{eq} at 40 feet. At the uniform reference distance of 50 feet, this results in an hourly average car wash tunnel exit reference noise level of 74.1 dBA L_{eq} . The reference car wash tunnel exit noise level of 74.1 dBA L_{eq} is also consistent with reference measurements collected by Urban Crossroads, Inc. at an existing express car wash in the City of Irvine which showed a reference hourly noise level of 73.9 dBA L_{eq} over peak hour conditions. (31) The reference noise level measurement includes five 90 horsepower car wash tunnel exit air blowers and a Dry-N-Shine car dryer operating simultaneously at a noise-source height of 10 feet.

Further, this noise analysis does not include any additional attenuation or directional influence provided by locating the car wash air blower and dryer equipment inside the tunnel itself, but rather, models the tunnel exit activities as occurring at the building façade. As such, the analysis may conservatively overstate actual noise levels produced by the car wash tunnel air blower and dryer equipment.

9.1.5 GAS STATION ACTIVITY

To describe the potential noise level impacts created by the gas station of the proposed Project uses, a reference noise level measurement was collected on Tuesday, April 26th, 2016 at an ARCO gas station located at 6501 Quail Hill Parkway in the City of Irvine. The reference noise level measurement includes six cars fueling at once, car doors closing, engines starting, fuel pump TV sounds, and background car pass-by events within a three-minute period. At a uniform reference noise level distance of 50 feet, the reference noise level is 48.2 dBA L_{eq} .

9.1.6 PARKING LOT VEHICLE MOVEMENTS

To determine the noise levels associated with commercial parking lot vehicle movements, Urban Crossroads collected reference noise level measurements at the Laguna Niguel Walmart located at 27470 Alicia Parkway on May 30, 2012. The 15-minute noise level measurement indicates that the parking lot vehicle movements generates noise levels of 45.1 dBA L_{eq} at a normalized distance of 50 feet. The parking lot noise levels are mainly due to cars pulling in and out of spaces, car alarms sounding, and customers moving shopping carts.

9.1.7 CAR WASH VACUUM ACTIVITY

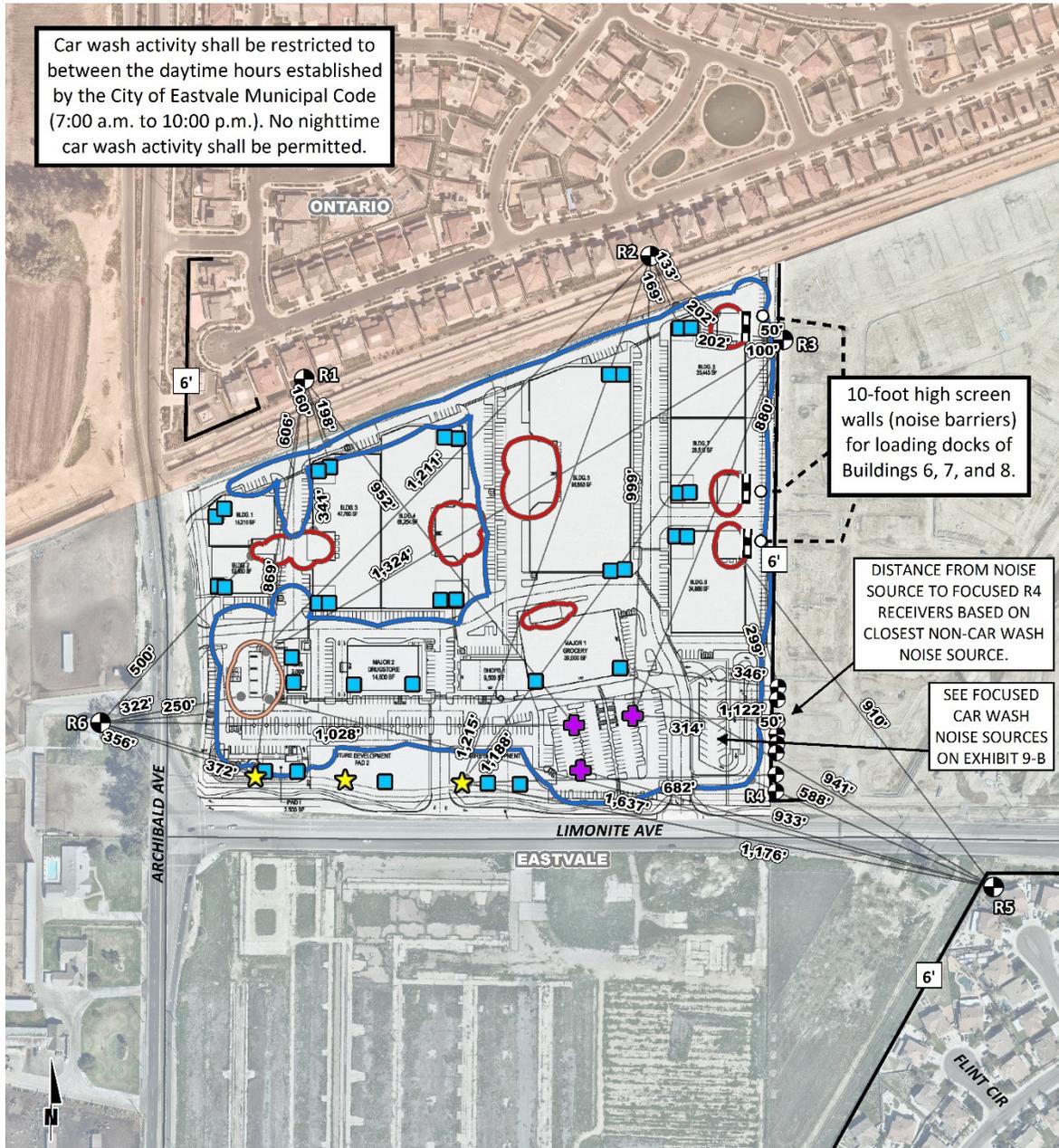
To represent the self-serve vacuums within the Project site, a reference noise level measurement was collected on May 27th, 2011 at an express car wash located at 1195 Baker Street in the City of Costa Mesa. The reference noise level measurement represents up to four vacuums operating simultaneously at the Costa Mesa express car wash. At a uniform reference distance of 50 feet, the vacuum reference noise level is 54.6 dBA L_{eq} .

9.1.8 TRUCK UNLOADING/DOCKING ACTIVITY

Short-term reference noise level measurements were 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 measurements represent 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. Up to ten trucks were observed in the loading dock area including a combination of track trailer semi-trucks, two-axle delivery trucks, and background forklift operations.

The unloading/docking activity noise level measurement was taken over a 15-minute period and represents multiple noise sources 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. At this measurement location, 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. In addition, during the noise level measurement a truck entered the loading dock area and proceeded to reverse and dock in a nearby loading bay, adding truck engine and air brakes noise.

EXHIBIT 9-A: OPERATIONAL NOISE SOURCE AND RECEIVER LOCATIONS



LEGEND:

- Receiver Locations
- Distance from receiver to noise source (in feet)
- 6' Barrier Height (in feet)
- Existing Barrier
- Recommended 10-Foot High Noise Barriers
- Roof-Top Air Conditioning Unit
- Shopping Cart Corral
- Drive-Through Speakerphone
- Gas Station activity
- Parking Lot Vehicle Movements
- Distribution/Warehouse Activity

9.2 OPERATIONAL NOISE LEVELS

Based upon the reference noise levels, it is possible to estimate the Project operational stationary-source noise levels at each of the sensitive receiver locations. The operational noise level calculations 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):

$$\text{SPL}_2 = \text{SPL}_1 - 20\log(D_2/D_1)$$

Where SPL₂ is the resulting noise level after attenuation, SPL₁ is the source noise level, D₂ is the distance to the reference sound pressure level (SPL₁), and D₁ is the distance to the receiver location.

9.2.1 CADNA NOISE PREDICTION MODEL

To provide a focused assessment and detailed noise level contour boundaries for the car wash, Urban Crossroads, Inc. developed a noise prediction model using the CadnaA (Computer Aided Noise Abatement) computer program to calculate the exterior operational noise levels generated by the car wash tunnel exit and vacuum activities. CadnaA can analyze the noise level of multiple types of noise sources and calculates the noise levels at any location using the spatially accurate Project site plan and includes the effects of topography, buildings, and multiple barriers in its calculations using the latest standards to predict outdoor noise impacts.

Using the spatially accurate Project site plan and flown aerial imagery from Nearmap, a CadnaA noise prediction model of the Project study area was developed. The noise model provides a three-dimensional representation of the Project study area using the following key data inputs:

- Ground absorption (hard site conditions);
- Reflections at all buildings and barriers;
- Reference noise level sources by type (e.g., area, point, etc.);
- Reference noise source geometry;
- Multiple noise receiver locations and heights;
- Existing barrier attenuation.

Based on these data inputs, the CadnaA noise prediction model will calculate the distance from each noise source to the receiver locations, in addition to the ground absorption, distance, and barrier/building attenuation to provide a summary of noise level calculations at each receiver location, and the partial noise level contributions by each noise source. The reference sound power level (PWL) for each noise source is used in the CadnaA noise prediction model. While sound pressure levels (e.g. L_{eq}) quantify in decibels the intensity of given sound sources at a reference distance, sound power levels (PWL) are connected to the sound source and are

independent of distance. Sound pressure levels vary substantially with distance from the source and diminish because of intervening obstacles and barriers, air absorption, wind, and other factors. Sound power is the acoustical energy emitted by the sound source and is an absolute value that is not affected by the environment.

REFLECTED NOISE LEVELS

The CadnaA noise prediction model accounts for reflections at all structures, including the Project buildings, existing barriers, and residential homes east of the car wash site. Field studies conducted by the Federal Highway Administration (FHWA) have shown that the reflection from barriers and buildings does not substantially increase noise levels. If all the noise striking a given surface were reflected back, the increase would be theoretically limited to 3 dBA, as the combination of two equal noise sources results in a 3 dBA increase. Further, not all of the acoustical energy is reflected back. Some of the energy would be diffracted over and around the surface itself, and some is scattered by ground coverings (e.g., grass and other plants). Additionally, some of the reflected energy is lost due to the longer path that the noise must travel after it is reflected.

The CadnaA noise prediction model indicates that reflected noise levels from the Project buildings are estimated to range from 0.0 to 0.3 dBA L_{eq} . Consistent with FHWA measurements made to quantify reflective increases, which have not shown an increase of greater than 1 to 2 dBA, the increases due to building reflection estimated at up to 0.3 dBA L_{eq} are not perceptible to the average human ear. (6) The noise level increases due to reflection are included in the in the car wash operational noise level analysis.

9.2.2 UNMITIGATED OPERATIONAL NOISE LEVELS

Table 9-2 indicates that the unmitigated operational noise levels associated with the roof-top air conditioning units, shopping cart corrals, drive-through speakerphones, car wash tunnel exit and vacuum activities, gas station activity, parking lot vehicle movements, and truck unloading/docking activity are expected to range from 35.7 to 52.3 dBA L_{eq} at the nearby sensitive receiver locations. The unmitigated operational noise level calculation worksheets are included in Appendix 9.1 for the non-car wash noise sources, and Appendix 9.2 includes the CadnaA noise model inputs and calculation data for the focused car wash assessment.

Since a focused analysis is provided for multiple residential homes adjacent to the car wash use, represented by receiver locations R4.1 to R 4.4, the operational noise levels shown on Table 9-2 for R4.1 to R4.4 were calculated based on the shortest distance from any of the focused receiver locations represented by R4 on Exhibit 9-A to the nearest non-car wash noise source to present a conservative approach. As such, non-car wash-related Project operational noise levels at these receiver locations are likely overstated as each individual focused receiver location would be located at varying distances to the non-car wash noise sources throughout the Project site. However, for the purpose of this analysis, the shortest distance represents a conservative estimate of the non-car wash noise levels associated with the operation of the Project for these residential homes.

TABLE 9-2: UNMITIGATED PROJECT OPERATIONAL NOISE LEVELS

Receiver Location ¹	Noise Source ²	Project Operational Noise Levels (dBA) ³		
		Leq (E. Avg.)	L ₂₅ (15 mins)	L _{max} (Anytime)
R1	Roof-Top Air Conditioning Unit	45.2	44.1	46.2
	Shopping Cart Corral	27.3	24.7	37.8
	Drive-Through Speakerphone	26.7	26.8	31.1
	Gas Station Activity	26.5	25.2	40.7
	Parking Lot Vehicle Movements	37.5	38.1	56.9
	Truck Unloading/Docking Activity	46.1	46.1	58.9
	Car Wash Tunnel & Vacuum Activity	23.5	22.0	27.4
	Combined Noise Level:	49.1	48.7	61.2
R2	Roof-Top Air Conditioning Unit	46.6	45.5	47.6
	Shopping Cart Corral	26.9	24.3	37.4
	Drive-Through Speakerphone	23.8	23.9	28.2
	Gas Station Activity	20.5	19.2	34.7
	Parking Lot Vehicle Movements	38.7	39.3	58.1
	Truck Unloading/Docking Activity	50.6	50.6	63.4
	Car Wash Tunnel & Vacuum Activity	26.0	24.7	30.1
	Combined Noise Level:	52.3	52.0	64.6
R3	Roof-Top Air Conditioning Unit	36.3	35.2	37.3
	Shopping Cart Corral	15.5	12.9	26.0
	Drive-Through Speakerphone	10.6	10.7	15.0
	Gas Station Activity	5.5	4.2	19.7
	Parking Lot Vehicle Movements	39.5	40.1	58.9
	Truck Unloading/Docking Activity	51.4	51.4	64.2
	Car Wash Tunnel & Vacuum Activity	26.6	25.2	30.6
	Combined Noise Level:	51.8	51.8	65.3
R4.1 to R4.4 (Backyard & 1st Floor)	Roof-Top Air Conditioning Unit	35.5	34.4	36.5
	Shopping Cart Corral	31.3	28.7	41.8
	Drive-Through Speakerphone	23.3	23.4	27.7
	Gas Station Activity	15.7	14.4	29.9
	Parking Lot Vehicle Movements	39.5	40.1	58.9
	Truck Unloading/Docking Activity	41.8	41.8	54.6
	Car Wash Tunnel & Vacuum Activity	See Table 9-3 for Focused Car Wash Levels		
	Combined Noise Level:	44.7	44.6	60.4
R4.1 to R4.4 (2nd Floor)	Roof-Top Air Conditioning Unit	40.4	39.3	41.4
	Shopping Cart Corral	36.9	34.3	47.4
	Drive-Through Speakerphone	28.8	28.9	33.2
	Gas Station Activity	21.2	19.9	35.4
	Parking Lot Vehicle Movements	45.1	45.7	64.5
	Truck Unloading/Docking Activity	47.2	47.2	60.0
	Car Wash Tunnel & Vacuum Activity	See Table 9-3 for Focused Car Wash Levels		
	Combined Noise Level:	50.1	50.1	65.9
R5	Roof-Top Air Conditioning Unit	26.5	25.4	27.5
	Shopping Cart Corral	22.0	19.4	32.5
	Drive-Through Speakerphone	18.6	18.7	23.0

Receiver Location ¹	Noise Source ²	Project Operational Noise Levels (dBA) ³		
		L _{eq} (E. Avg.)	L ₂₅ (15 mins)	L _{max} (Anytime)
	Gas Station Activity	12.4	11.1	26.6
	Parking Lot Vehicle Movements	23.5	24.1	42.9
	Truck Unloading/Docking Activity	32.1	32.1	44.9
	Car Wash Tunnel & Vacuum Activity	30.7	29.5	34.9
	Combined Noise Level:	35.7	35.2	47.5
R6	Roof-Top Air Conditioning Unit	39.8	38.7	40.8
	Shopping Cart Corral	26.6	24.0	37.1
	Drive-Through Speakerphone	34.5	34.6	38.9
	Gas Station Activity	32.0	30.7	46.2
	Parking Lot Vehicle Movements	34.6	35.2	54.0
	Truck Unloading/Docking Activity	25.2	25.2	38.0
	Car Wash Tunnel & Vacuum Activity	42.2	40.9	46.3
Combined Noise Level:	45.3	44.4	55.6	

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

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

³ Operational noise level calculations are provided in Appendix 9.1.

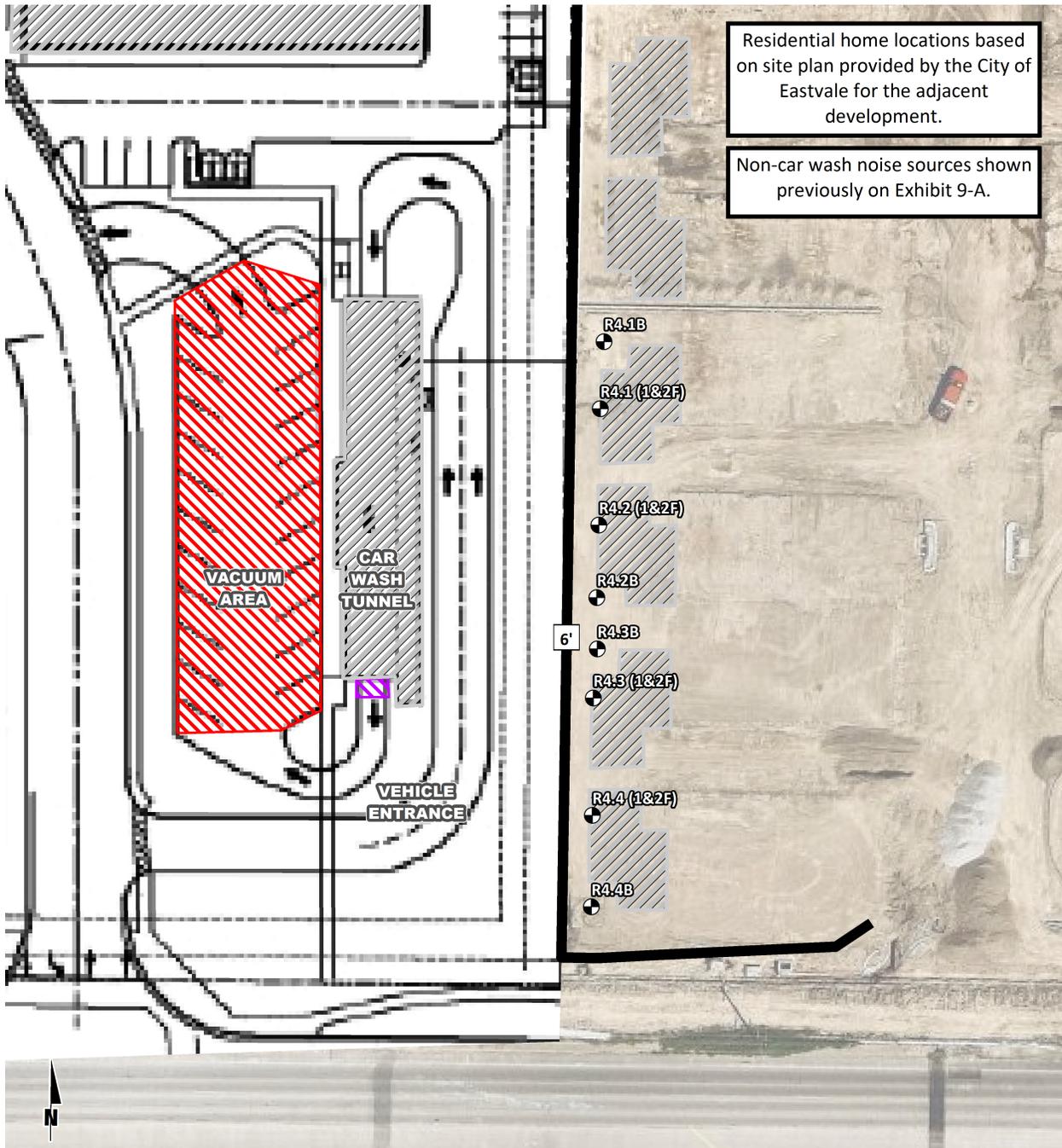
9.2.3 FOCUSED CAR WASH OPERATIONAL NOISE LEVELS

This analysis includes the attenuation provided by the Project's Design Features. The Project Design Features include locating the vacuum activities on the opposite side of the car wash tunnel building from the residential homes east of the Project site and extending the southern tunnel building façade at the tunnel exit. By using the Project car wash tunnel building as a noise barrier, the receiver locations east of the Project site benefit from additional barrier attenuation. Exhibits 9-B to 9-D show the Project Design Features and the attenuation provided by the tunnel building as visualized using the noise level contour boundaries calculated in the CadnaA noise prediction model.

Exhibit 9-B shows the focused receiver locations at the backyards, first, and second-floor building facades of the residential homes represented by receiver locations R4.1 to R4.4, adjacent to the Project's car wash use. Table 9-3 shows the combined Project operational noise levels at each receiver location, R4.1 to R4.4, based on the non-car wash operational noise levels previously shown on Table 9-2 and the car wash tunnel exit and vacuum activity noise levels calculated using the CadnaA noise prediction model. Table 9-3 shows that the total Project-only operational noise levels at receiver locations R4.1 to R4.4 adjacent to the car wash use will range from 46.0 to 58.2 dBA L_{eq}.

Exhibit 9-C shows the operational noise level contour boundaries due to the unmitigated car wash activities, and Exhibit 9-D shows a cross-section view of the car wash operational noise level contours at the tunnel exit.

EXHIBIT 9-B: FOCUSED CAR WASH OPERATIONAL NOISE SOURCE AND RECEIVER LOCATIONS



Residential home locations based on site plan provided by the City of Eastvale for the adjacent development.

Non-car wash noise sources shown previously on Exhibit 9-A.

LEGEND:

- 6' Barrier Height (in feet)
- Existing Barrier
- Focused Analysis Receiver Locations
- "B" = Backyard Receiver Location
- "(1&2F)" = First and Second-Floor Building Facade Receiver Location
- Approximate Building Locations
- Vacuum Activity
- Car Wash Tunnel Exit

TABLE 9-3: FOCUSED CAR WASH ANALYSIS OPERATIONAL NOISE LEVELS

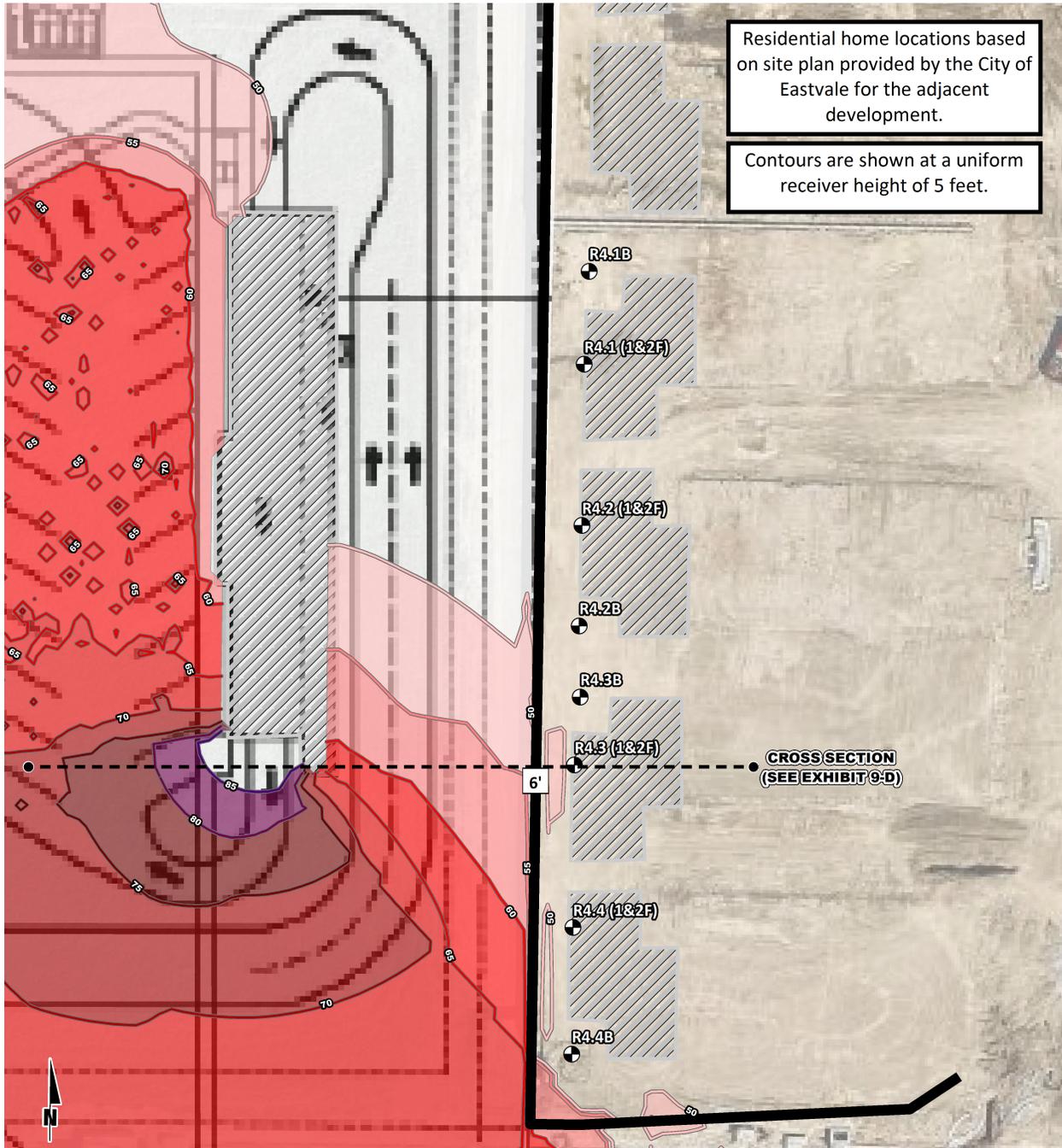
Receiver ID ¹	Location	Noise Source ²	Project Operational Noise Levels (dBA) ³		
			L _{eq} (E. Avg.)	L ₂₅ (15 mins)	L _{max} (Anytime)
R4.1	Backyard	Combined Non-Car Wash Sources	44.7	44.6	60.4
		Car Wash Tunnel & Vacuum Activity	40.3	38.4	43.8
		Combined Noise Level:	46.0	45.6	60.5
	1st Floor	Combined Non-Car Wash Sources	44.7	44.6	60.4
		Car Wash Tunnel & Vacuum Activity	41.4	39.6	45.1
		Combined Noise Level:	46.3	45.8	60.5
	2nd Floor	Combined Non-Car Wash Sources	50.1	50.1	65.9
		Car Wash Tunnel & Vacuum Activity	43.9	42.3	47.7
		Combined Noise Level:	51.0	50.7	66.0
R4.2	Backyard	Combined Non-Car Wash Sources	44.7	44.6	60.4
		Car Wash Tunnel & Vacuum Activity	45.8	43.0	48.5
		Combined Noise Level:	48.3	46.9	60.6
	1st Floor	Combined Non-Car Wash Sources	44.7	44.6	60.4
		Car Wash Tunnel & Vacuum Activity	43.3	41.9	47.4
		Combined Noise Level:	47.0	46.5	60.6
	2nd Floor	Combined Non-Car Wash Sources	50.1	50.1	65.9
		Car Wash Tunnel & Vacuum Activity	46.3	45.1	50.6
		Combined Noise Level:	51.6	51.3	66.0
R4.3	Backyard	Combined Non-Car Wash Sources	44.7	44.6	60.4
		Car Wash Tunnel & Vacuum Activity	46.6	43.6	49.0
		Combined Noise Level:	48.7	47.2	60.7
	1st Floor	Combined Non-Car Wash Sources	44.7	44.6	60.4
		Car Wash Tunnel & Vacuum Activity	48.6	47.1	52.6
		Combined Noise Level:	50.1	49.1	61.0
	2nd Floor	Combined Non-Car Wash Sources	50.1	50.1	65.9
		Car Wash Tunnel & Vacuum Activity	52.8	52.9	58.4
		Combined Noise Level:	54.7	54.7	66.6
R4.4	Backyard	Combined Non-Car Wash Sources	44.7	44.6	60.4
		Car Wash Tunnel & Vacuum Activity	48.1	47.0	52.4
		Combined Noise Level:	49.7	49.0	61.0
	1st Floor	Combined Non-Car Wash Sources	44.7	44.6	60.4
		Car Wash Tunnel & Vacuum Activity	47.5	47.0	52.4
		Combined Noise Level:	49.3	49.0	61.0
	2nd Floor	Combined Non-Car Wash Sources	50.1	50.1	65.9
		Car Wash Tunnel & Vacuum Activity	57.5	57.8	63.2
		Combined Noise Level:	58.2	58.5	67.8

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

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

³ Operational noise level calculations are provided in Appendix 9.1.

EXHIBIT 9-C: FOCUSED CAR WASH OPERATIONAL NOISE LEVEL CONTOURS



LEGEND:

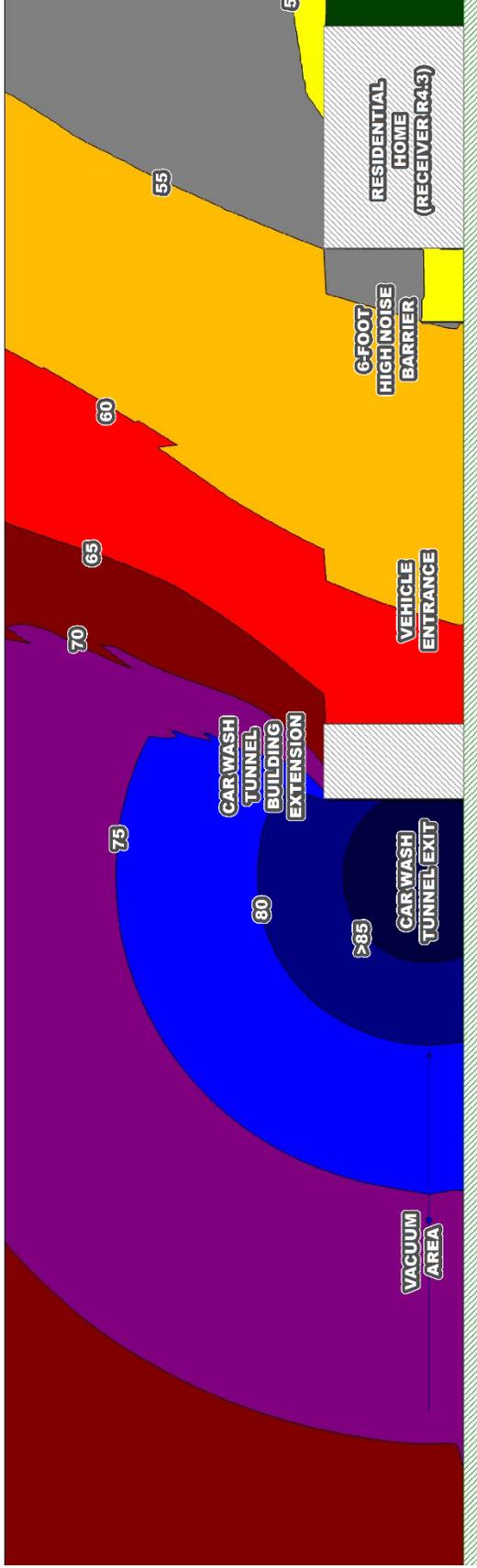
- 6' Barrier Height (in feet)
- Existing Barrier
- Focused Analysis Receiver Locations
- Approximate Building Locations

Operational Noise Level Contours (dBA Leq)

- 50
- 60
- 70
- 80
- 55
- 65
- 75
- 85

"B" = Backyard Receiver Location
 "(1&2F)" = First and Second-Floor Building Facade Receiver Location

EXHIBIT 9-D: FOCUSED CAR WASH OPERATIONAL NOISE LEVEL CONTOURS CROSS-SECTION



LEGEND:

- 80 Operational Noise Level Contour (dBA Leq)
See Exhibit 9-C for the cross-section location.

9.3 OPERATIONAL NOISE LEVEL COMPLIANCE

To demonstrate compliance with local noise regulations, the Project-only operational noise levels are evaluated against exterior noise level thresholds based on the City of Eastvale and City of Ontario exterior noise level standards. Table 9-3 shows the operational noise levels associated with The Merge Project will exceed the exterior noise level standards at receiver locations R3, R4.1, R4.2, R4.3, and R4.4 during the nighttime hours, and therefore, the Project-related unmitigated operational noise levels are considered *potentially significant* impacts.

TABLE 9-4: UNMITIGATED OPERATIONAL NOISE LEVEL COMPLIANCE

Receiver ID ¹	Location	City	Noise Level at Receiver Locations (dBA) ²			Threshold Exceeded? ³	
			L _{eq} (E. Avg.)	L ₂₅ (15 mins)	L _{max} (Anytime)	Daytime	Nighttime
Residential Standards		Eastvale	60	-	-	-	-
			50	-	-	-	-
		Ontario	65	65	85	-	-
			60	60	80	-	-
R1	Backyard	Ontario	49.1	48.7	61.2	No	No
R2	Backyard		52.3	52.0	64.6	No	No
R3	Backyard	Eastvale	51.8	51.8	65.3	No	Yes
R4.1	Backyard		46.0	45.6	60.5	No	No
	1st Floor		46.3	45.8	60.5	No	No
	2nd Floor		51.0	50.7	66.0	No	Yes
R4.2	Backyard		48.3	46.9	60.6	No	No
	1st Floor		47.0	46.5	60.6	No	No
	2nd Floor		51.6	51.3	66.0	No	Yes
R4.3	Backyard		48.7	47.2	60.7	No	No
	1st Floor		50.1	49.1	61.0	No	Yes
	2nd Floor		54.7	54.7	66.6	No	Yes
R4.4	Backyard		49.7	49.0	61.0	No	No
	1st Floor		49.3	49.0	61.0	No	No
	2nd Floor	58.2	58.5	67.8	No	Yes	
R5	Backyard	35.7	35.2	47.5	No	No	
R6	1st Floor	45.3	44.4	55.6	No	No	

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

² Estimated Project operational noise levels as shown on Tables 9-2 and 9-3.

³ Do the estimated Project operational noise levels meet the operational noise level standards (Table 3-1)? The ambient noise level standards in the City of Ontario are adjusted per the Municipal Code to reflect the lowest measured ambient noise level during the nighttime hours.

"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

9.4 OPERATIONAL NOISE LEVEL MITIGATION

To reduce the *potentially significant* Project operational noise levels at the nearby receiver locations, minimum 10-foot high screen walls (noise barriers) are required at the eastern Project warehouse building loading docks (Buildings 6, 7, and 8), as previously shown on Exhibit 9-A. In addition, no nighttime car wash activities shall be permitted. Table 9-5 shows the mitigated Project operational noise levels range from 34.1 to 52.3 dBA L_{eq} .

TABLE 9-5: MITIGATED PROJECT OPERATIONAL NOISE LEVELS

Receiver Location ¹	Noise Source ²	Project Operational Noise Levels (dBA) ³		
		L_{eq} (E. Avg.)	L_{25} (15 mins)	L_{max} (Anytime)
R1	Roof-Top Air Conditioning Unit	45.2	44.1	46.2
	Shopping Cart Corral	27.3	24.7	37.8
	Drive-Through Speakerphone	26.7	26.8	31.1
	Gas Station Activity	26.5	25.2	40.7
	Parking Lot Vehicle Movements	37.5	38.1	56.9
	Truck Unloading/Docking Activity	46.1	46.1	58.9
	Car Wash Tunnel & Vacuum Activity	_ ⁴	_ ⁴	_ ⁴
	Combined Noise Level:	49.1	48.7	61.2
R2	Roof-Top Air Conditioning Unit	46.6	45.5	47.6
	Shopping Cart Corral	26.9	24.3	37.4
	Drive-Through Speakerphone	23.8	23.9	28.2
	Gas Station Activity	20.5	19.2	34.7
	Parking Lot Vehicle Movements	38.7	39.3	58.1
	Truck Unloading/Docking Activity	50.6	50.6	63.4
	Car Wash Tunnel & Vacuum Activity	_ ⁴	_ ⁴	_ ⁴
	Combined Noise Level:	52.3	52.0	64.6
R3	Roof-Top Air Conditioning Unit	36.3	35.2	37.3
	Shopping Cart Corral	15.5	12.9	26.0
	Drive-Through Speakerphone	10.6	10.7	15.0
	Gas Station Activity	5.5	4.2	19.7
	Parking Lot Vehicle Movements	39.5	40.1	58.9
	Truck Unloading/Docking Activity	49.3	49.3	62.1
	Car Wash Tunnel & Vacuum Activity	_ ⁴	_ ⁴	_ ⁴
	Combined Noise Level:	49.9	49.9	63.8
R4 Backyard & 1st Floor	Roof-Top Air Conditioning Unit	35.5	34.4	36.5
	Shopping Cart Corral	31.3	28.7	41.8
	Drive-Through Speakerphone	23.3	23.4	27.7
	Gas Station Activity	15.7	14.4	29.9
	Parking Lot Vehicle Movements	39.5	40.1	58.9
	Truck Unloading/Docking Activity	40.3	40.3	53.1
	Car Wash Tunnel & Vacuum Activity	_ ⁴	_ ⁴	_ ⁴
	Combined Noise Level:	43.9	43.9	60.0
R4 2nd Floor	Roof-Top Air Conditioning Unit	40.4	39.3	41.4
	Shopping Cart Corral	36.9	34.3	47.4
	Drive-Through Speakerphone	28.8	28.9	33.2

Receiver Location ¹	Noise Source ²	Project Operational Noise Levels (dBA) ³		
		L _{eq} (E. Avg.)	L ₂₅ (15 mins)	L _{max} (Anytime)
	Gas Station Activity	21.2	19.9	35.4
	Parking Lot Vehicle Movements	45.1	45.7	64.5
	Truck Unloading/Docking Activity	40.7	40.7	53.5
	Car Wash Tunnel & Vacuum Activity	_ ⁴	_ ⁴	_ ⁴
	Combined Noise Level:	47.8	47.9	64.9
R5	Roof-Top Air Conditioning Unit	26.5	25.4	27.5
	Shopping Cart Corral	22.0	19.4	32.5
	Drive-Through Speakerphone	18.6	18.7	23.0
	Gas Station Activity	12.4	11.1	26.6
	Parking Lot Vehicle Movements	23.5	24.1	42.9
	Truck Unloading/Docking Activity	32.1	32.1	44.9
	Car Wash Tunnel & Vacuum Activity	_ ⁴	_ ⁴	_ ⁴
Combined Noise Level:	34.1	33.8	47.3	
R6	Roof-Top Air Conditioning Unit	39.8	38.7	40.8
	Shopping Cart Corral	26.6	24.0	37.1
	Drive-Through Speakerphone	34.5	34.6	38.9
	Gas Station Activity	32.0	30.7	46.2
	Parking Lot Vehicle Movements	34.6	35.2	54.0
	Truck Unloading/Docking Activity	25.2	25.2	38.0
	Car Wash Tunnel & Vacuum Activity	_ ⁴	_ ⁴	_ ⁴
Combined Noise Level:	42.5	41.9	55.1	

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

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

³ Operational noise level calculations are provided in Appendix 9.1.

⁴ No car wash activity shall be permitted during the nighttime hours as an operational noise mitigation measure.

Table 9-6 shows the mitigated operational noise levels associated with The Merge Project will satisfy the exterior noise level standards at all nearby sensitive receiver locations with the mitigation measures outlined in the Executive Summary. Therefore, the mitigated Project operational noise impacts are considered *less than significant* impacts at the nearby sensitive uses.

TABLE 9-6: MITIGATED OPERATIONAL NOISE LEVEL COMPLIANCE

Receiver ID ¹	Location	City	Noise Level at Receiver Locations (dBA) ²			Threshold Exceeded? ³	
			L _{eq} (E. Avg.)	L ₂₅ (15 mins)	L _{max} (Anytime)	Daytime	Nighttime
Residential Standards		Eastvale	60	-	-	-	-
			50	-	-	-	-
		Ontario	65	65	85	-	-
			60	60	80	-	-
R1	Backyard	Ontario	49.1	48.7	61.2	No	No
R2	Backyard		52.3	52.0	64.6	No	No
R3	Backyard	Eastvale	49.9	49.9	63.8	No	No
R4 (Worst-Case)	Backyard & 1st Floor		43.9	43.9	60.0	No	No
	2nd Floor		47.8	47.9	64.9	No	No
R5	Backyard		34.1	33.8	47.3	No	No
R6	1st Floor		42.5	41.9	55.1	No	No

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

² Mitigated Project operational noise levels as shown on Table 9-5.

³ Do the estimated Project operational noise levels meet the operational noise level standards (Table 3-1)? The ambient noise level standards in the City of Ontario are adjusted per the Municipal Code to reflect the lowest measured ambient noise level during the nighttime hours. "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

9.5 PROJECT OPERATIONAL NOISE CONTRIBUTION

To describe the Project operational noise level contributions, the Project operational noise levels were combined with the existing ambient noise levels measurements for the off-site 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. (6) Instead, they must be logarithmically added using the following base equation:

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

Where "SPL1," "SPL2," etc. are equal to the sound pressure levels being combined, or in this case, the Project-operational and existing ambient noise levels. The difference between the combined Project and ambient noise levels describe the Project noise level contributions. Noise levels that would be experienced at receiver locations when unmitigated Project-source noise is added to the ambient daytime and nighttime conditions are presented on Tables 9-7 and 9-8, respectively.

As indicated on Tables 9-7 and 9-8, the Project will contribute an unmitigated operational noise level increase during the daytime hours of up to 1.3 dBA L_{eq} and during the nighttime hours of up to 2.2 dBA L_{eq}. Based on the without Project (ambient) noise levels, the Project operational noise level increases will satisfy the significance criteria discussed in Section 4, and therefore, the increases at the sensitive receiver locations will be *less than significant*. On this basis, Project operational stationary-source noise would not result in a substantial temporary/periodic, or

permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project.

TABLE 9-6: DAYTIME OPERATIONAL NOISE LEVEL CONTRIBUTIONS

Receiver ID ¹	Location	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 Exceeded? ⁷
R1	Backyard	49.1	L2	62.9	63.1	0.2	No
R2	Backyard	52.3	L2	62.9	63.3	0.4	No
R3	Backyard	51.8	L2	62.9	63.2	0.3	No
R4.1	Backyard	46.0	L2	62.9	63.0	0.1	No
	1st Floor	46.3	L2	62.9	63.0	0.1	No
	2nd Floor	51.0	L2	62.9	63.2	0.3	No
R4.2	Backyard	48.3	L2	62.9	63.0	0.1	No
	1st Floor	47.0	L2	62.9	63.0	0.1	No
	2nd Floor	51.6	L2	62.9	63.2	0.3	No
R4.3	Backyard	48.7	L2	62.9	63.1	0.2	No
	1st Floor	50.1	L2	62.9	63.1	0.2	No
	2nd Floor	54.7	L2	62.9	63.5	0.6	No
R4.4	Backyard	49.7	L2	62.9	63.1	0.2	No
	1st Floor	49.3	L2	62.9	63.1	0.2	No
	2nd Floor	58.2	L2	62.9	64.2	1.3	No
R5	Backyard	35.7	L5	65.9	65.9	0.0	No
R6	1st Floor	45.3	L3	70.3	70.3	0.0	No

¹ See Exhibits 9-A and 9-B for the sensitive receiver locations.
² Unmitigated Project operational noise levels as shown on Table 9-4.
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.

TABLE 9-7: NIGHTTIME OPERATIONAL NOISE LEVEL CONTRIBUTIONS

Receiver ID ¹	Location	Unmitigated Project Noise Levels (dBA Leq) ²	Measurement Location ³	Reference Ambient Noise Levels (dBA Leq) ⁴	Combined Project and Ambient (dBA Leq) ⁵	Project Contribution (dBA Leq) ⁶	Threshold Exceeded? ⁷
R1	Backyard	49.1	L2	60.1	60.4	0.3	No
R2	Backyard	52.3	L2	60.1	60.8	0.7	No
R3	Backyard	51.8	L2	60.1	60.7	0.6	No
R4.1	Backyard	46.0	L2	60.1	60.3	0.2	No
	1st Floor	46.3	L2	60.1	60.3	0.2	No
	2nd Floor	51.0	L2	60.1	60.6	0.5	No
R4.2	Backyard	48.3	L2	60.1	60.4	0.3	No
	1st Floor	47.0	L2	60.1	60.3	0.2	No
	2nd Floor	51.6	L2	60.1	60.7	0.6	No
R4.3	Backyard	48.7	L2	60.1	60.4	0.3	No
	1st Floor	50.1	L2	60.1	60.5	0.4	No
	2nd Floor	54.7	L2	60.1	61.2	1.1	No
R4.4	Backyard	49.7	L2	60.1	60.5	0.4	No
	1st Floor	49.3	L2	60.1	60.4	0.3	No
	2nd Floor	58.2	L2	60.1	62.3	2.2	No
R5	Backyard	35.7	L5	60.9	60.9	0.0	No
R6	1st Floor	45.3	L3	67.1	67.1	0.0	No

¹ See Exhibits 9-A and 9-B for the sensitive receiver locations.

² Unmitigated Project operational noise levels as shown on Table 9-4.

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

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

⁵ Represents the combined ambient conditions plus the Project activities.

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

⁷ Significance Criteria as defined in Section 4.

9.5.1 PROJECT OPERATIONAL NOISE LEVEL INCREASE PERCEPTION

The highest Project operational noise level increase will approach 1.3 dBA Leq during the daytime hours at the second-floor building façade of receiver location R4.4. Noise level increases of roughly 1 dBA cannot typically be perceived except in carefully controlled laboratory experiments. This second-floor receiver location may have a direct line-of-sight to the car wash exit tunnel, and as a result, experiences higher Project-related operational noise level contributions when compared with the existing ambient noise environment. Typical residential building construction materials would reduce these exterior noise levels in interior spaces under “windows-closed” conditions. However, should windows be open during Project operation in any of the residential homes represented by receiver locations R4.1 to R4.4, the noise-sensitive residential receivers will hear car wash-related operational noise levels during the daytime hours.

While the unmitigated Project operational noise level increases are shown to approach 2.2 dBA L_{eq} during the nighttime hours at receiver location R4.4, which result in a *less than significant* impact, this analysis does not include the restricted operating hours which would limit the car wash activities to the daytime hours of 7:00 a.m. to 10:00 p.m. As such, actual Project-related operational noise level increases experienced during the nighttime hours would be reduced without the contributions provided by the car wash tunnel exit and vacuum activities.

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10 CONSTRUCTION IMPACTS

This section analyzes potential impacts resulting from the short-term construction activities associated with the development of the Project. Exhibit 10-A shows the construction activity boundaries in relation to the nearby sensitive receiver locations.

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:

- 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 in excess of 80 dBA when measured at 50 feet. Hard site conditions are used in the construction noise analysis which result in noise levels that attenuate (or decrease) at a rate of 6 dBA for each doubling of distance from a point source (i.e. construction equipment). For example, a noise level of 80 dBA measured at 50 feet from the noise source to the receiver would be reduced to 74 dBA at 100 feet from the source to the receiver and would be further reduced to 68 dBA at 200 feet from the source to the receiver. The construction stages used in this analysis are consistent with the data used to support the construction emissions in *The Merge Air Quality Impact Analysis* prepared by Urban Crossroads, Inc. (32)

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, all construction noise level measurements presented on Table 10-1 have been adjusted to describe a common reference distance of 50 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
12	Concrete Mixer Truck Movements ⁴	50'	71.2	71.2
13	Concrete Paver Activities ⁴	30'	70.0	65.6
14	Concrete Mixer Pour & Paving Activities ⁴	30'	70.3	65.9
15	Concrete Mixer Backup Alarms & Air Brakes ⁴	50'	71.6	71.6
16	Concrete Mixer Pour Activities ⁴	50'	67.7	67.7

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

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).

EXHIBIT 10-A: CONSTRUCTION ACTIVITY AND RECEIVER LOCATIONS



LEGEND:

- Receiver Locations
- Construction Activity
- 6' Barrier Height (in feet)
- Distance from receiver to construction activity (in feet)
- Existing Barrier

10.3 CONSTRUCTION NOISE ANALYSIS

Tables 10-2 to 10-6 show the Project construction stages and the reference construction noise levels used for each stage. Table 10-7 provides a summary of the noise levels from each stage of construction at each of the sensitive receiver locations. Based on the reference construction noise levels, the Project-related construction noise levels when the highest reference noise level is operating at the edge of primary construction activity nearest each sensitive receiver location will range from 47.0 to 72.3 dBA L_{eq} at the sensitive receiver locations, as shown on Table 10-7, and include barrier attenuation provided by existing noise barriers in the Project study area.

TABLE 10-2: SITE PREPARATION ACTIVITY 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
Highest Reference Noise Level at 50 Feet (dBA L_{eq}):	64.2

Receiver Location	Distance to Construction Activity (Feet) ²	Distance Attenuation (dBA L_{eq}) ³	Calculated Noise Barrier Attenuation (dBA L_{eq}) ⁴	Construction Noise Level (dBA L_{eq})
R1	154'	-9.8	0.0	54.4
R2	134'	-8.6	0.0	55.6
R3	30'	4.4	-5.6	63.0
R4	30'	4.4	-5.6	63.0
R5	559'	-21.0	-5.5	37.7
R6	242'	-13.7	0.0	50.5

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

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 Calculated barrier attenuation from existing barriers in the Project study area (Appendix 9.1).

TABLE 10-3: GRADING ACTIVITY 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 L _{eq}):	73.5

Receiver Location	Distance to Construction Activity (Feet) ²	Distance Attenuation (dBA L _{eq}) ³	Calculated Noise Barrier Attenuation (dBA L _{eq}) ⁴	Construction Noise Level (dBA L _{eq})
R1	154'	-9.8	0.0	63.7
R2	134'	-8.6	0.0	64.9
R3	30'	4.4	-5.6	72.3
R4	30'	4.4	-5.6	72.3
R5	559'	-21.0	-5.5	47.0
R6	242'	-13.7	0.0	59.8

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

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 Calculated barrier attenuation from existing barriers in the Project study area (Appendix 9.1).

TABLE 10-4: BUILDING CONSTRUCTION ACTIVITY 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 L _{eq}):	68.2

Receiver Location	Distance to Construction Activity (Feet) ²	Distance Attenuation (dBA L _{eq}) ³	Calculated Noise Barrier Attenuation (dBA L _{eq}) ⁴	Construction Noise Level (dBA L _{eq})
R1	154'	-9.8	0.0	58.4
R2	134'	-8.6	0.0	59.6
R3	30'	4.4	-5.6	67.0
R4	30'	4.4	-5.6	67.0
R5	559'	-21.0	-5.5	41.7
R6	242'	-13.7	0.0	54.5

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

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 Calculated barrier attenuation from existing barriers in the Project study area (Appendix 9.1).

TABLE 10-5: PAVING ACTIVITY 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	Calculated Noise Barrier Attenuation (dBA L _{eq}) ⁴	Construction Noise Level (dBA L _{eq})
R1	154'	-9.8	0.0	61.8
R2	134'	-8.6	0.0	63.0
R3	30'	4.4	-5.6	70.4
R4	30'	4.4	-5.6	70.4
R5	559'	-21.0	-5.5	45.1
R6	242'	-13.7	0.0	57.9

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

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 Calculated barrier attenuation from existing barriers in the Project study area (Appendix 9.1).

TABLE 10-6: ARCHITECTURAL COATING ACTIVITY 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	Calculated Noise Barrier Attenuation (dBA L _{eq}) ⁴	Construction Noise Level (dBA L _{eq})
R1	154'	-9.8	0.0	57.7
R2	134'	-8.6	0.0	58.9
R3	30'	4.4	-5.6	66.3
R4	30'	4.4	-5.6	66.3
R5	559'	-21.0	-5.5	41.0
R6	242'	-13.7	0.0	53.8

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

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 Calculated barrier attenuation from existing barriers in the Project study area (Appendix 9.1).

TABLE 10-7: UNMITIGATED CONSTRUCTION ACTIVITY NOISE LEVEL SUMMARY

Receiver Location ¹	Unmitigated Construction Noise Levels (dBA L _{eq})					
	Site Preparation	Grading	Building Construction	Paving	Architectural Coating	Highest Construction Noise Levels ²
R1	54.4	63.7	58.4	61.8	57.7	63.7
R2	55.6	64.9	59.6	63.0	58.9	64.9
R3	63.0	72.3	67.0	70.4	66.3	72.3
R4	63.0	72.3	67.0	70.4	66.3	72.3
R5	37.7	47.0	41.7	45.1	41.0	47.0
R6	50.5	59.8	54.5	57.9	53.8	59.8

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

² Estimated construction noise levels during peak operating conditions.

10.4 CONSTRUCTION NOISE THRESHOLDS OF SIGNIFICANCE

Table 10-8 shows the highest construction noise levels at the potentially impacted receiver locations. As shown on Table 10-8, the construction noise levels are expected to approach 72.3 dBA L_{eq} and will satisfy the NIOSH 85 dBA L_{eq} significance threshold during temporary Project construction activities. Therefore, the unmitigated noise impacts during Project construction are considered *less than significant*.

TABLE 10-8: UNMITIGATED CONSTRUCTION ACTIVITY NOISE LEVEL COMPLIANCE

Receiver Location ¹	Unmitigated Construction Noise Levels (dBA L_{eq})		
	Highest Construction Noise Level ²	Threshold ³	Threshold Exceeded? ⁴
R1	63.7	85	No
R2	64.9	85	No
R3	72.3	85	No
R4	72.3	85	No
R5	47.0	85	No
R6	59.8	85	No

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

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?

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 0.1 to 9.9 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*.

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	63.7	L2	62.9	66.3	3.4	No
R2	64.9	L2	62.9	67.0	4.1	No
R3	72.3	L2	62.9	72.8	9.9	No
R4	72.3	L2	62.9	72.8	9.9	No
R5	47.0	L5	65.9	66.0	0.1	No
R6	59.8	L3	70.3	70.7	0.4	No

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

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.

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. It is not expected that heavy equipment such as large bulldozers would operate close enough to any residences to cause a vibration impact.
- **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.

Based on the reference vibration levels provided by the FTA, a large bulldozer represents the peak source of vibration with a reference velocity of 0.089 in/sec PPV at 25 feet. At distances ranging from 30 to 559 feet from Project construction activities, construction vibration velocity levels are expected to approach 0.068 in/sec PPV, as shown on Table 10-10. Based on the City of Eastvale 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. (5) The peak Project-construction vibration levels shown on Table 10-10, approaching 0.068 in/sec PPV, 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 10-10: UNMITIGATED CONSTRUCTION EQUIPMENT VIBRATION LEVELS

Receiver Location ¹	Distance To Const. Activity (Feet)	Receiver PPV Levels (in/sec) ²					Threshold Exceeded? ³
		Small Bulldozer	Jack-hammer	Loaded Trucks	Large Bulldozer	Highest Levels (PPV)	
R1	154'	0.0002	0.0023	0.0050	0.0058	0.0058	No
R2	134'	0.0002	0.0028	0.0061	0.0072	0.0072	No
R3	30'	0.0023	0.0266	0.0578	0.0677	0.0677	No
R4	30'	0.0023	0.0266	0.0578	0.0677	0.0677	No
R5	559'	0.0000	0.0003	0.0007	0.0008	0.0008	No
R6	242'	0.0001	0.0012	0.0025	0.0030	0.0030	No

¹ Receiver locations are shown on Exhibit 10-A.

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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12 CERTIFICATION

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

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EDUCATION

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

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

PROFESSIONAL REGISTRATIONS

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

PROFESSIONAL AFFILIATIONS

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

PROFESSIONAL CERTIFICATIONS

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

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APPENDIX 3.1:
CITY OF EASTVALE MUNICIPAL CODE

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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-I (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.

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APPENDIX 3.2:
CITY OF ONTARIO MUNICIPAL CODE

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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 Schools, day care centers, churches, libraries, museums, health care institutions; 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.

<i>Allowable Exterior Noise Level (1)</i>		<i>Allowed Equivalent Noise Level, Leq. (2)</i>	
<i>Noise Zone</i>	<i>Type of Land Use</i>	<i>7 a.m. to 10 p.m.</i>	<i>10 p.m. to 7 a.m.</i>
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 Uses	70 dBA	70 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; 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)	
<i>Noise Zone</i>	<i>Type of Land Use</i>	<i>7 a.m. to 10 p.m.</i>	<i>10 p.m. to 7 a.m.</i>
I	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 property within the City. Such noise shall be subject to the provisions of OMC Chapter 1, Title 6;

(l) 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:

(1) 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)

Sec. 5-29.17. Penalty.

(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)

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APPENDIX 5.1:
STUDY AREA PHOTOS

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JN:11180 The Merge



L1_E

33, 58' 43.410000", 117, 35' 35.060000"



L1_N

33, 58' 43.510000", 117, 35' 35.060000"



L1_S

33, 58' 43.430000", 117, 35' 35.110000"



L1_W

33, 58' 43.410000", 117, 35' 35.060000"



L2_E

33, 58' 39.360000", 117, 35' 34.750000"



L2_N

33, 58' 39.250000", 117, 35' 34.860000"

JN:11180 The Merge



L2_S

33, 58' 39.250000", 117, 35' 34.860000"



L2_W

33, 58' 39.390000", 117, 35' 34.750000"



L3_E

33, 58' 35.450000", 117, 35' 35.910000"



L3_N

33, 58' 35.450000", 117, 35' 35.910000"



L3_S

33, 58' 35.450000", 117, 35' 35.910000"



L3_W

33, 58' 35.450000", 117, 35' 35.910000"

JN:11180 The Merge



L4_E

33, 58' 30.760000", 117, 35' 31.480000"



L4_N

33, 58' 30.780000", 117, 35' 31.480000"



L4_S

33, 58' 30.780000", 117, 35' 31.480000"



L5_E

33, 58' 30.650000", 117, 35' 11.740000"



L5_N

33, 58' 29.940000", 117, 35' 10.940000"



L5_W

33, 58' 30.570000", 117, 35' 11.760000"

JN:11180 The Merge



L6_N
33, 58' 33.890000", 117, 35' 3.580000"



L6_S
33, 58' 33.850000", 117, 35' 3.610000"



L6_W
33, 58' 33.880000", 117, 35' 3.610000"

APPENDIX 5.2:
NOISE LEVEL MEASUREMENT WORKSHEETS

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24-Hour Noise Level Measurement Summary

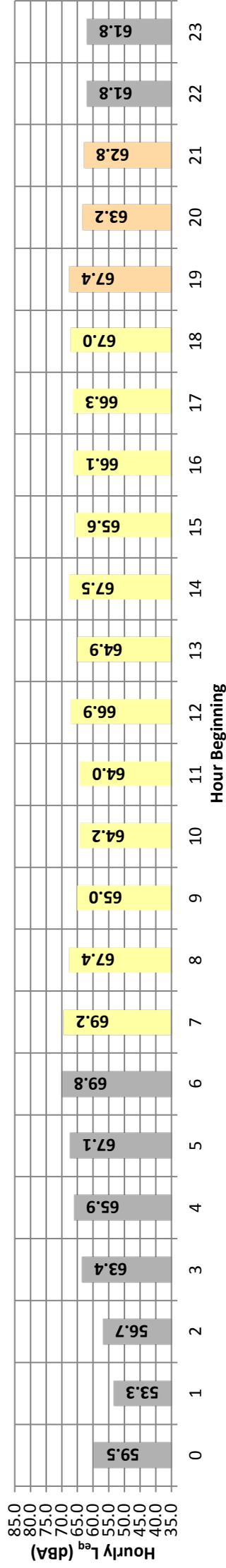
Date: Wednesday, May 16, 2018
Project: The Merge

Location: L1 - Located north of the Project site on Archibald Avenue adjacent to existing residential homes.

Meter: Piccolo I

JN: 11180
Analyst: A. Wolfe

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L _{eq}	L _{max}	L _{min}	Hour Beginning								L _{eq}	Adj.	Adj. L _{eq}		
					L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%				L99%	
Night	0	59.5	83.2	40.1	71.0	67.0	64.0	61.0	54.0	47.0	41.0	40.0	40.0	59.5	10.0	69.5	
	1	53.3	71.5	40.2	65.0	63.0	60.0	57.0	49.0	45.0	42.0	41.0	41.0	53.3	10.0	63.3	
	2	56.7	76.2	41.5	68.0	66.0	63.0	61.0	53.0	47.0	43.0	43.0	42.0	56.7	10.0	66.7	
	3	63.4	91.3	41.5	73.0	70.0	67.0	65.0	57.0	50.0	44.0	43.0	42.0	63.4	10.0	73.4	
	4	65.9	84.8	43.7	77.0	74.0	70.0	69.0	64.0	58.0	48.0	47.0	45.0	65.9	10.0	75.9	
	5	67.1	86.2	44.4	76.0	74.0	72.0	70.0	67.0	63.0	51.0	48.0	46.0	67.1	10.0	77.1	
Day	6	69.8	90.0	48.3	79.0	76.0	73.0	72.0	69.0	67.0	59.0	56.0	52.0	69.8	10.0	79.8	
	7	69.2	88.3	46.6	78.0	76.0	73.0	71.0	68.0	67.0	58.0	54.0	49.0	69.2	0.0	69.2	
	8	67.4	86.5	47.1	76.0	74.0	72.0	70.0	67.0	65.0	56.0	53.0	49.0	67.4	0.0	67.4	
	9	65.0	80.9	43.0	75.0	73.0	70.0	69.0	65.0	61.0	50.0	48.0	45.0	65.0	0.0	65.0	
	10	64.2	83.5	43.6	74.0	72.0	69.0	68.0	63.0	59.0	49.0	47.0	45.0	64.2	0.0	64.2	
	11	64.0	86.0	45.0	74.0	72.0	69.0	67.0	63.0	59.0	50.0	49.0	46.0	64.0	0.0	64.0	
	12	66.9	95.0	44.4	75.0	73.0	70.0	68.0	64.0	59.0	50.0	47.0	45.0	66.9	0.0	66.9	
	13	64.9	84.6	44.0	75.0	73.0	70.0	68.0	64.0	60.0	50.0	48.0	46.0	64.9	0.0	64.9	
	14	67.5	91.2	46.8	78.0	74.0	72.0	70.0	65.0	62.0	53.0	51.0	48.0	67.5	0.0	67.5	
	15	65.6	81.3	48.1	75.0	73.0	71.0	69.0	65.0	62.0	54.0	52.0	50.0	65.6	0.0	65.6	
	16	66.1	81.9	48.5	76.0	74.0	71.0	69.0	66.0	62.0	55.0	53.0	50.0	66.1	0.0	66.1	
	17	66.3	85.4	47.5	76.0	74.0	71.0	69.0	66.0	62.0	54.0	53.0	50.0	66.3	0.0	66.3	
	18	67.0	91.5	47.2	75.0	73.0	70.0	69.0	66.0	62.0	53.0	51.0	48.0	67.0	0.0	67.0	
	Evening	19	67.4	95.8	43.5	75.0	73.0	70.0	68.0	65.0	60.0	51.0	49.0	46.0	67.4	5.0	72.4
		20	63.2	78.2	43.0	71.0	70.0	68.0	67.0	64.0	59.0	48.0	46.0	44.0	63.2	5.0	68.2
		21	62.8	86.4	41.4	71.0	70.0	68.0	67.0	62.0	57.0	46.0	44.0	42.0	62.8	5.0	67.8
	Night	22	61.8	81.3	41.9	72.0	70.0	67.0	66.0	60.0	56.0	45.0	44.0	43.0	61.8	10.0	71.8
		23	61.8	90.2	41.1	69.0	68.0	65.0	63.0	56.0	50.0	43.0	42.0	41.0	61.8	10.0	71.8
Day	Min	64.0	80.9	43.0	74.0	72.0	69.0	67.0	63.0	59.0	49.0	47.0	45.0				
	Max	69.2	95.0	48.5	78.0	76.0	73.0	71.0	68.0	67.0	58.0	54.0	50.0				
Energy Average		66.4	Average:		75.6	73.4	70.7	68.9	65.2	61.7	52.7	50.5	47.6				
Evening	Min	62.8	78.2	41.4	71.0	70.0	68.0	67.0	62.0	57.0	46.0	44.0	42.0				
	Max	67.4	95.8	43.5	75.0	73.0	70.0	68.0	65.0	60.0	51.0	49.0	46.0				
Energy Average		65.0	Average:		72.3	71.0	68.7	67.3	63.7	58.7	48.3	46.3	44.0				
Night	Min	53.3	71.5	40.1	65.0	63.0	60.0	57.0	49.0	45.0	41.0	40.0	40.0				
	Max	69.8	91.3	48.3	79.0	76.0	73.0	72.0	69.0	67.0	59.0	56.0	52.0				
Energy Average		64.5	Average:		72.2	69.8	66.8	64.9	58.8	53.7	46.2	44.9	43.6				
24-Hour L_{eq} (dBA)																	
65.6																	
24-Hour CNEL (dBA)																	
71.5																	



24-Hour Noise Level Measurement Summary

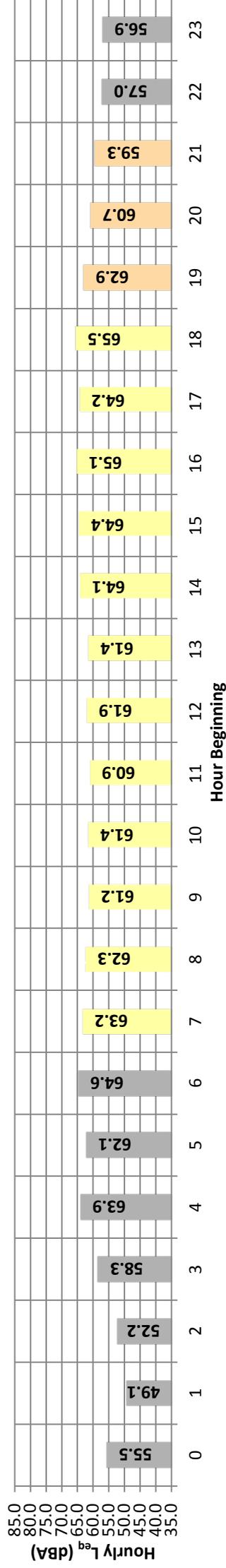
Date: Wednesday, May 16, 2018
Project: The Merge

Location: L2 - Located at the northern Project site boundary near existing residential homes and a trail adjacent to a flood control channel.

Meter: Piccolo I

JN: 11180
Analyst: A. Wolfe

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L _{eq}	L _{max}	L _{min}	Hour Beginning								L _{90%}	L _{95%}	L _{99%}	L _{eq}	Adj.	Adj. L _{eq}
					L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%						
Night	0	55.5	76.7	36.8	67.0	63.0	60.0	58.0	54.0	46.0	41.0	40.0	39.0	39.0	55.5	10.0	65.5	
	1	49.1	67.0	36.5	60.0	58.0	55.0	53.0	46.0	42.0	39.0	39.0	36.0	36.0	49.1	10.0	59.1	
	2	52.2	68.2	38.7	63.0	61.0	59.0	57.0	50.0	43.0	39.0	39.0	39.0	39.0	52.2	10.0	62.2	
	3	58.3	86.1	39.0	68.0	65.0	62.0	60.0	53.0	46.0	41.0	39.0	39.0	39.0	58.3	10.0	68.3	
	4	63.9	87.3	42.5	74.0	70.0	66.0	64.0	60.0	55.0	46.0	45.0	43.0	43.0	63.9	10.0	73.9	
	5	62.1	80.9	43.9	71.0	70.0	67.0	65.0	62.0	59.0	51.0	49.0	47.0	47.0	62.1	10.0	72.1	
Day	6	64.6	87.9	45.9	73.0	72.0	69.0	67.0	63.0	61.0	54.0	51.0	48.0	48.0	64.6	10.0	74.6	
	7	63.2	81.5	45.8	73.0	70.0	67.0	66.0	62.0	60.0	54.0	51.0	47.0	47.0	63.2	0.0	63.2	
	8	62.3	78.1	46.0	71.0	69.0	67.0	65.0	62.0	60.0	54.0	51.0	48.0	48.0	62.3	0.0	62.3	
	9	61.2	78.0	43.1	71.0	70.0	66.0	64.0	60.0	57.0	48.0	46.0	44.0	44.0	61.2	0.0	61.2	
	10	61.4	78.2	43.4	72.0	69.0	67.0	65.0	60.0	57.0	50.0	48.0	45.0	45.0	61.4	0.0	61.4	
	11	60.9	80.9	43.4	71.0	69.0	66.0	64.0	60.0	56.0	49.0	47.0	45.0	45.0	60.9	0.0	60.9	
	12	61.9	81.7	43.9	72.0	70.0	67.0	65.0	61.0	57.0	50.0	48.0	45.0	45.0	61.9	0.0	61.9	
	13	61.4	80.1	42.4	71.0	69.0	66.0	65.0	61.0	57.0	50.0	48.0	45.0	45.0	61.4	0.0	61.4	
	14	64.1	85.1	44.4	73.0	71.0	69.0	67.0	63.0	60.0	53.0	51.0	48.0	48.0	64.1	0.0	64.1	
	15	64.4	85.9	47.2	73.0	71.0	69.0	67.0	64.0	61.0	55.0	54.0	50.0	50.0	64.4	0.0	64.4	
	16	65.1	83.4	48.2	75.0	72.0	70.0	68.0	64.0	61.0	55.0	53.0	50.0	50.0	65.1	0.0	65.1	
	17	64.2	79.6	47.6	73.0	72.0	69.0	67.0	64.0	61.0	54.0	52.0	50.0	50.0	64.2	0.0	64.2	
18	65.5	90.4	46.0	75.0	72.0	69.0	67.0	64.0	61.0	53.0	51.0	48.0	48.0	65.5	0.0	65.5		
Evening	19	62.9	86.8	46.0	71.0	69.0	66.0	65.0	62.0	59.0	50.0	49.0	47.0	47.0	62.9	5.0	67.9	
	20	60.7	77.3	45.3	69.0	67.0	65.0	64.0	61.0	58.0	50.0	48.0	46.0	46.0	60.7	5.0	65.7	
	21	59.3	74.1	43.4	67.0	66.0	64.0	63.0	60.0	56.0	49.0	48.0	45.0	45.0	59.3	5.0	64.3	
Night	22	57.0	77.2	45.6	65.0	64.0	61.0	60.0	57.0	53.0	48.0	48.0	47.0	47.0	57.0	10.0	67.0	
	23	56.9	75.0	39.8	67.0	63.0	61.0	60.0	58.0	52.0	43.0	42.0	41.0	41.0	56.9	10.0	66.9	
Day	Min	60.9	78.0	42.4	71.0	69.0	66.0	64.0	60.0	56.0	48.0	46.0	44.0	44.0	60.9			
	Max	65.5	90.4	48.2	75.0	72.0	70.0	68.0	64.0	61.0	55.0	54.0	50.0	50.0	65.5			
Energy Average		63.3	Average:	Average:	72.5	70.3	67.7	65.8	62.1	59.0	52.1	50.0	47.1	47.1	63.3			
Evening	Min	59.3	74.1	43.4	67.0	66.0	64.0	63.0	60.0	56.0	49.0	48.0	45.0	45.0	59.3			
	Max	62.9	86.8	46.0	71.0	69.0	66.0	65.0	62.0	59.0	50.0	49.0	47.0	47.0	62.9			
Energy Average		61.2	Average:	Average:	69.0	67.3	65.0	64.0	61.0	57.7	49.7	48.3	46.0	46.0	61.2			
Night	Min	49.1	67.0	36.5	60.0	58.0	55.0	53.0	46.0	42.0	39.0	39.0	36.0	36.0	49.1			
	Max	64.6	87.9	45.9	74.0	72.0	69.0	67.0	63.0	61.0	54.0	51.0	48.0	48.0	64.6			
Energy Average		60.1	Average:	Average:	67.6	65.1	62.2	60.4	55.9	50.8	44.7	43.6	42.1	42.1	60.1			
24-Hour L_{eq} (dBA)																		
62.1																		
24-Hour CNEL (dBA)																		
67.3																		



24-Hour Noise Level Measurement Summary

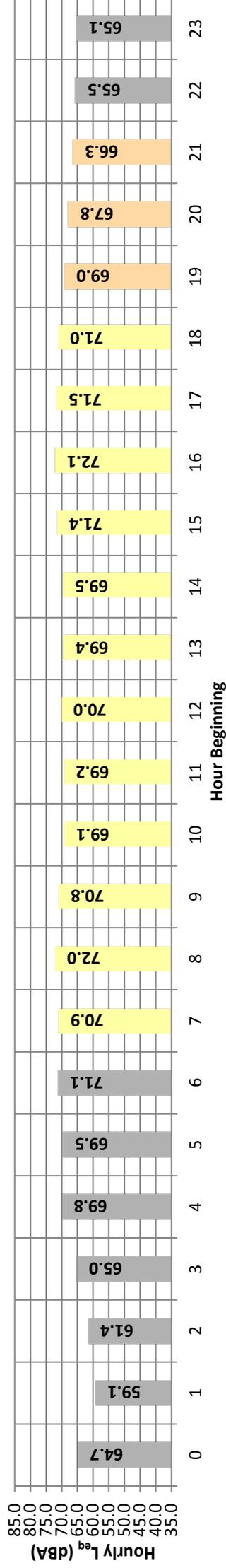
Date: Wednesday, May 16, 2018
Project: The Merge

Location: L3 - Located west of the Project site adjacent to an existing agricultural use on Archibald Avenue.

Meter: Piccolo I

JN: 11180
Analyst: A. Wolfe

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L _{eq}	L _{max}	L _{min}	L1%	L2%	L5%	L8%	Hour Beginning					L _{eq}	Adj.	Adj. L _{eq}	
									L25%	L50%	L90%	L95%	L99%				
Night	0	64.7	90.0	39.4	77.0	73.0	69.0	67.0	59.0	51.0	43.0	42.0	42.0	40.0	64.7	10.0	74.7
	1	59.1	86.0	39.3	71.0	68.0	64.0	61.0	51.0	46.0	42.0	42.0	42.0	41.0	59.1	10.0	69.1
	2	61.4	85.2	41.1	73.0	70.0	67.0	64.0	55.0	49.0	44.0	43.0	43.0	42.0	61.4	10.0	71.4
	3	65.0	86.3	41.5	77.0	73.0	70.0	68.0	60.0	53.0	45.0	44.0	44.0	42.0	65.0	10.0	75.0
	4	69.8	98.3	45.5	80.0	77.0	74.0	71.0	66.0	60.0	51.0	50.0	50.0	48.0	69.8	10.0	79.8
	5	69.5	87.7	48.2	80.0	78.0	75.0	73.0	68.0	65.0	54.0	52.0	52.0	50.0	69.5	10.0	79.5
Day	6	71.1	90.5	49.6	81.0	79.0	76.0	74.0	70.0	67.0	59.0	55.0	55.0	52.0	71.1	10.0	81.1
	7	70.9	92.1	47.0	80.0	78.0	75.0	74.0	70.0	67.0	61.0	56.0	56.0	51.0	70.9	0.0	70.9
	8	72.0	97.0	47.4	82.0	80.0	76.0	74.0	70.0	66.0	58.0	54.0	54.0	50.0	72.0	0.0	72.0
	9	70.8	97.6	43.8	80.0	78.0	75.0	73.0	68.0	64.0	51.0	49.0	49.0	46.0	70.8	0.0	70.8
	10	69.1	86.7	44.8	79.0	77.0	75.0	73.0	68.0	64.0	52.0	49.0	49.0	47.0	69.1	0.0	69.1
	11	69.2	87.4	45.6	80.0	78.0	75.0	73.0	68.0	63.0	51.0	49.0	49.0	47.0	69.2	0.0	69.2
	12	70.0	96.1	47.1	79.0	77.0	74.0	73.0	68.0	63.0	52.0	50.0	50.0	48.0	70.0	0.0	70.0
	13	69.4	88.5	46.1	80.0	78.0	74.0	73.0	68.0	63.0	52.0	50.0	50.0	48.0	69.4	0.0	69.4
	14	69.5	90.0	47.3	79.0	77.0	74.0	73.0	68.0	64.0	56.0	53.0	53.0	49.0	69.5	0.0	69.5
	15	71.4	93.4	48.8	81.0	79.0	76.0	74.0	70.0	66.0	58.0	55.0	55.0	52.0	71.4	0.0	71.4
	16	72.1	97.4	49.7	82.0	79.0	76.0	75.0	70.0	66.0	57.0	54.0	54.0	51.0	72.1	0.0	72.1
	17	71.5	95.8	49.0	80.0	78.0	74.0	74.0	69.0	66.0	57.0	55.0	55.0	53.0	71.5	0.0	71.5
18	71.0	95.3	48.1	81.0	78.0	74.0	74.0	69.0	65.0	54.0	52.0	52.0	49.0	71.0	0.0	71.0	
Evening	19	69.0	92.9	46.7	79.0	76.0	73.0	71.0	67.0	63.0	52.0	50.0	48.0	47.0	69.0	5.0	74.0
	20	67.8	89.6	45.0	77.0	75.0	72.0	71.0	67.0	62.0	49.0	48.0	48.0	46.0	67.8	5.0	72.8
	21	66.3	85.9	42.6	75.0	74.0	72.0	70.1	66.0	60.0	48.0	47.0	47.0	43.0	66.3	5.0	71.3
Night	22	65.5	84.6	43.4	76.0	74.0	71.0	70.0	65.0	57.0	48.0	46.0	46.0	44.0	65.5	10.0	75.5
	23	65.1	87.6	40.9	76.0	74.0	71.0	69.0	61.0	53.0	44.0	43.0	43.0	41.0	65.1	10.0	75.1
	24-Hour L _{eq} (dBA)	69.3															
Day	Min	69.1	86.7	43.8	79.0	77.0	74.0	73.0	68.0	63.0	51.0	49.0	49.0	46.0	69.1	5.0	74.0
	Max	72.1	97.6	49.7	82.0	80.0	76.0	74.0	70.0	67.0	61.0	56.0	56.0	53.0	72.1	5.0	77.1
	Energy Average	70.7	Average:	Average:	80.3	78.1	74.8	73.3	68.8	64.8	54.9	52.2	52.2	49.3	70.7	5.0	75.7
Evening	Min	66.3	85.9	42.6	75.0	74.0	72.0	70.1	66.0	60.0	48.0	47.0	47.0	43.0	66.3	5.0	71.3
	Max	69.0	92.9	46.7	79.0	76.0	73.0	71.0	67.0	63.0	52.0	50.0	50.0	47.0	69.0	5.0	74.0
	Energy Average	67.8	Average:	Average:	77.0	75.0	72.3	70.7	66.7	61.7	49.7	48.3	48.3	45.3	67.8	5.0	72.8
Night	Min	59.1	84.6	39.3	71.0	68.0	64.0	61.0	51.0	46.0	42.0	42.0	42.0	40.0	59.1	10.0	69.1
	Max	71.1	98.3	49.6	81.0	79.0	76.0	74.0	70.0	67.0	59.0	55.0	55.0	52.0	71.1	10.0	81.1
	Energy Average	67.1	Average:	Average:	76.8	74.0	70.8	68.6	61.7	55.7	47.8	46.3	46.3	44.4	67.1	10.0	77.1



24-Hour Noise Level Measurement Summary

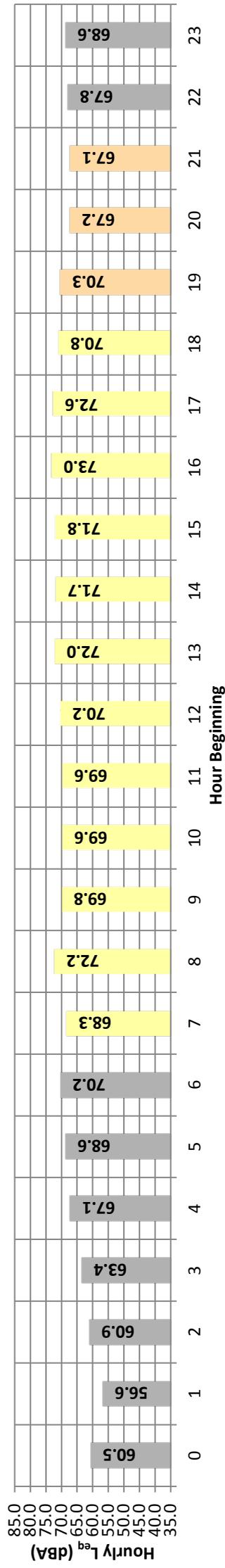
Date: Wednesday, May 16, 2018
Project: The Merge

Location: L4 - Located south of the Project site on Limonite Avenue adjacent to an existing agricultural use on a commercial-designated use lot.

Meter: Piccolo I

JN: 11180
Analyst: A. Wolfe

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L _{eq}	L _{max}	L _{min}	Hour Beginning								L _{eq}	Adj.	Adj. L _{eq}	
					L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%				L99%
Night	0	60.5	84.7	40.7	71.0	69.0	67.0	64.0	56.0	48.0	43.0	42.0	41.0	60.5	10.0	70.5
	1	56.6	78.3	39.2	69.0	66.0	63.0	60.0	49.0	45.0	41.0	41.0	39.0	56.6	10.0	66.6
	2	60.9	87.3	40.4	72.0	68.0	64.0	62.0	58.0	47.0	42.0	42.0	41.0	60.9	10.0	70.9
	3	63.4	88.3	39.3	74.0	70.0	67.0	65.0	58.0	51.0	42.0	42.0	41.0	63.4	10.0	73.4
	4	67.1	89.0	44.6	79.0	75.0	71.0	69.0	65.0	59.0	49.0	48.0	45.0	67.1	10.0	77.1
	5	68.6	93.9	47.0	79.0	76.0	72.0	71.0	67.0	63.0	54.0	52.0	48.0	68.6	10.0	78.6
Day	6	70.2	88.7	47.8	81.0	79.0	75.0	73.0	69.0	65.0	56.0	54.0	50.0	70.2	10.0	80.2
	7	68.3	84.8	44.6	78.0	76.0	73.0	72.0	68.0	63.0	54.0	53.0	50.0	68.3	0.0	68.3
	8	72.2	97.3	45.7	84.0	81.0	76.0	73.0	68.0	63.0	53.0	51.0	48.0	72.2	0.0	72.2
	9	69.8	93.6	42.0	82.0	79.0	74.0	72.0	67.0	60.0	49.0	47.0	44.0	69.8	0.0	69.8
	10	69.6	91.3	43.2	81.0	79.0	75.0	72.0	66.0	60.0	49.0	47.0	45.0	69.6	0.0	69.6
	11	69.6	94.9	42.2	80.0	78.0	74.0	72.0	67.0	62.0	51.0	49.0	45.0	69.6	0.0	69.6
	12	70.2	90.2	45.6	82.0	80.0	75.0	73.0	67.0	62.0	52.0	50.0	47.0	70.2	0.0	70.2
	13	72.0	96.7	45.2	83.0	80.0	76.0	74.0	68.0	63.0	52.0	50.0	47.0	72.0	0.0	72.0
	14	71.7	94.9	48.7	83.0	81.0	76.0	74.0	69.0	64.0	55.0	53.0	50.0	71.7	0.0	71.7
	15	71.8	93.3	49.5	83.0	81.0	76.0	74.0	70.0	65.0	56.0	54.0	51.0	71.8	0.0	71.8
	16	73.0	97.9	49.8	84.0	81.0	77.0	75.0	70.0	66.0	55.0	53.0	51.0	73.0	0.0	73.0
	17	72.6	98.3	50.7	83.0	80.0	76.0	74.0	69.0	65.0	56.0	54.0	52.0	72.6	0.0	72.6
18	70.8	94.4	47.2	82.0	79.0	75.0	73.0	69.0	64.0	54.0	52.0	49.0	70.8	0.0	70.8	
Evening	19	70.3	94.2	46.6	82.0	78.0	73.0	72.0	67.0	62.0	52.0	50.0	48.0	70.3	5.0	75.3
	20	67.2	87.3	45.8	77.0	75.0	72.0	71.0	67.0	61.0	52.0	50.0	48.0	67.2	5.0	72.2
	21	67.1	93.0	42.0	76.0	74.0	71.0	69.0	65.0	58.0	48.0	47.0	44.0	67.1	5.0	72.1
Night	22	67.8	93.1	42.5	79.0	75.0	71.0	69.0	63.0	55.0	48.0	47.0	45.0	67.8	10.0	77.8
	23	68.6	99.2	41.0	77.0	73.0	69.0	67.0	59.0	51.0	45.0	44.0	42.0	68.6	10.0	78.6
Day	Min	68.3	84.8	42.0	78.0	76.0	73.0	72.0	66.0	60.0	49.0	47.0	44.0	68.3		69.6
	Max	73.0	98.3	50.7	84.0	81.0	77.0	75.0	70.0	66.0	56.0	54.0	52.0	73.0		74.2
Evening	Min	67.1	87.3	42.0	76.0	74.0	71.0	69.0	65.0	58.0	48.0	47.0	44.0	67.1		69.6
	Max	70.3	94.2	46.6	82.0	78.0	73.0	72.0	67.0	62.0	52.0	50.0	48.0	70.3		74.2
Night	Min	56.6	78.3	39.2	69.0	66.0	63.0	60.0	49.0	45.0	41.0	41.0	39.0	56.6		66.6
	Max	70.2	99.2	47.8	81.0	79.0	75.0	73.0	69.0	65.0	56.0	54.0	50.0	70.2		74.2
Energy Average	Min	68.5	85.5	43.5	78.5	76.5	73.5	72.5	67.5	61.5	50.5	48.5	45.5	68.5		69.6
	Max	73.0	98.3	50.7	84.0	81.0	77.0	75.0	70.0	66.0	56.0	54.0	52.0	73.0		74.2
24-Hour L_{eq} (dBA)																
69.6																
24-Hour CNEL (dBA)																
74.2																



24-Hour Noise Level Measurement Summary

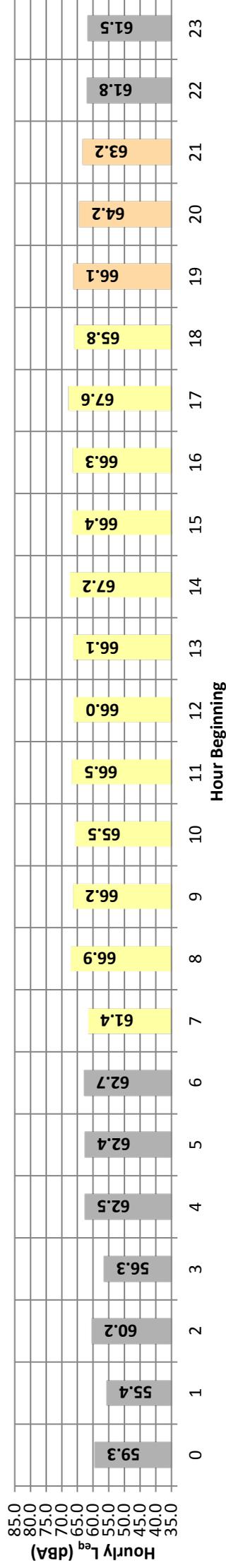
Date: Wednesday, May 16, 2018
Project: The Merge

Location: L5 - Located southeast of the Project site on Limonite Avenue adjacent to existing residential homes.

Meter: Piccolo I

JN: 11180
Analyst: A. Wolfe

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L _{eq}	L _{max}	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L _{eq}	Adj.	Adj. L _{eq}
Night	0	59.3	84.2	36.8	70.0	68.0	65.0	63.0	54.0	44.0	38.0	38.0	38.0	59.3	10.0	69.3
	1	55.4	75.4	38.5	67.0	65.0	62.0	60.0	50.0	44.0	40.0	40.0	38.0	55.4	10.0	65.4
	2	60.2	78.0	38.5	71.0	70.0	69.0	65.0	52.0	44.0	40.0	39.0	38.0	60.2	10.0	70.2
	3	56.3	74.9	38.5	68.0	65.0	63.0	61.0	52.0	44.0	40.0	40.0	38.0	56.3	10.0	66.3
	4	62.5	85.4	39.3	74.0	70.0	67.0	65.0	60.0	51.0	41.0	40.0	40.0	62.5	10.0	72.5
	5	62.4	82.7	38.9	70.0	69.0	68.0	67.0	63.0	56.0	43.0	42.0	40.0	62.4	10.0	72.4
Day	6	62.7	88.9	39.6	71.0	69.0	66.0	65.0	62.0	57.0	43.0	42.0	41.0	62.7	10.0	72.7
	7	61.4	74.2	43.6	69.0	67.0	66.0	65.0	62.0	59.0	49.0	48.0	45.0	61.4	0.0	61.4
	8	66.9	87.6	47.5	75.0	74.0	71.0	70.0	67.0	64.0	54.0	52.0	49.0	66.9	0.0	66.9
	9	66.2	81.3	48.0	76.0	74.0	71.0	70.0	66.0	62.0	53.0	51.0	49.0	66.2	0.0	66.2
	10	65.5	83.7	46.6	75.0	73.0	71.0	69.0	65.0	61.0	50.0	49.0	47.0	65.5	0.0	65.5
	11	66.5	89.9	46.1	76.0	75.0	71.0	70.0	66.0	61.0	51.0	49.0	47.0	66.5	0.0	66.5
	12	66.0	82.0	44.3	76.0	74.0	71.0	70.0	66.0	61.0	51.0	49.0	45.0	66.0	0.0	66.0
	13	66.1	80.5	45.5	76.0	74.0	72.0	70.0	66.0	62.0	51.0	50.0	48.0	66.1	0.0	66.1
	14	67.2	85.3	46.6	77.0	75.0	72.0	71.0	67.0	63.0	53.0	51.0	49.0	67.2	0.0	67.2
	15	66.4	84.6	45.5	75.0	73.0	71.0	70.0	67.0	63.0	51.0	50.0	47.0	66.4	0.0	66.4
	16	66.3	81.8	44.7	75.0	73.0	71.0	70.0	67.0	64.0	53.0	50.0	48.0	66.3	0.0	66.3
	17	67.6	94.0	46.1	75.0	73.0	70.0	69.0	67.0	64.0	53.0	51.0	48.0	67.6	0.0	67.6
18	65.8	82.8	45.1	73.0	72.0	70.0	69.0	67.0	63.0	51.0	49.0	46.0	65.8	0.0	65.8	
Evening	19	66.1	87.0	44.5	76.0	72.0	70.0	69.0	66.0	62.0	50.0	48.0	46.0	66.1	5.0	71.1
	20	64.2	80.6	43.6	72.0	71.0	69.0	68.0	65.0	61.0	48.0	47.0	45.0	64.2	5.0	69.2
	21	63.2	82.0	39.8	71.0	70.0	68.0	68.0	64.0	57.0	44.0	43.0	41.0	63.2	5.0	68.2
Night	22	61.8	78.7	38.5	71.0	70.0	67.0	66.0	61.0	53.0	42.0	40.0	39.0	61.8	10.0	71.8
	23	61.5	87.4	38.5	71.0	69.0	66.0	65.0	58.0	50.0	40.0	39.0	38.0	61.5	10.0	71.5
Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	24-Hour L_{eq} (dBA)		
Day	Min	61.4	74.2	43.6	69.0	67.0	66.0	65.0	62.0	59.0	49.0	48.0	45.0	64.6		
	Max	67.6	94.0	48.0	77.0	75.0	72.0	71.0	67.0	64.0	54.0	52.0	49.0	24-Hour CNEL (dBA)		
Evening	Min	63.2	80.6	39.8	74.8	73.1	70.6	69.4	66.1	62.3	51.7	49.9	47.3	68.9		
	Max	66.1	87.0	44.5	76.0	72.0	70.0	69.0	66.0	62.0	50.0	48.0	46.0			
Night	Min	55.4	74.9	36.8	73.0	71.0	69.0	68.3	65.0	60.0	47.3	46.0	44.0			
	Max	62.7	88.9	39.6	74.0	70.0	69.0	67.0	63.0	57.0	43.0	42.0	41.0			
Energy Average	Energy Average	60.9	Average:	Average:	70.3	68.3	65.9	64.1	56.9	49.2	40.8	39.8	38.9			



24-Hour Noise Level Measurement Summary

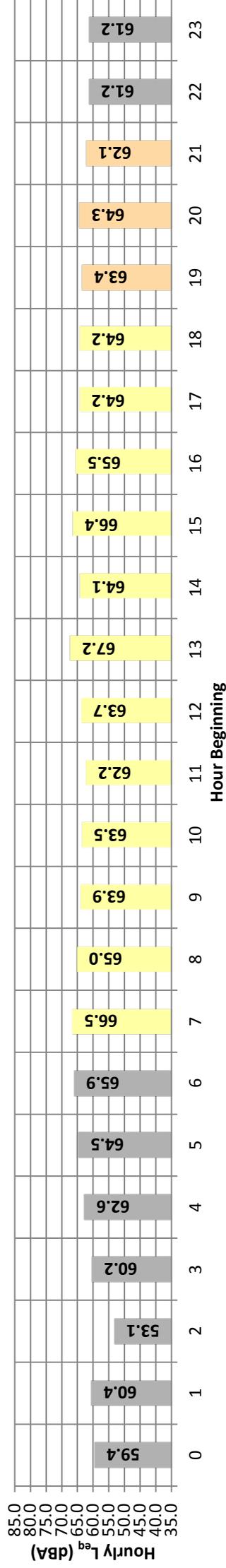
Date: Wednesday, May 16, 2018
Project: The Merge

Location: L6 - Located east of the Project site adjacent to existing residential homes north of Limonite Avenue.

Meter: Piccolo I

JN: 11180
Analyst: A. Wolfe

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L _{eq}	L _{max}	L _{min}	Hour Beginning								L _{eq}	Adj.	Adj. L _{eq}	
					L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%				L99%
Night	0	59.4	86.5	38.6	70.0	66.0	61.0	56.0	48.0	45.0	42.0	41.0	40.0	59.4	10.0	69.4
	1	60.4	80.2	37.8	70.0	70.0	70.0	69.0	47.0	44.0	41.0	40.0	39.0	60.4	10.0	70.4
	2	53.1	73.6	39.2	65.0	59.0	55.0	55.0	47.0	45.0	42.0	41.0	39.0	53.1	10.0	63.1
	3	60.2	83.5	38.6	70.0	68.0	68.0	66.0	52.0	46.0	42.0	41.0	40.0	60.2	10.0	70.2
	4	62.6	84.5	40.9	74.0	71.0	67.0	65.0	57.0	50.0	44.0	43.0	42.0	62.6	10.0	72.6
	5	64.5	87.1	42.4	74.0	72.0	69.0	67.0	63.0	59.0	48.0	45.0	43.0	64.5	10.0	74.5
Day	6	65.9	90.9	43.7	75.0	73.0	70.0	69.0	64.0	58.0	49.0	47.0	45.0	65.9	10.0	75.9
	7	66.5	86.3	46.9	75.0	74.0	72.0	70.0	66.0	62.0	55.0	53.0	50.0	66.5	0.0	66.5
	8	65.0	88.5	47.3	74.0	72.0	70.0	68.0	64.0	60.0	52.0	50.0	48.0	65.0	0.0	65.0
	9	63.9	88.2	44.3	75.0	71.0	68.0	66.0	61.0	56.0	49.0	48.0	46.0	63.9	0.0	63.9
	10	63.5	88.1	44.8	73.0	70.0	67.0	66.0	62.0	59.0	50.0	48.0	46.0	63.5	0.0	63.5
	11	62.2	82.5	43.6	72.0	71.0	68.0	66.0	60.0	55.0	48.0	46.0	45.0	62.2	0.0	62.2
	12	63.7	83.7	42.7	75.0	72.0	68.0	67.0	61.0	56.0	48.0	46.0	44.0	63.7	0.0	63.7
	13	67.2	89.0	48.0	77.0	74.0	71.0	70.0	65.0	60.0	52.0	51.0	50.0	67.2	0.0	67.2
	14	64.1	82.6	48.9	72.0	71.0	70.0	68.0	64.0	59.0	54.0	53.0	51.0	64.1	0.0	64.1
	15	66.4	94.4	48.4	74.0	72.0	70.0	68.0	63.0	59.0	53.0	52.0	50.0	66.4	0.0	66.4
	16	65.5	87.5	47.4	75.0	73.0	70.0	69.0	63.0	59.0	53.0	52.0	49.0	65.5	0.0	65.5
	17	64.2	81.1	48.2	73.0	72.0	70.0	69.0	64.0	59.0	53.0	52.0	50.0	64.2	0.0	64.2
18	64.2	85.3	47.8	73.0	72.0	70.0	68.0	63.0	59.0	53.0	52.0	49.0	64.2	0.0	64.2	
Evening	19	63.4	80.6	47.0	74.0	72.0	69.0	68.0	62.0	58.0	52.0	51.0	49.0	63.4	5.0	68.4
	20	64.3	88.0	45.0	73.0	72.0	69.0	68.0	61.0	56.0	50.0	49.0	47.0	64.3	5.0	69.3
	21	62.1	84.3	42.9	72.0	71.0	68.0	66.0	59.0	54.0	47.0	45.0	43.0	62.1	5.0	67.1
Night	22	61.2	88.7	39.6	71.0	68.0	65.0	62.0	55.0	51.0	43.0	42.0	40.0	61.2	10.0	71.2
	23	61.2	85.1	39.3	72.0	70.0	66.0	64.0	57.0	51.0	43.0	42.0	39.0	61.2	10.0	71.2
Day	Min	62.2	81.1	42.7	72.0	70.0	67.0	66.0	60.0	55.0	48.0	46.0	44.0	62.2	24-Hour L_{eq} (dBA) 63.8	
	Max	67.2	94.4	48.9	77.0	74.0	72.0	70.0	66.0	62.0	55.0	53.0	51.0	67.2		
Evening	Min	62.1	80.6	42.9	72.0	71.0	68.0	66.0	63.0	58.6	51.7	50.3	48.2	62.1	24-Hour CNEL (dBA) 69.2	
	Max	64.3	88.0	47.0	74.0	72.0	69.0	68.0	62.0	58.0	52.0	51.0	49.0	64.3		
Night	Min	53.1	73.6	37.8	65.0	63.0	59.0	55.0	47.0	44.0	41.0	40.0	39.0	53.1	24-Hour L_{eq} (dBA) 69.2	
	Max	65.9	90.9	43.7	75.0	73.0	70.0	69.0	64.0	59.0	49.0	47.0	45.0	65.9		
Energy Average	Min	63.4	83.4	43.4	73.0	71.7	68.7	67.3	60.7	56.0	49.7	48.3	46.3	63.4	24-Hour L_{eq} (dBA) 69.2	
	Max	64.2	85.1	43.7	73.0	72.0	69.0	67.0	60.7	56.0	49.9	47.0	45.0	64.2		
Energy Average	Min	62.0	81.1	42.7	72.0	70.0	67.0	66.0	60.0	55.0	48.0	46.0	44.0	62.0	24-Hour L_{eq} (dBA) 69.2	
	Max	67.2	94.4	48.9	77.0	74.0	72.0	70.0	66.0	62.0	55.0	53.0	51.0	67.2		



APPENDIX 7.1:
OFF-SITE TRAFFIC NOISE LEVEL CONTOURS

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing Without Project Road Name: Grove Av. Road Segment: n/o Merrill Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 7,331 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 733 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 60 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
				Vehicle Mix			
				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
Site Data				Noise Source Elevations (in feet)			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 0,000 Medium Trucks: 2,297 Heavy Trucks: 8,004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 40,311 Medium Trucks: 40,091 Heavy Trucks: 40,113			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.04	1.30	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-15.41	1.34	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-20.63	1.33	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.3	63.7	63.7	59.0	66.5	67.1	
Medium Trucks:	65.7	63.3	61.1	59.3	66.5	66.8	
Heavy Trucks:	64.9	62.7	58.8	58.3	65.5	65.8	
Vehicle Noise:	70.4	68.0	66.4	63.7	71.0	71.4	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				58	125	269	580
CNEL:				62	133	286	616

Wednesday, May 30, 2018

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing Without Project Road Name: Hellman Av. Road Segment: n/o Merrill Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 108 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 11 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
				Vehicle Mix			
				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
Site Data				Noise Source Elevations (in feet)			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 0,000 Medium Trucks: 2,297 Heavy Trucks: 8,004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 57,782 Medium Trucks: 57,629 Heavy Trucks: 57,644			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-22.35	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-33.73	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-38.95	-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:	45.6	43.0	43.0	38.4	45.8	46.4	
Medium Trucks:	45.0	42.7	40.4	38.6	45.8	46.1	
Heavy Trucks:	44.2	42.0	38.1	37.6	44.8	45.1	
Vehicle Noise:	49.8	47.4	43.0	40.3	50.3	50.7	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				4	8	17	36
CNEL:				4	8	18	38

Wednesday, May 30, 2018

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing Without Project Road Name: Hellman Av. Road Segment: s/o Kimball Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 16,982 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 1,698 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 51 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
				Vehicle Mix			
				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
Site Data				Noise Source Elevations (in feet)			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 49.0 feet Centerline Dist. to Observer: 49.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 0,000 Medium Trucks: 2,297 Heavy Trucks: 8,004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 42,140 Medium Trucks: 41,929 Heavy Trucks: 41,950			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.07	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-11.30	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-16.53	1.04	-1.20	-5.44	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	65.8	65.7	61.1	68.6	69.2	
Medium Trucks:	68.0	65.6	63.4	61.6	68.7	69.1	
Heavy Trucks:	67.6	65.4	61.5	61.0	68.2	68.5	
Vehicle Noise:	72.7	70.4	68.6	66.0	73.3	73.7	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				81	175	377	812
CNEL:				86	185	400	861

Wednesday, May 30, 2018

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing Without Project Road Name: Archibald Av. Road Segment: n/o Riverside Dr.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 32,371 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,237 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
				Vehicle Mix			
				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
Site Data				Noise Source Elevations (in feet)			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 0,000 Medium Trucks: 2,297 Heavy Trucks: 8,004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 57,782 Medium Trucks: 57,629 Heavy Trucks: 57,644			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.41	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-8.96	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-14.18	-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:	70.4	67.8	67.8	63.2	70.6	71.2	
Medium Trucks:	69.8	67.4	65.2	63.4	70.6	70.9	
Heavy Trucks:	69.0	66.8	62.9	62.4	69.6	69.9	
Vehicle Noise:	74.5	72.1	70.5	67.8	75.1	75.4	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				161	346	746	1,608
CNEL:				171	368	793	1,708

Wednesday, May 30, 2018

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing Without Project Road Name: Archibald Av. Road Segment: s/o Riverside Dr.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 31,768 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,177 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
Centerline Distance to Noise Contour (in feet)				70 dBA			
				Ldn: 184			
				CNEL: 195			
70 dBA				65 dBA			
				Ldn: 396			
				CNEL: 421			
65 dBA				60 dBA			
				Ldn: 852			
				CNEL: 906			
60 dBA				55 dBA			
				Ldn: 1,837			
				CNEL: 1,953			

Wednesday, May 30, 2018

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing Without Project Road Name: Archibald Av. Road Segment: s/o Chino Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 26,541 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,654 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
Centerline Distance to Noise Contour (in feet)				70 dBA			
				Ldn: 163			
				CNEL: 173			
70 dBA				65 dBA			
				Ldn: 351			
				CNEL: 373			
65 dBA				60 dBA			
				Ldn: 756			
				CNEL: 804			
60 dBA				55 dBA			
				Ldn: 1,629			
				CNEL: 1,732			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing Without Project Road Name: Archibald Av. Road Segment: s/o Schaefer Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 26,108 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,611 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
Centerline Distance to Noise Contour (in feet)				70 dBA			
				Ldn: 161			
				CNEL: 171			
70 dBA				65 dBA			
				Ldn: 347			
				CNEL: 369			
65 dBA				60 dBA			
				Ldn: 748			
				CNEL: 795			
60 dBA				55 dBA			
				Ldn: 1,611			
				CNEL: 1,713			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing Without Project Road Name: Archibald Av. Road Segment: s/o Ontario Ranch Rd.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 33,454 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,345 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
Centerline Distance to Noise Contour (in feet)				70 dBA			
				Ldn: 190			
				CNEL: 202			
70 dBA				65 dBA			
				Ldn: 410			
				CNEL: 435			
65 dBA				60 dBA			
				Ldn: 882			
				CNEL: 938			
60 dBA				55 dBA			
				Ldn: 1,901			
				CNEL: 2,021			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing Without Project Road Name: Archibald Av. Road Segment: s/o Eucalyptus Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 33,516 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,352 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
FHWA Noise Model Calculations				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
Autos: 71.78 Medium Trucks: 82.40 Heavy Trucks: 86.40				Autos: 71.78 Medium Trucks: 82.40 Heavy Trucks: 86.40			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Unmitigated Noise Levels (without Topo and barrier attenuation)			
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	CNEL
Autos:	71.7	69.1	69.1	64.5	71.9	72.5	72.5
Medium Trucks:	71.0	68.6	66.3	64.5	71.7	72.0	72.3
Heavy Trucks:	69.7	67.6	63.6	63.2	70.4	70.6	70.9
Vehicle Noise:	75.6	73.2	71.7	68.9	76.2	76.6	76.8
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				190	410	883	1,903
CNEL:				202	436	939	2,024

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing Without Project Road Name: Archibald Av. Road Segment: s/o Merrill Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 35,558 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,556 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
FHWA Noise Model Calculations				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
Autos: 71.78 Medium Trucks: 82.40 Heavy Trucks: 86.40				Autos: 71.78 Medium Trucks: 82.40 Heavy Trucks: 86.40			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Unmitigated Noise Levels (without Topo and barrier attenuation)			
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	CNEL
Autos:	71.9	69.4	69.3	64.7	72.2	72.8	72.8
Medium Trucks:	71.2	68.8	66.6	64.8	72.0	72.3	72.3
Heavy Trucks:	70.0	67.8	63.9	63.4	70.6	70.9	70.9
Vehicle Noise:	75.9	73.5	71.9	69.1	76.4	76.8	76.8
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				198	427	919	1,980
CNEL:				210	453	977	2,105

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing Without Project Road Name: Archibald Av. Road Segment: s/o Limonite Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 29,449 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,945 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
FHWA Noise Model Calculations				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Autos: 70.20 Medium Trucks: 81.00 Heavy Trucks: 85.38				Autos: 70.20 Medium Trucks: 81.00 Heavy Trucks: 85.38			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Unmitigated Noise Levels (without Topo and barrier attenuation)			
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	CNEL
Autos:	69.2	66.6	66.6	61.9	69.4	70.0	70.0
Medium Trucks:	68.6	66.2	64.0	62.2	69.3	69.7	69.7
Heavy Trucks:	67.7	65.6	61.6	61.2	68.4	68.6	68.6
Vehicle Noise:	73.3	70.9	69.3	66.6	73.8	74.2	74.2
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				137	295	635	1,369
CNEL:				145	313	675	1,454

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing Without Project Road Name: Archibald Av. Road Segment: s/o 65th St.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 32,542 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,254 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
FHWA Noise Model Calculations				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Autos: 70.20 Medium Trucks: 81.00 Heavy Trucks: 85.38				Autos: 70.20 Medium Trucks: 81.00 Heavy Trucks: 85.38			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Unmitigated Noise Levels (without Topo and barrier attenuation)			
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	CNEL
Autos:	69.6	67.0	67.0	62.4	69.8	70.4	70.4
Medium Trucks:	69.0	66.6	64.4	62.6	69.8	70.1	70.1
Heavy Trucks:	68.2	66.0	62.1	61.6	68.8	69.1	69.1
Vehicle Noise:	73.7	71.3	69.7	67.0	74.3	74.7	74.7
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				146	315	679	1,463
CNEL:				155	335	721	1,554

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing Without Project Road Name: Archibald Av. Road Segment: s/o Schleisman Rd.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 28,489 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,849 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
				Vehicle Mix			
				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
Site Data				Noise Source Elevations (in feet)			
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 0,000 Medium Trucks: 2,297 Heavy Trucks: 8,004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 65,422 Medium Trucks: 65,286 Heavy Trucks: 65,299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.86	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-9.51	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-14.74	-1.84	-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:	69.0	66.4	66.4	61.8	69.2	69.8	
Medium Trucks:	68.4	66.1	63.8	62.0	69.2	69.5	
Heavy Trucks:	67.6	65.4	61.5	61.0	68.2	68.5	
Vehicle Noise:	73.2	70.8	69.1	66.4	73.7	74.1	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				134	288	622	1,339
CNEL:				142	306	660	1,422

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing Without Project Road Name: Ontario Ranch Rd. Road Segment: e/o Archibald Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 19,905 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 1,991 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 115 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
				Vehicle Mix			
				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
Site Data				Noise Source Elevations (in feet)			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 0,000 Medium Trucks: 2,297 Heavy Trucks: 8,004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 55,846 Medium Trucks: 55,687 Heavy Trucks: 55,703			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.30	-0.82	-1.20	-4.74	0.000	0.000
Medium Trucks:	81.00	-11.07	-0.81	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-16.30	-0.81	-1.20	-5.23	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	65.9	65.9	61.3	68.7	69.3	
Medium Trucks:	67.9	65.5	63.3	61.5	68.7	69.0	
Heavy Trucks:	67.1	64.9	61.0	60.5	67.7	68.0	
Vehicle Noise:	72.6	70.2	68.6	65.9	73.2	73.6	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				130	280	604	1,301
CNEL:				138	298	641	1,382

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing Without Project Road Name: Merrill Av. Road Segment: w/o Grove Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 12,064 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 1,206 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
				Vehicle Mix			
				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
Site Data				Noise Source Elevations (in feet)			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 0,000 Medium Trucks: 2,297 Heavy Trucks: 8,004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 40,460 Medium Trucks: 40,241 Heavy Trucks: 40,262			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.87	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-13.25	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-18.47	1.31	-1.20	-5.50	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	65.8	65.8	61.2	68.6	69.2	
Medium Trucks:	67.9	65.5	63.2	61.5	68.6	69.3	
Heavy Trucks:	67.0	64.8	60.9	60.5	67.7	68.9	
Vehicle Noise:	72.6	70.2	68.5	65.8	73.1	73.5	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				71	153	329	708
CNEL:				75	162	349	752

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing Without Project Road Name: Merrill Av. Road Segment: w/o Flight Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 13,208 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 1,321 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
				Vehicle Mix			
				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
Site Data				Noise Source Elevations (in feet)			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 0,000 Medium Trucks: 2,297 Heavy Trucks: 8,004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 40,460 Medium Trucks: 40,241 Heavy Trucks: 40,262			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.48	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.85	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-18.08	1.31	-1.20	-5.50	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.8	66.2	66.2	61.6	69.0	69.6	
Medium Trucks:	68.3	65.9	63.6	61.8	69.0	69.3	
Heavy Trucks:	67.4	65.2	61.3	60.8	68.1	68.3	
Vehicle Noise:	73.0	70.6	68.9	66.2	73.5	73.9	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				75	162	349	752
CNEL:				80	172	371	799

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing Without Project Road Name: Merrill Av. Road Segment: e/o Hellman Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 13,301 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 1,330 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 -1.45 1.28 -1.20 -4.61 0.000 0.000 Medium Trucks: 81.00 -12.82 1.31 -1.20 -4.87 0.000 0.000 Heavy Trucks: 85.38 -18.05 1.31 -1.20 -5.50 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 68.8 66.3 66.2 61.6 69.1 69.6 Medium Trucks: 68.3 65.9 63.7 61.9 69.0 69.4 Heavy Trucks: 67.4 65.3 61.3 60.9 68.1 68.3 Vehicle Noise: 73.0 70.6 69.0 66.2 73.5 73.9				Lane Equivalent Distance (in feet)			
				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262			
Centerline Distance to Noise Contour (in feet) Ldn: 70 dBA 65 dBA 60 dBA 55 dBA CNEL: 80 173 373 803				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing Without Project Road Name: Merrill Av. Road Segment: e/o Archibald Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 3,604 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 360 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 68.46 -6.66 1.28 -1.20 -4.61 0.000 0.000 Medium Trucks: 79.45 -18.03 1.31 -1.20 -4.87 0.000 0.000 Heavy Trucks: 84.25 -23.26 1.31 -1.20 -5.50 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 61.9 59.3 59.3 54.7 62.1 62.7 Medium Trucks: 61.5 59.1 56.9 55.1 62.3 62.6 Heavy Trucks: 61.1 58.9 55.0 54.5 61.7 62.0 Vehicle Noise: 66.3 63.9 62.2 59.5 66.8 67.2				Lane Equivalent Distance (in feet)			
				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262			
Centerline Distance to Noise Contour (in feet) Ldn: 70 dBA 65 dBA 60 dBA 55 dBA CNEL: 27 58 125 270				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262			
				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing Without Project Road Name: Kimball Av. Road Segment: w/o Hellman Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 16,982 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 1,698 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 51 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 49.0 feet Centerline Dist. to Observer: 49.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 -0.39 1.01 -1.20 -4.64 0.000 0.000 Medium Trucks: 81.00 -11.76 1.04 -1.20 -4.87 0.000 0.000 Heavy Trucks: 85.38 -16.98 1.04 -1.20 -5.44 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 69.6 67.1 67.0 62.4 69.9 70.4 Medium Trucks: 69.1 66.7 64.4 62.7 69.8 70.2 Heavy Trucks: 68.2 66.1 62.1 61.7 68.9 69.1 Vehicle Noise: 73.8 71.4 69.8 67.0 74.3 74.7				Lane Equivalent Distance (in feet)			
				Autos: 42.140 Medium Trucks: 41.929 Heavy Trucks: 41.950			
Centerline Distance to Noise Contour (in feet) Ldn: 70 dBA 65 dBA 60 dBA 55 dBA CNEL: 101 218 469 1,010				Autos: 42.140 Medium Trucks: 41.929 Heavy Trucks: 41.950			
				Autos: 42.140 Medium Trucks: 41.929 Heavy Trucks: 41.950			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing Without Project Road Name: Limonite Av. Road Segment: e/o Hellman Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 1 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 0 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 -42.69 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -54.06 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -59.28 -1.84 -1.20 -5.25 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 24.5 21.9 21.9 17.2 24.7 25.3 Medium Trucks: 23.9 21.5 19.3 17.5 24.6 25.0 Heavy Trucks: 23.1 20.9 16.9 16.5 23.7 23.9 Vehicle Noise: 28.6 26.2 24.6 21.9 29.1 29.5				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet) Ldn: 70 dBA 65 dBA 60 dBA 55 dBA CNEL: 0 0 1 1				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing Without Project Road Name: Limonite Av. Road Segment: e/o Archibald Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 21,999 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,200 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
FHWA Noise Model Calculations				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.74	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-10.64	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-15.86	-1.84	-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:	67.9	65.3	65.3	60.7	68.1	68.7	
Medium Trucks:	67.3	64.9	62.7	60.9	68.1	68.4	
Heavy Trucks:	66.5	64.3	60.4	59.9	67.1	67.4	
Vehicle Noise:	72.0	69.6	68.0	65.3	72.6	73.0	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				113	243	523	1,127
CNEL:				120	258	556	1,197

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing Without Project Road Name: Limonite Av. Road Segment: e/o Harrison Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 26,386 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,639 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
FHWA Noise Model Calculations				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.53	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-9.85	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-15.07	-1.84	-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:	68.7	66.1	66.1	61.5	68.9	69.5	
Medium Trucks:	68.1	65.7	63.5	61.7	68.9	69.2	
Heavy Trucks:	67.3	65.1	61.2	60.7	67.9	68.2	
Vehicle Noise:	72.8	70.4	68.8	66.1	73.4	73.7	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				127	274	591	1,272
CNEL:				135	291	627	1,351

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing Without Project Road Name: Limonite Av. Road Segment: e/o Sumner Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 28,149 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,815 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
FHWA Noise Model Calculations				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.81	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-9.57	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-14.79	-1.84	-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:	69.0	66.4	66.4	61.7	69.2	70.2	
Medium Trucks:	68.4	66.0	63.8	62.0	69.1	69.5	
Heavy Trucks:	67.5	65.4	61.4	61.0	68.2	68.4	
Vehicle Noise:	73.1	70.7	69.1	66.4	73.6	74.0	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				133	286	617	1,328
CNEL:				141	304	655	1,411

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing Without Project Road Name: Limonite Av. Road Segment: e/o Scholar Wy.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 31,041 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,104 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
FHWA Noise Model Calculations				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.23	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-9.14	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-14.37	-1.84	-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:	69.4	66.8	66.8	62.2	69.6	70.2	
Medium Trucks:	68.8	66.4	64.2	62.4	69.6	69.9	
Heavy Trucks:	68.0	65.8	61.9	61.4	68.6	68.9	
Vehicle Noise:	73.5	71.1	69.5	66.8	74.1	74.5	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				142	305	658	1,418
CNEL:				151	324	699	1,506

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing Without Project Road Name: Limonite Av. Road Segment: e/o Hamner Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 45,529 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,553 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 68.46 4.35 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 79.45 -7.02 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 84.25 -12.24 -1.84 -1.20 -5.25 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 69.8 67.2 67.2 62.5 70.0 70.6 Medium Trucks: 69.4 67.0 64.8 63.0 70.1 70.5 Heavy Trucks: 69.0 66.8 62.9 62.4 69.6 69.9 Vehicle Noise: 74.2 71.8 70.0 67.4 74.7 75.1				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet) Ldn: 156 336 725 1,562 CNEL: 166 357 769 1,657				70 dBA			
				65 dBA			
Ldn: 156 336 725 1,562 CNEL: 166 357 769 1,657				60 dBA			
				55 dBA			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing + Project Road Name: Grove Av. Road Segment: n/o Merrill Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 7,596 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 760 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 60 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.64% Medium Trucks: 69.1% 10.3% 20.5% 6.43% Heavy Trucks: 72.8% 7.3% 19.8% 1.93%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 -3.87 1.30 -1.20 -4.65 0.000 0.000 Medium Trucks: 81.00 -15.41 1.34 -1.20 -4.87 0.000 0.000 Heavy Trucks: 85.38 -20.63 1.33 -1.20 -5.43 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 66.4 63.9 63.8 59.2 66.7 67.2 Medium Trucks: 65.7 63.3 61.1 59.3 66.5 66.8 Heavy Trucks: 64.9 62.7 58.8 58.3 65.5 65.8 Vehicle Noise: 70.5 68.1 66.5 63.7 71.0 71.4				Lane Equivalent Distance (in feet)			
				Autos: 40.311 Medium Trucks: 40.091 Heavy Trucks: 40.113			
Centerline Distance to Noise Contour (in feet) Ldn: 59 126 272 585 CNEL: 62 134 289 622				70 dBA			
				65 dBA			
Ldn: 59 126 272 585 CNEL: 62 134 289 622				60 dBA			
				55 dBA			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing + Project Road Name: Hellman Av. Road Segment: n/o Merrill Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 439 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 44 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 97.87% Medium Trucks: 69.1% 10.3% 20.5% 1.64% Heavy Trucks: 72.8% 7.3% 19.8% 0.49%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 -15.96 -1.05 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -33.73 -1.03 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -38.95 -1.03 -1.20 -5.25 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 52.0 49.4 49.4 44.8 52.2 52.8 Medium Trucks: 45.0 42.7 40.4 38.6 45.8 46.1 Heavy Trucks: 44.2 42.0 38.1 37.6 44.8 45.1 Vehicle Noise: 53.4 50.9 50.2 46.3 53.7 54.2				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
Centerline Distance to Noise Contour (in feet) Ldn: 6 13 28 61 CNEL: 7 14 30 66				70 dBA			
				65 dBA			
Ldn: 6 13 28 61 CNEL: 7 14 30 66				60 dBA			
				55 dBA			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing + Project Road Name: Hellman Av. Road Segment: s/o Kimball Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 17,313 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 1,731 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 51 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 49.0 feet Centerline Dist. to Observer: 49.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.51% Medium Trucks: 69.1% 10.3% 20.5% 6.53% Heavy Trucks: 72.8% 7.3% 19.8% 1.96%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 68.46 0.16 1.01 -1.20 -4.64 0.000 0.000 Medium Trucks: 79.45 -11.30 1.04 -1.20 -4.87 0.000 0.000 Heavy Trucks: 84.25 -16.53 1.04 -1.20 -5.44 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 68.4 65.9 65.8 61.2 68.7 69.2 Medium Trucks: 68.0 65.6 63.4 61.6 68.7 69.1 Heavy Trucks: 67.6 65.4 61.5 61.0 68.2 68.5 Vehicle Noise: 72.8 70.4 68.7 66.0 73.3 73.7				Lane Equivalent Distance (in feet)			
				Autos: 42.140 Medium Trucks: 41.929 Heavy Trucks: 41.950			
Centerline Distance to Noise Contour (in feet) Ldn: 82 176 378 815 CNEL: 87 186 402 865				70 dBA			
				65 dBA			
Ldn: 82 176 378 815 CNEL: 87 186 402 865				60 dBA			
				55 dBA			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing + Project Road Name: Archibald Av. Road Segment: s/o Ontario Ranch Rd.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 34,626 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,463 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.50% Medium Trucks: 69.1% 10.3% 20.5% 6.46% Heavy Trucks: 72.8% 7.3% 19.8% 2.04%			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.30	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-9.21	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-14.21	-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	69.3	69.2	64.6	72.1	72.6	
Medium Trucks:	71.0	68.6	66.3	64.5	71.7	72.0	
Heavy Trucks:	70.0	67.8	63.8	63.4	70.6	70.8	
Vehicle Noise:	75.8	73.4	71.8	69.0	76.3	76.7	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			194	418	900	1,940	
CNEL:			206	444	957	2,062	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing + Project Road Name: Archibald Av. Road Segment: s/o Eucalyptus Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 34,755 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,475 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.51% Medium Trucks: 69.1% 10.3% 20.5% 6.45% Heavy Trucks: 72.8% 7.3% 19.8% 2.04%			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.32	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-9.21	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-14.20	-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:	71.9	69.3	69.3	64.6	72.1	72.7	
Medium Trucks:	71.0	68.6	66.3	64.6	71.7	72.0	
Heavy Trucks:	70.0	67.8	63.9	63.4	70.6	70.9	
Vehicle Noise:	75.8	73.4	71.8	69.0	76.3	76.7	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			194	419	902	1,943	
CNEL:			207	445	959	2,066	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing + Project Road Name: Archibald Av. Road Segment: s/o Merrill Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 38,144 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,814 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.74% Medium Trucks: 69.1% 10.3% 20.5% 6.24% Heavy Trucks: 72.8% 7.3% 19.8% 2.02%			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.73	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-8.94	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.85	-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:	72.3	69.7	69.7	65.0	72.5	73.1	
Medium Trucks:	71.2	68.8	66.6	64.8	72.0	72.3	
Heavy Trucks:	70.3	68.1	64.2	63.8	71.0	71.2	
Vehicle Noise:	76.1	73.7	72.2	69.3	76.6	77.0	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			205	441	951	2,049	
CNEL:			218	469	1,011	2,179	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing + Project Road Name: Archibald Av. Road Segment: s/o Limonite Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 30,641 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,064 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.68% Medium Trucks: 69.1% 10.3% 20.5% 6.40% Heavy Trucks: 72.8% 7.3% 19.8% 1.92%			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.19	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-9.37	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-14.59	-1.84	-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:	69.3	66.8	66.7	62.1	69.6	70.2	
Medium Trucks:	68.6	66.2	64.0	62.2	69.3	69.7	
Heavy Trucks:	67.7	65.6	61.6	61.2	68.4	68.6	
Vehicle Noise:	73.4	71.0	69.4	66.6	73.9	74.3	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			138	298	642	1,383	
CNEL:			147	317	682	1,470	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing + Project Road Name: Archibald Av. Road Segment: s/o 65th St.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 33,469 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,347 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.58% Medium Trucks: 69.1% 10.3% 20.5% 6.48% Heavy Trucks: 72.8% 7.3% 19.8% 1.94%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 2.57 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -8.94 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -14.16 -1.84 -1.20 -5.25 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 69.7 67.2 67.1 62.5 70.0 70.5 Medium Trucks: 69.0 66.6 64.4 62.6 69.8 70.1 Heavy Trucks: 68.2 66.0 62.1 61.6 68.8 69.1 Vehicle Noise: 73.8 71.4 69.8 67.0 74.3 74.7				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 147 318 684 1,474 CNEL: 157 337 727 1,566				FWHA Noise Model Calculations			
				VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 1.95 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -9.51 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -14.74 -1.84 -1.20 -5.25 0.000 0.000			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing + Project Road Name: Archibald Av. Road Segment: s/o Schleisman Rd.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 29,019 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,902 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.50% Medium Trucks: 69.1% 10.3% 20.5% 6.54% Heavy Trucks: 72.8% 7.3% 19.8% 1.96%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 2.57 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -8.94 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -14.16 -1.84 -1.20 -5.25 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 69.1 66.5 66.5 61.9 69.3 69.9 Medium Trucks: 68.4 66.1 63.8 62.0 69.2 69.5 Heavy Trucks: 67.6 65.4 61.5 61.0 68.2 68.5 Vehicle Noise: 73.2 70.8 69.2 66.4 73.7 74.1				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 135 290 625 1,346 CNEL: 143 308 663 1,429				FWHA Noise Model Calculations			
				VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 1.95 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -9.51 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -14.74 -1.84 -1.20 -5.25 0.000 0.000			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing + Project Road Name: Ontario Ranch Rd. Road Segment: e/o Archibald Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 20,236 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,024 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 115 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.48% Medium Trucks: 69.1% 10.3% 20.5% 6.55% Heavy Trucks: 72.8% 7.3% 19.8% 1.97%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 0.38 -0.82 -1.20 -4.74 0.000 0.000 Medium Trucks: 81.00 -11.07 -0.81 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -16.30 -0.81 -1.20 -5.23 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 68.6 66.0 66.0 61.3 68.8 69.4 Medium Trucks: 67.9 65.5 63.3 61.5 68.7 69.0 Heavy Trucks: 67.1 64.9 61.0 60.5 67.7 68.0 Vehicle Noise: 72.7 70.3 68.6 65.9 73.2 73.6				Lane Equivalent Distance (in feet)			
				Autos: 55.846 Medium Trucks: 55.687 Heavy Trucks: 55.703			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 131 281 606 1,306 CNEL: 139 299 644 1,388				FWHA Noise Model Calculations			
				VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 -1.75 1.28 -1.20 -4.61 0.000 0.000 Medium Trucks: 81.00 -13.22 1.31 -1.20 -4.87 0.000 0.000 Heavy Trucks: 85.38 -18.14 1.31 -1.20 -5.50 0.000 0.000			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing + Project Road Name: Merrill Av. Road Segment: w/o Grove Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 12,418 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 1,242 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.40% Medium Trucks: 69.1% 10.3% 20.5% 6.50% Heavy Trucks: 72.8% 7.3% 19.8% 2.10%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 0.38 -0.82 -1.20 -4.74 0.000 0.000 Medium Trucks: 81.00 -11.07 -0.81 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -16.30 -0.81 -1.20 -5.23 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 68.5 66.0 65.9 61.3 68.8 69.3 Medium Trucks: 67.9 65.5 63.3 61.5 68.6 69.0 Heavy Trucks: 67.3 65.2 61.2 60.8 68.0 68.2 Vehicle Noise: 72.7 70.3 68.7 66.0 73.3 73.6				Lane Equivalent Distance (in feet)			
				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 72 156 336 725 CNEL: 77 166 357 770				FWHA Noise Model Calculations			
				VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 -1.75 1.28 -1.20 -4.61 0.000 0.000 Medium Trucks: 81.00 -13.22 1.31 -1.20 -4.87 0.000 0.000 Heavy Trucks: 85.38 -18.14 1.31 -1.20 -5.50 0.000 0.000			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing + Project Road Name: Merrill Av. Road Segment: w/o Flight Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 13,827 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 1,383 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.56% Medium Trucks: 69.1% 10.3% 20.5% 6.39% Heavy Trucks: 72.8% 7.3% 19.8% 2.05%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 -1.27 1.28 -1.20 -4.61 0.000 0.000 Medium Trucks: 81.00 -12.83 1.31 -1.20 -4.87 0.000 0.000 Heavy Trucks: 85.38 -17.77 1.31 -1.20 -5.50 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 69.0 66.4 66.4 61.8 69.2 69.8 Medium Trucks: 68.3 65.9 63.6 61.9 69.0 69.4 Heavy Trucks: 67.7 65.5 61.6 61.1 68.4 68.6 Vehicle Noise: 73.1 70.7 69.1 66.4 73.7 74.1				Lane Equivalent Distance (in feet)			
				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262			
Centerline Distance to Noise Contour (in feet) Ldn: 77 166 358 772 CNEL: 82 177 381 820				70 dBA			
				65 dBA			
Ldn: 77 166 358 772 CNEL: 82 177 381 820				60 dBA			
				55 dBA			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing + Project Road Name: Merrill Av. Road Segment: e/o Hellman Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 14,383 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 1,438 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.83% Medium Trucks: 69.1% 10.3% 20.5% 6.19% Heavy Trucks: 72.8% 7.3% 19.8% 1.98%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 -1.09 1.28 -1.20 -4.61 0.000 0.000 Medium Trucks: 81.00 -12.80 1.31 -1.20 -4.87 0.000 0.000 Heavy Trucks: 85.38 -17.75 1.31 -1.20 -5.50 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 69.2 66.6 66.6 62.0 69.4 70.0 Medium Trucks: 68.3 65.9 63.7 61.9 69.1 69.4 Heavy Trucks: 67.7 65.6 61.6 61.2 68.4 68.6 Vehicle Noise: 73.2 70.8 69.2 66.5 73.8 74.1				Lane Equivalent Distance (in feet)			
				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262			
Centerline Distance to Noise Contour (in feet) Ldn: 78 169 363 783 CNEL: 83 179 386 831				70 dBA			
				65 dBA			
Ldn: 78 169 363 783 CNEL: 83 179 386 831				60 dBA			
				55 dBA			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing + Project Road Name: Merrill Av. Road Segment: e/o Archibald Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 3,869 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 387 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.93% Medium Trucks: 69.1% 10.3% 20.5% 6.20% Heavy Trucks: 72.8% 7.3% 19.8% 1.86%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 68.46 -6.33 1.28 -1.20 -4.61 0.000 0.000 Medium Trucks: 79.45 -18.03 1.31 -1.20 -4.87 0.000 0.000 Heavy Trucks: 84.25 -23.26 1.31 -1.20 -5.50 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 62.2 59.6 59.6 55.0 62.4 63.0 Medium Trucks: 61.5 59.1 56.9 55.1 62.3 62.6 Heavy Trucks: 61.1 58.9 55.0 54.5 61.7 62.0 Vehicle Noise: 66.4 64.0 62.3 59.7 66.9 67.3				Lane Equivalent Distance (in feet)			
				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262			
Centerline Distance to Noise Contour (in feet) Ldn: 27 59 128 275 CNEL: 29 63 136 292				70 dBA			
				65 dBA			
Ldn: 27 59 128 275 CNEL: 29 63 136 292				60 dBA			
				55 dBA			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing + Project Road Name: Kimball Av. Road Segment: w/o Hellman Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 17,445 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 1,745 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 51 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 49.0 feet Centerline Dist. to Observer: 49.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.57% Medium Trucks: 69.1% 10.3% 20.5% 6.48% Heavy Trucks: 72.8% 7.3% 19.8% 1.95%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 -0.26 1.01 -1.20 -4.64 0.000 0.000 Medium Trucks: 81.00 -11.76 1.04 -1.20 -4.87 0.000 0.000 Heavy Trucks: 85.38 -16.98 1.04 -1.20 -5.44 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 69.8 67.2 67.2 62.5 70.0 70.6 Medium Trucks: 69.1 66.7 64.4 62.7 69.8 70.2 Heavy Trucks: 68.2 66.1 62.1 61.7 68.9 69.1 Vehicle Noise: 73.8 71.4 69.8 67.1 74.4 74.8				Lane Equivalent Distance (in feet)			
				Autos: 42.140 Medium Trucks: 41.929 Heavy Trucks: 41.950			
Centerline Distance to Noise Contour (in feet) Ldn: 96 206 445 958 CNEL: 102 219 472 1,018				70 dBA			
				65 dBA			
Ldn: 96 206 445 958 CNEL: 102 219 472 1,018				60 dBA			
				55 dBA			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing + Project Road Name: Limonite Av. Road Segment: e/o Hellman Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 795 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 80 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
				Vehicle Mix			
				Autos: 66.4% 16.5% 17.1% 99.99% Medium Trucks: 69.1% 10.3% 20.5% 0.01% Heavy Trucks: 72.8% 7.3% 19.8% 0.00%			
Site Data				Noise Source Elevations (in feet)			
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 0,000 Medium Trucks: 2,297 Heavy Trucks: 8,004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 65,422 Medium Trucks: 65,286 Heavy Trucks: 65,299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-13.29	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-54.06	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-59.28	-1.84	-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:	53.9	51.3	51.3	46.6	54.1	54.7	
Medium Trucks:	23.9	21.5	19.3	17.5	24.6	25.0	
Heavy Trucks:	23.1	20.9	16.9	16.5	23.7	23.9	
Vehicle Noise:	53.9	51.3	51.3	46.6	54.1	54.7	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				7	14	31	66
CNEL:				7	16	34	72

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing + Project Road Name: Limonite Av. Road Segment: e/o Archibald Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 24,098 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,410 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
				Vehicle Mix			
				Autos: 66.4% 16.5% 17.1% 91.90% Medium Trucks: 69.1% 10.3% 20.5% 6.11% Heavy Trucks: 72.8% 7.3% 19.8% 1.99%			
Site Data				Noise Source Elevations (in feet)			
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 0,000 Medium Trucks: 2,297 Heavy Trucks: 8,004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 65,422 Medium Trucks: 65,286 Heavy Trucks: 65,299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.16	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-10.61	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-15.49	-1.84	-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:	68.3	65.7	65.7	61.1	68.5	69.1	
Medium Trucks:	67.3	65.0	62.7	60.9	68.1	68.4	
Heavy Trucks:	66.8	64.7	60.7	60.3	67.5	67.7	
Vehicle Noise:	72.3	69.9	68.3	65.6	72.8	73.2	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				117	253	545	1,175
CNEL:				125	269	579	1,248

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing + Project Road Name: Limonite Av. Road Segment: e/o Harrison Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 28,353 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,835 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
				Vehicle Mix			
				Autos: 66.4% 16.5% 17.1% 91.77% Medium Trucks: 69.1% 10.3% 20.5% 6.23% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
Site Data				Noise Source Elevations (in feet)			
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 0,000 Medium Trucks: 2,297 Heavy Trucks: 8,004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 65,422 Medium Trucks: 65,286 Heavy Trucks: 65,299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.86	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-9.83	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-14.76	-1.84	-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:	69.0	66.4	66.4	61.8	69.2	70.1	
Medium Trucks:	68.1	65.7	63.5	61.7	68.9	69.2	
Heavy Trucks:	67.6	65.4	61.5	61.0	68.2	68.5	
Vehicle Noise:	73.0	70.7	69.0	66.3	73.6	74.0	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				132	283	611	1,316
CNEL:				140	301	649	1,398

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: Existing + Project Road Name: Limonite Av. Road Segment: e/o Sumner Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 29,983 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,998 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
				Vehicle Mix			
				Autos: 66.4% 16.5% 17.1% 91.71% Medium Trucks: 69.1% 10.3% 20.5% 6.28% Heavy Trucks: 72.8% 7.3% 19.8% 2.01%			
Site Data				Noise Source Elevations (in feet)			
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 0,000 Medium Trucks: 2,297 Heavy Trucks: 8,004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 65,422 Medium Trucks: 65,286 Heavy Trucks: 65,299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.10	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-9.55	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-14.50	-1.84	-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:	69.2	66.7	66.6	62.0	69.5	70.1	
Medium Trucks:	68.4	66.0	63.8	62.0	69.2	69.5	
Heavy Trucks:	67.8	65.7	61.7	61.3	68.5	68.7	
Vehicle Noise:	73.3	70.9	69.3	66.6	73.8	74.2	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				137	295	635	1,369
CNEL:				145	313	675	1,454

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL																			
Scenario: Existing + Project Road Name: Limonite Av. Road Segment: e/o Scholar Wy.				Project Name: The Merge Job Number: 11180															
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS															
Highway Data				Site Conditions (Hard = 10, Soft = 15)															
Average Daily Traffic (Adt): 32,677 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,268 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15															
Site Data				Vehicle Mix															
				VehicleType	Day	Evening	Night	Daily											
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.63% Medium Trucks: 69.1% 10.3% 20.5% 6.35% Heavy Trucks: 72.8% 7.3% 19.8% 2.02%															
FHWA Noise Model Calculations				Noise Source Elevations (in feet)															
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0															
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)															
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299															
VehicleType				REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten									
Autos:				70.20	2.47	-1.85	-1.20	-4.73	0.000	0.000									
Medium Trucks:				81.00	-9.12	-1.84	-1.20	-4.88	0.000	0.000									
Heavy Trucks:				85.38	-14.10	-1.84	-1.20	-5.25	0.000	0.000									
Leq Peak Hour				Leq Day	Leq Evening	Leq Night	Ldn	CNEL											
Autos:				69.6	67.0	67.0	62.4	69.9	70.4										
Medium Trucks:				68.8	66.4	64.2	62.4	69.6	69.9										
Heavy Trucks:				68.2	66.1	62.1	61.7	68.9	69.1										
Vehicle Noise:				73.7	71.3	69.7	66.9	74.2	74.6										
Centerline Distance to Noise Contour (in feet)				70 dBA				65 dBA				60 dBA				55 dBA			
Ldn:				145				313				675				1,455			
CNEL:				155				333				717				1,546			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL																			
Scenario: Existing + Project Road Name: Limonite Av. Road Segment: e/o Hamner Av.				Project Name: The Merge Job Number: 11180															
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS															
Highway Data				Site Conditions (Hard = 10, Soft = 15)															
Average Daily Traffic (Adt): 46,768 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,677 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15															
Site Data				Vehicle Mix															
				VehicleType	Day	Evening	Night	Daily											
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.47% Medium Trucks: 69.1% 10.3% 20.5% 6.50% Heavy Trucks: 72.8% 7.3% 19.8% 2.03%															
FHWA Noise Model Calculations				Noise Source Elevations (in feet)															
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0															
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)															
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299															
VehicleType				REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten									
Autos:				68.46	4.47	-1.85	-1.20	-4.73	0.000	0.000									
Medium Trucks:				79.45	-7.01	-1.84	-1.20	-4.88	0.000	0.000									
Heavy Trucks:				84.25	-12.06	-1.84	-1.20	-5.25	0.000	0.000									
Leq Peak Hour				Leq Day	Leq Evening	Leq Night	Ldn	CNEL											
Autos:				69.9	67.3	67.3	62.7	70.1	70.7										
Medium Trucks:				69.4	67.0	64.8	63.0	70.1	70.5										
Heavy Trucks:				69.1	67.0	63.0	62.6	69.8	70.0										
Vehicle Noise:				74.3	71.9	70.2	67.5	74.8	75.2										
Centerline Distance to Noise Contour (in feet)				70 dBA				65 dBA				60 dBA				55 dBA			
Ldn:				159				342				736				1,587			
CNEL:				168				363				781				1,683			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL																			
Scenario: OY 2021 Without Project Road Name: Grove Av. Road Segment: n/o Merrill Av.				Project Name: The Merge Job Number: 11180															
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS															
Highway Data				Site Conditions (Hard = 10, Soft = 15)															
Average Daily Traffic (Adt): 10,387 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 1,039 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 60 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15															
Site Data				Vehicle Mix															
				VehicleType	Day	Evening	Night	Daily											
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%															
FHWA Noise Model Calculations				Noise Source Elevations (in feet)															
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0															
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)															
				Autos: 40.311 Medium Trucks: 40.091 Heavy Trucks: 40.113															
VehicleType				REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten									
Autos:				70.20	-2.52	1.30	-1.20	-4.65	0.000	0.000									
Medium Trucks:				81.00	-13.90	1.34	-1.20	-4.87	0.000	0.000									
Heavy Trucks:				85.38	-19.12	1.33	-1.20	-5.43	0.000	0.000									
Leq Peak Hour				Leq Day	Leq Evening	Leq Night	Ldn	CNEL											
Autos:				67.8	65.2	65.2	60.6	68.0	68.6										
Medium Trucks:				67.2	64.8	62.6	60.8	68.0	68.3										
Heavy Trucks:				66.4	64.2	60.3	59.8	67.0	67.3										
Vehicle Noise:				71.9	69.6	67.9	65.2	72.5	72.9										
Centerline Distance to Noise Contour (in feet)				70 dBA				65 dBA				60 dBA				55 dBA			
Ldn:				73				158				339				731			
CNEL:				78				167				360				777			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL																			
Scenario: OY 2021 Without Project Road Name: Hellman Av. Road Segment: n/o Merrill Av.				Project Name: The Merge Job Number: 11180															
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS															
Highway Data				Site Conditions (Hard = 10, Soft = 15)															
Average Daily Traffic (Adt): 2,952 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 295 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15															
Site Data				Vehicle Mix															
				VehicleType	Day	Evening	Night	Daily											
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%															
FHWA Noise Model Calculations				Noise Source Elevations (in feet)															
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0															
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)															
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644															
VehicleType				REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten									
Autos:				70.20	-7.99	-1.05	-1.20	-4.73	0.000	0.000									
Medium Trucks:				81.00	-19.36	-1.03	-1.20	-4.88	0.000	0.000									
Heavy Trucks:				85.38	-24.58	-1.03	-1.20	-5.25	0.000	0.000									
Leq Peak Hour				Leq Day	Leq Evening	Leq Night	Ldn	CNEL											
Autos:				60.0	57.4	57.4	52.8	60.2	60.8										
Medium Trucks:				59.4	57.0	54.8	53.0	60.2	60.5										
Heavy Trucks:				58.6	56.4	52.5	52.0	59.2	59.5										
Vehicle Noise:				64.1	61.7	60.1	57.4	64.7	65.0										
Centerline Distance to Noise Contour (in feet)				70 dBA				65 dBA				60 dBA				55 dBA			
Ldn:				33				70				151				326			
CNEL:				35				75				161				346			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 Without Project Road Name: Hellman Av. Road Segment: s/o Kimball Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 21,309 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,131 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 51 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 49.0 feet Centerline Dist. to Observer: 49.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
Noise Source Elevations (in feet) Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0				Lane Equivalent Distance (in feet)			
				Autos: 42.140 Medium Trucks: 41.929 Heavy Trucks: 41.950			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.05	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-10.32	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-15.54	1.04	-1.20	-5.44	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.3	66.8	66.7	62.1	69.6	70.1	
Medium Trucks:	69.0	66.6	64.3	62.6	69.7	70.0	
Heavy Trucks:	68.6	66.4	62.4	62.0	69.2	69.4	
Vehicle Noise:	73.7	71.3	69.6	67.0	74.3	74.7	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				94	203	438	944
CNEL:				100	216	465	1,002

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 Without Project Road Name: Archibald Av. Road Segment: n/o Riverside Dr.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 48,043 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,804 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
Noise Source Elevations (in feet) Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.13	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-7.24	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.47	-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:	72.1	69.5	69.5	64.9	72.3	72.9	
Medium Trucks:	71.5	69.1	66.9	65.1	72.3	72.6	
Heavy Trucks:	70.7	68.5	64.6	64.1	71.3	71.6	
Vehicle Noise:	76.2	73.8	72.2	69.5	76.8	77.2	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				209	451	971	2,092
CNEL:				222	479	1,031	2,222

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 Without Project Road Name: Archibald Av. Road Segment: s/o Riverside Dr.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 46,540 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,654 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
Noise Source Elevations (in feet) Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.58	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-7.80	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.02	-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:	73.1	70.5	70.5	65.9	73.4	73.9	
Medium Trucks:	72.4	70.0	67.7	66.0	73.1	73.5	
Heavy Trucks:	71.1	69.0	65.0	64.6	71.8	72.0	
Vehicle Noise:	77.1	74.7	73.1	70.3	77.6	78.0	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				237	510	1,100	2,369
CNEL:				252	543	1,169	2,519

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 Without Project Road Name: Archibald Av. Road Segment: s/o Chino Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 42,194 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,219 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
Noise Source Elevations (in feet) Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.15	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-8.22	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.45	-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:	72.7	70.1	70.1	65.5	72.9	73.5	
Medium Trucks:	72.0	69.6	67.3	65.5	72.7	73.0	
Heavy Trucks:	70.7	68.6	64.6	64.2	71.4	71.6	
Vehicle Noise:	76.6	74.2	72.7	69.9	77.2	77.6	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				222	478	1,030	2,219
CNEL:				236	508	1,095	2,359

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL									
Scenario: OY 2021 Without Project Road Name: Archibald Av. Road Segment: s/o Schaefer Av.					Project Name: The Merge Job Number: 11180				
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS						
Highway Data			Site Conditions (Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 42,064 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,206 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15						
Site Data			Vehicle Mix						
			VehicleType	Day	Evening	Night	Daily		
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%						
FHWA Noise Model Calculations			Noise Source Elevations (in feet)						
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0						
Unmitigated Noise Levels (without Topo and barrier attenuation)			Lane Equivalent Distance (in feet)						
			Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644						
Centerline Distance to Noise Contour (in feet)			70 dBA 65 dBA 60 dBA 55 dBA						
			Ldn: 221 477 1,028 2,215 CNEL: 235 507 1,093 2,354						

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL									
Scenario: OY 2021 Without Project Road Name: Archibald Av. Road Segment: s/o Ontario Ranch Rd.					Project Name: The Merge Job Number: 11180				
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS						
Highway Data			Site Conditions (Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 53,171 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,317 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15						
Site Data			Vehicle Mix						
			VehicleType	Day	Evening	Night	Daily		
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%						
FHWA Noise Model Calculations			Noise Source Elevations (in feet)						
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0						
Unmitigated Noise Levels (without Topo and barrier attenuation)			Lane Equivalent Distance (in feet)						
			Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644						
Centerline Distance to Noise Contour (in feet)			70 dBA 65 dBA 60 dBA 55 dBA						
			Ldn: 259 558 1,202 2,589 CNEL: 275 593 1,278 2,753						

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL									
Scenario: OY 2021 Without Project Road Name: Archibald Av. Road Segment: s/o Eucalyptus Av.					Project Name: The Merge Job Number: 11180				
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS						
Highway Data			Site Conditions (Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 53,530 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,353 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15						
Site Data			Vehicle Mix						
			VehicleType	Day	Evening	Night	Daily		
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%						
FHWA Noise Model Calculations			Noise Source Elevations (in feet)						
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0						
Unmitigated Noise Levels (without Topo and barrier attenuation)			Lane Equivalent Distance (in feet)						
			Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644						
Centerline Distance to Noise Contour (in feet)			70 dBA 65 dBA 60 dBA 55 dBA						
			Ldn: 260 560 1,207 2,601 CNEL: 276 596 1,283 2,765						

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL									
Scenario: OY 2021 Without Project Road Name: Archibald Av. Road Segment: s/o Merrill Av.					Project Name: The Merge Job Number: 11180				
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS						
Highway Data			Site Conditions (Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 55,894 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,589 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15						
Site Data			Vehicle Mix						
			VehicleType	Day	Evening	Night	Daily		
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%						
FHWA Noise Model Calculations			Noise Source Elevations (in feet)						
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0						
Unmitigated Noise Levels (without Topo and barrier attenuation)			Lane Equivalent Distance (in feet)						
			Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644						
Centerline Distance to Noise Contour (in feet)			70 dBA 65 dBA 60 dBA 55 dBA						
			Ldn: 285 613 1,321 2,846 CNEL: 285 613 1,321 2,846						

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 Without Project Road Name: Archibald Av. Road Segment: s/o Limonite Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 47,823 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,782 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
FHWA Noise Model Calculations				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.11	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-7.26	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.49	-1.84	-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:	71.3	68.7	68.7	64.0	71.5	72.1	
Medium Trucks:	70.7	68.3	66.1	64.3	71.4	71.8	
Heavy Trucks:	69.8	67.7	63.7	63.3	70.5	70.7	
Vehicle Noise:	75.4	73.0	71.4	68.7	75.9	76.3	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				189	407	878	1,891
CNEL:				201	433	932	2,009

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 Without Project Road Name: Archibald Av. Road Segment: s/o 65th St.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 48,923 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,892 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
FHWA Noise Model Calculations				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.21	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-7.17	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.39	-1.84	-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:	71.4	68.8	68.8	64.1	71.6	72.2	
Medium Trucks:	70.8	68.4	66.2	64.4	71.5	71.9	
Heavy Trucks:	69.9	67.8	63.8	63.4	70.6	70.8	
Vehicle Noise:	75.5	73.1	71.5	68.8	76.0	76.4	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				192	414	891	1,920
CNEL:				204	439	947	2,040

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 Without Project Road Name: Archibald Av. Road Segment: s/o Schleisman Rd.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 38,745 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,875 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
FHWA Noise Model Calculations				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.19	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-8.18	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-13.40	-1.84	-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:	70.3	67.8	67.7	63.1	70.6	71.2	
Medium Trucks:	69.8	67.4	65.1	63.4	70.5	70.9	
Heavy Trucks:	68.9	66.8	62.8	62.4	69.6	69.8	
Vehicle Noise:	74.5	72.1	70.5	67.7	75.0	75.4	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				164	354	763	1,644
CNEL:				175	376	810	1,746

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 Without Project Road Name: Ontario Ranch Rd. Road Segment: e/o Archibald Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 30,803 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,080 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 115 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
FHWA Noise Model Calculations				Lane Equivalent Distance (in feet)			
				Autos: 55.846 Medium Trucks: 55.687 Heavy Trucks: 55.703			
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.20	-0.82	-1.20	-4.74	0.000	0.000
Medium Trucks:	81.00	-9.17	-0.81	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-14.40	-0.81	-1.20	-5.23	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.4	67.8	67.8	63.2	70.6	71.2	
Medium Trucks:	69.8	67.4	65.2	63.4	70.6	70.9	
Heavy Trucks:	69.0	66.8	62.9	62.4	69.6	69.9	
Vehicle Noise:	74.5	72.1	70.5	67.8	75.1	75.5	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				174	375	808	1,740
CNEL:				185	398	858	1,848

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 Without Project Road Name: Merrill Av. Road Segment: w/o Grove Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 23,165 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,317 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0,000 Medium Trucks: 2,297 Heavy Trucks: 8,004 Grade Adjustment: 0.0			
FHWA Noise Model Calculations				Lane Equivalent Distance (in feet)			
				Autos: 40,460 Medium Trucks: 40,241 Heavy Trucks: 40,262			
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.96	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.41	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.64	1.31	-1.20	-5.50	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:	71.2	68.7	68.6	64.0	71.5	72.1	
Medium Trucks:	70.7	68.3	66.1	64.3	71.4	71.8	
Heavy Trucks:	69.8	67.7	63.7	63.3	70.5	70.7	
Vehicle Noise:	75.4	73.0	71.4	68.7	75.9	76.3	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				109	236	508	1,094
CNEL:				116	250	539	1,162

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 Without Project Road Name: Merrill Av. Road Segment: w/o Flight Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 25,931 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,593 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0,000 Medium Trucks: 2,297 Heavy Trucks: 8,004 Grade Adjustment: 0.0			
FHWA Noise Model Calculations				Lane Equivalent Distance (in feet)			
				Autos: 40,460 Medium Trucks: 40,241 Heavy Trucks: 40,262			
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.45	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-9.92	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.15	1.31	-1.20	-5.50	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.7	69.2	69.1	64.5	72.0	72.5	
Medium Trucks:	71.2	68.8	66.6	64.8	71.9	72.3	
Heavy Trucks:	70.3	68.2	64.2	63.8	71.0	71.2	
Vehicle Noise:	75.9	73.5	71.9	69.1	76.4	76.8	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				118	254	548	1,180
CNEL:				125	270	582	1,253

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 Without Project Road Name: Merrill Av. Road Segment: e/o Hellman Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 25,444 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,544 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0,000 Medium Trucks: 2,297 Heavy Trucks: 8,004 Grade Adjustment: 0.0			
FHWA Noise Model Calculations				Lane Equivalent Distance (in feet)			
				Autos: 40,460 Medium Trucks: 40,241 Heavy Trucks: 40,262			
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.37	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.00	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.23	1.31	-1.20	-5.50	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.6	69.1	69.0	64.4	71.9	72.5	
Medium Trucks:	71.1	68.7	66.5	64.7	71.9	72.2	
Heavy Trucks:	70.3	68.1	64.1	63.7	70.9	71.1	
Vehicle Noise:	75.8	73.4	71.8	69.1	76.3	76.7	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				116	251	541	1,165
CNEL:				124	267	574	1,237

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 Without Project Road Name: Merrill Av. Road Segment: e/o Archibald Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 7,959 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 796 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0,000 Medium Trucks: 2,297 Heavy Trucks: 8,004 Grade Adjustment: 0.0			
FHWA Noise Model Calculations				Lane Equivalent Distance (in feet)			
				Autos: 40,460 Medium Trucks: 40,241 Heavy Trucks: 40,262			
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.22	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	79.45	-14.59	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-19.82	1.31	-1.20	-5.50	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:	65.3	62.7	62.7	58.1	65.6	66.1	
Medium Trucks:	65.0	62.6	60.3	58.6	65.7	66.0	
Heavy Trucks:	64.5	62.4	58.4	58.0	65.2	65.4	
Vehicle Noise:	69.7	67.3	65.6	63.0	70.3	70.6	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				46	99	213	458
CNEL:				49	105	226	486

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 Without Project Road Name: Kimball Av. Road Segment: w/o Hellman Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 22,454 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,245 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 51 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 49.0 feet Centerline Dist. to Observer: 49.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
FHWA Noise Model Calculations				Lane Equivalent Distance (in feet)			
				Autos: 42.140 Medium Trucks: 41.929 Heavy Trucks: 41.950			
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.82	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-10.55	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.77	1.04	-1.20	-5.44	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.8	68.3	68.2	63.6	71.1	71.7	
Medium Trucks:	70.3	67.9	65.7	63.9	71.0	71.4	
Heavy Trucks:	69.4	67.3	63.3	62.9	70.1	70.3	
Vehicle Noise:	75.0	72.6	71.0	68.3	75.5	75.9	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				115	247	532	1,146
CNEL:				122	262	565	1,217

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 Without Project Road Name: Limonite Av. Road Segment: e/o Hellman Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 392 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 39 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
FHWA Noise Model Calculations				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-16.76	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-28.13	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-33.35	-1.84	-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:	50.4	47.8	47.8	43.2	50.6	51.2	
Medium Trucks:	49.8	47.4	45.2	43.4	50.6	50.9	
Heavy Trucks:	49.0	46.8	42.9	42.4	49.6	49.9	
Vehicle Noise:	54.5	52.2	50.5	47.8	55.1	55.5	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				8	17	36	77
CNEL:				8	18	38	82

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 Without Project Road Name: Limonite Av. Road Segment: e/o Archibald Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 36,787 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,679 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
FHWA Noise Model Calculations				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.97	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-8.40	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-13.63	-1.84	-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:	70.1	67.6	67.5	62.9	70.4	70.9	
Medium Trucks:	69.6	67.2	64.9	63.1	70.3	70.6	
Heavy Trucks:	68.7	66.5	62.6	62.1	69.4	69.6	
Vehicle Noise:	74.3	71.9	70.2	67.5	74.8	75.2	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				159	342	737	1,588
CNEL:				169	363	783	1,686

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 Without Project Road Name: Limonite Av. Road Segment: e/o Harrison Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 45,012 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,501 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
FHWA Noise Model Calculations				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.84	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-7.53	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.75	-1.84	-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:	71.0	68.4	68.4	63.8	71.2	71.8	
Medium Trucks:	70.4	68.0	65.8	64.0	71.2	71.5	
Heavy Trucks:	69.6	67.4	63.5	63.0	70.2	70.5	
Vehicle Noise:	75.1	72.8	71.1	68.4	75.7	76.1	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				182	391	843	1,817
CNEL:				193	416	896	1,929

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 Without Project Road Name: Limonite Av. Road Segment: e/o Sumner Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 47,707 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,771 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
FHWA Noise Model Calculations				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.10	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-7.27	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.50	-1.84	-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:	71.2	68.7	68.6	64.0	71.5	72.1	
Medium Trucks:	70.7	68.3	66.0	64.3	71.4	71.8	
Heavy Trucks:	69.8	67.7	63.7	63.3	70.5	70.7	
Vehicle Noise:	75.4	73.0	71.4	68.6	75.9	76.3	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				189	407	876	1,888
CNEL:				201	432	931	2,006

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 Without Project Road Name: Limonite Av. Road Segment: e/o Scholar Wy.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 50,086 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,009 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
FHWA Noise Model Calculations				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.31	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-7.06	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.29	-1.84	-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:	71.5	68.9	68.9	64.2	71.7	72.3	
Medium Trucks:	70.9	68.5	66.3	64.5	71.6	72.0	
Heavy Trucks:	70.0	67.9	63.9	63.5	70.7	70.9	
Vehicle Noise:	75.6	73.2	71.6	68.9	76.1	76.5	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				195	420	905	1,951
CNEL:				207	446	962	2,072

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 Without Project Road Name: Limonite Av. Road Segment: e/o Hamner Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 64,961 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 6,496 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
FHWA Noise Model Calculations				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	5.90	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-5.48	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.70	-1.84	-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:	71.3	68.7	68.7	64.1	71.5	72.1	
Medium Trucks:	70.9	68.5	66.3	64.5	71.7	72.0	
Heavy Trucks:	70.5	68.3	64.4	63.9	71.2	71.4	
Vehicle Noise:	75.7	73.3	71.6	69.0	76.2	76.6	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				198	426	919	1,979
CNEL:				210	452	975	2,100

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 With Project Road Name: Grove Av. Road Segment: n/o Merrill Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 10,652 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 1,065 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 60 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.56% Medium Trucks: 69.1% 10.3% 20.5% 6.49% Heavy Trucks: 72.8% 7.3% 19.8% 1.95%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
FHWA Noise Model Calculations				Lane Equivalent Distance (in feet)			
				Autos: 40.311 Medium Trucks: 40.091 Heavy Trucks: 40.113			
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.40	1.30	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-13.90	1.34	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-19.12	1.33	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.9	65.3	65.3	60.7	68.1	68.7	
Medium Trucks:	67.2	64.8	62.6	60.8	68.0	68.3	
Heavy Trucks:	66.4	64.2	60.3	59.8	67.0	67.3	
Vehicle Noise:	72.0	69.6	68.0	65.2	72.5	72.9	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				74	159	342	736
CNEL:				78	168	363	782

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 With Project Road Name: Hellman Av. Road Segment: n/o Merrill Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 3,283 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 328 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 92.21% Medium Trucks: 69.1% 10.3% 20.5% 5.99% Heavy Trucks: 72.8% 7.3% 19.8% 1.80%			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-7.48	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-19.36	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-24.58	-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:	60.5	57.9	57.9	53.3	60.7	61.3	
Medium Trucks:	59.4	57.0	54.8	53.0	60.2	60.5	
Heavy Trucks:	58.6	56.4	52.5	52.0	59.2	59.5	
Vehicle Noise:	64.3	61.9	60.4	57.6	64.8	65.2	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				34	72	156	335
CNEL:				36	77	165	357

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 With Project Road Name: Hellman Av. Road Segment: s/o Kimball Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 21,640 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,164 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 51 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 49.0 feet Centerline Dist. to Observer: 49.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.47% Medium Trucks: 69.1% 10.3% 20.5% 6.56% Heavy Trucks: 72.8% 7.3% 19.8% 1.97%			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 49.0 feet Centerline Dist. to Observer: 49.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 49.0 feet Centerline Dist. to Observer: 49.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Lane Equivalent Distance (in feet)			
				Autos: 42.140 Medium Trucks: 41.929 Heavy Trucks: 41.950			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.13	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-10.32	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-15.54	1.04	-1.20	-5.44	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.4	66.8	66.8	62.2	69.6	70.2	
Medium Trucks:	69.0	66.6	64.3	62.6	69.7	70.0	
Heavy Trucks:	68.6	66.4	62.4	62.0	69.2	69.4	
Vehicle Noise:	73.8	71.4	69.7	67.0	74.3	74.7	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				95	204	440	948
CNEL:				101	217	467	1,006

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 With Project Road Name: Archibald Av. Road Segment: n/o Riverside Dr.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 48,355 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,835 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.30% Medium Trucks: 69.1% 10.3% 20.5% 6.63% Heavy Trucks: 72.8% 7.3% 19.8% 2.07%			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.15	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-7.23	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.30	-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:	72.1	69.5	69.5	64.9	72.4	72.9	
Medium Trucks:	71.5	69.1	66.9	65.1	72.3	72.6	
Heavy Trucks:	70.9	68.7	64.7	64.3	71.5	71.7	
Vehicle Noise:	76.3	73.9	72.3	69.6	76.8	77.2	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				211	455	981	2,113
CNEL:				224	483	1,041	2,243

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 With Project Road Name: Archibald Av. Road Segment: s/o Riverside Dr.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 47,117 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,712 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.35% Medium Trucks: 69.1% 10.3% 20.5% 6.60% Heavy Trucks: 72.8% 7.3% 19.8% 2.06%			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.63	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-7.78	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.84	-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:	73.2	70.6	70.6	65.9	73.4	74.0	
Medium Trucks:	72.4	70.0	67.8	66.0	73.1	73.5	
Heavy Trucks:	71.3	69.2	65.2	64.8	72.0	72.2	
Vehicle Noise:	77.1	74.7	73.2	70.4	77.7	78.0	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				240	516	1,112	2,395
CNEL:				255	549	1,182	2,546

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL									
Scenario: OY 2021 With Project Road Name: Archibald Av. Road Segment: s/o Chino Av.					Project Name: The Merge Job Number: 11180				
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS					
Highway Data				Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 42,837 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,284 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
Site Data				Vehicle Mix					
				VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.36% Medium Trucks: 69.1% 10.3% 20.5% 6.58% Heavy Trucks: 72.8% 7.3% 19.8% 2.06%					
				Noise Source Elevations (in feet)					
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0					
				Lane Equivalent Distance (in feet)					
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644					
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	71.78	3.22	-1.05	-1.20	-4.73	0.000	0.000		
Medium Trucks:	82.40	-8.21	-1.03	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	86.40	-13.25	-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:	72.8	70.2	70.2	65.5	73.0	73.6			
Medium Trucks:	72.0	69.6	67.3	65.6	72.7	73.0			
Heavy Trucks:	70.9	68.7	64.8	64.4	71.6	71.8			
Vehicle Noise:	76.7	74.3	72.7	70.0	77.2	77.6			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			225	484	1,043	2,247			
CNEL:			239	515	1,109	2,389			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL									
Scenario: OY 2021 With Project Road Name: Archibald Av. Road Segment: s/o Schaefer Av.					Project Name: The Merge Job Number: 11180				
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS					
Highway Data				Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 42,773 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,277 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
Site Data				Vehicle Mix					
				VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.37% Medium Trucks: 69.1% 10.3% 20.5% 6.57% Heavy Trucks: 72.8% 7.3% 19.8% 2.06%					
				Noise Source Elevations (in feet)					
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0					
				Lane Equivalent Distance (in feet)					
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644					
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	71.78	3.21	-1.05	-1.20	-4.73	0.000	0.000		
Medium Trucks:	82.40	-8.22	-1.03	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	86.40	-13.26	-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:	72.7	70.2	70.1	65.5	73.0	73.6			
Medium Trucks:	72.0	69.6	67.3	65.5	72.7	73.0			
Heavy Trucks:	70.9	68.7	64.8	64.3	71.6	71.8			
Vehicle Noise:	76.7	74.3	72.7	69.9	77.2	77.6			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			224	483	1,041	2,245			
CNEL:			239	514	1,107	2,385			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL									
Scenario: OY 2021 With Project Road Name: Archibald Av. Road Segment: s/o Ontario Ranch Rd.					Project Name: The Merge Job Number: 11180				
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS					
Highway Data				Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 54,343 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,434 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
Site Data				Vehicle Mix					
				VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.44% Medium Trucks: 69.1% 10.3% 20.5% 6.53% Heavy Trucks: 72.8% 7.3% 19.8% 2.03%					
				Noise Source Elevations (in feet)					
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0					
				Lane Equivalent Distance (in feet)					
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644					
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	71.78	4.25	-1.05	-1.20	-4.73	0.000	0.000		
Medium Trucks:	82.40	-7.21	-1.03	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	86.40	-12.29	-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:	73.8	71.2	71.2	66.6	74.0	74.6			
Medium Trucks:	73.0	70.6	68.3	66.6	73.7	74.0			
Heavy Trucks:	71.9	69.7	65.8	65.3	72.5	72.8			
Vehicle Noise:	77.7	75.3	73.8	71.0	78.2	78.6			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			262	565	1,217	2,622			
CNEL:			279	601	1,294	2,788			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL									
Scenario: OY 2021 With Project Road Name: Archibald Av. Road Segment: s/o Eucalyptus Av.					Project Name: The Merge Job Number: 11180				
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS					
Highway Data				Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 54,769 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,477 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
Site Data				Vehicle Mix					
				VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.45% Medium Trucks: 69.1% 10.3% 20.5% 6.52% Heavy Trucks: 72.8% 7.3% 19.8% 2.03%					
				Noise Source Elevations (in feet)					
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0					
				Lane Equivalent Distance (in feet)					
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644					
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	71.78	4.29	-1.05	-1.20	-4.73	0.000	0.000		
Medium Trucks:	82.40	-7.18	-1.03	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	86.40	-12.26	-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:	73.8	71.3	71.2	66.6	74.1	74.6			
Medium Trucks:	73.0	70.6	68.4	66.6	73.7	74.1			
Heavy Trucks:	71.9	69.7	65.8	65.3	72.6	72.8			
Vehicle Noise:	77.8	75.3	73.8	71.0	78.3	78.7			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			263	568	1,223	2,635			
CNEL:			280	603	1,300	2,801			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 With Project Road Name: Archibald Av. Road Segment: s/o Merrill Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 58,480 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,848 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.60% Medium Trucks: 69.1% 10.3% 20.5% 6.39% Heavy Trucks: 72.8% 7.3% 19.8% 2.01%			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.58	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-6.99	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.01	-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:	74.1	71.5	71.5	66.9	74.4	74.9	
Medium Trucks:	82.40	70.8	68.6	66.8	73.9	74.3	
Heavy Trucks:	72.2	70.0	66.0	65.6	72.8	73.0	
Vehicle Noise:	78.0	75.6	74.0	71.2	78.5	78.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			274	589	1,270	2,736	
CNEL:			291	627	1,350	2,909	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 With Project Road Name: Archibald Av. Road Segment: s/o Limestone Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 49,015 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,901 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				Autos: 66.4% 16.5% 17.1% 91.55% Medium Trucks: 69.1% 10.3% 20.5% 6.50% Heavy Trucks: 72.8% 7.3% 19.8% 1.95%			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.22	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-7.26	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.49	-1.84	-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:	71.4	68.8	68.8	64.2	71.6	72.2	
Medium Trucks:	70.7	68.3	66.1	64.3	71.4	71.8	
Heavy Trucks:	69.8	67.7	63.7	63.3	70.5	70.7	
Vehicle Noise:	75.5	73.1	71.4	68.7	76.0	76.4	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			190	410	884	1,904	
CNEL:			202	436	939	2,022	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 With Project Road Name: Archibald Av. Road Segment: s/o 65th St.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 49,850 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,985 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				Autos: 66.4% 16.5% 17.1% 91.50% Medium Trucks: 69.1% 10.3% 20.5% 6.54% Heavy Trucks: 72.8% 7.3% 19.8% 1.96%			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.30	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-7.17	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.39	-1.84	-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:	71.4	68.9	68.8	64.2	71.7	72.3	
Medium Trucks:	70.8	68.4	66.2	64.4	71.5	71.9	
Heavy Trucks:	69.9	67.8	63.8	63.4	70.6	70.8	
Vehicle Noise:	75.5	73.1	71.5	68.8	76.1	76.5	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			193	416	896	1,930	
CNEL:			205	442	952	2,050	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 With Project Road Name: Archibald Av. Road Segment: s/o Schleisman Rd.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 39,275 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,927 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				Autos: 66.4% 16.5% 17.1% 91.46% Medium Trucks: 69.1% 10.3% 20.5% 6.57% Heavy Trucks: 72.8% 7.3% 19.8% 1.97%			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.26	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-8.18	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-13.40	-1.84	-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:	70.4	67.8	67.8	63.2	70.6	71.2	
Medium Trucks:	69.8	67.4	65.1	63.4	70.5	70.9	
Heavy Trucks:	68.9	66.8	62.8	62.4	69.6	69.8	
Vehicle Noise:	74.5	72.1	70.5	67.8	75.0	75.4	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			165	355	766	1,650	
CNEL:			175	378	813	1,752	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 With Project Road Name: Ontario Ranch Rd. Road Segment: e/o Archibald Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 31,134 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,113 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 115 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.43% Medium Trucks: 69.1% 10.3% 20.5% 6.59% Heavy Trucks: 72.8% 7.3% 19.8% 1.98%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 55.846 Medium Trucks: 55.687 Heavy Trucks: 55.703			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.25	-0.82	-1.20	-4.74	0.000	0.000
Medium Trucks:	81.00	-9.17	-0.81	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-14.40	-0.81	-1.20	-5.23	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.4	67.9	67.8	63.2	70.7	71.2	
Medium Trucks:	69.8	67.4	65.2	63.4	70.6	70.9	
Heavy Trucks:	69.0	66.8	62.9	62.4	69.6	69.9	
Vehicle Noise:	74.6	72.2	70.5	67.8	75.1	75.5	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			175	376	810	1,745	
CNEL:			185	399	860	1,854	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 With Project Road Name: Merrill Av. Road Segment: w/o Grove Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 23,519 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,352 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.37% Medium Trucks: 69.1% 10.3% 20.5% 6.58% Heavy Trucks: 72.8% 7.3% 19.8% 2.05%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.03	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.40	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.46	1.31	-1.20	-5.50	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.3	68.7	68.7	64.1	71.5	72.1	
Medium Trucks:	70.7	68.3	66.1	64.3	71.5	71.8	
Heavy Trucks:	70.0	67.9	63.9	63.5	70.7	70.9	
Vehicle Noise:	75.5	73.1	71.4	68.7	76.0	76.4	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			111	239	514	1,108	
CNEL:			118	253	546	1,176	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 With Project Road Name: Merrill Av. Road Segment: w/o Flight Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 26,550 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,655 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.46% Medium Trucks: 69.1% 10.3% 20.5% 6.52% Heavy Trucks: 72.8% 7.3% 19.8% 2.02%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.56	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-9.91	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.99	1.31	-1.20	-5.50	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	69.3	69.2	64.6	72.1	72.6	
Medium Trucks:	71.2	68.8	66.6	64.8	71.9	72.3	
Heavy Trucks:	70.5	68.3	64.4	63.9	71.1	71.4	
Vehicle Noise:	76.0	73.6	71.9	69.2	76.5	76.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			120	258	555	1,196	
CNEL:			127	274	589	1,270	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 With Project Road Name: Merrill Av. Road Segment: e/o Hellman Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 26,526 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,653 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.61% Medium Trucks: 69.1% 10.3% 20.5% 6.40% Heavy Trucks: 72.8% 7.3% 19.8% 1.99%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.56	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-9.99	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.07	1.31	-1.20	-5.50	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	69.3	69.2	64.6	72.1	72.6	
Medium Trucks:	71.1	68.7	66.5	64.7	71.9	72.2	
Heavy Trucks:	70.4	68.2	64.3	63.9	71.1	71.3	
Vehicle Noise:	75.9	73.5	71.9	69.2	76.5	76.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			119	256	551	1,186	
CNEL:			126	272	585	1,260	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 With Project Road Name: Merrill Av. Road Segment: e/o Archibald Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 8,224 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 822 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.62% Medium Trucks: 69.1% 10.3% 20.5% 6.45% Heavy Trucks: 72.8% 7.3% 19.8% 1.94%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 68.46 -3.07 1.28 -1.20 -4.61 0.000 0.000 Medium Trucks: 79.45 -14.59 1.31 -1.20 -4.87 0.000 0.000 Heavy Trucks: 84.25 -19.82 1.31 -1.20 -5.50 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 65.5 62.9 62.9 58.3 65.7 66.3 Medium Trucks: 65.0 62.6 60.3 58.6 65.7 66.0 Heavy Trucks: 64.5 62.4 58.4 58.0 65.2 65.4 Vehicle Noise: 69.8 67.4 65.7 63.0 70.3 70.7				Lane Equivalent Distance (in feet)			
				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 46 99 214 462 CNEL: 49 106 227 490				FWHA Noise Model Calculations			
				VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 0.92 1.01 -1.20 -4.64 0.000 0.000 Medium Trucks: 81.00 -10.55 1.04 -1.20 -4.87 0.000 0.000 Heavy Trucks: 85.38 -15.77 1.04 -1.20 -5.44 0.000 0.000			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 With Project Road Name: Kimball Av. Road Segment: w/o Hellman Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 22,917 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,292 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 51 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 49.0 feet Centerline Dist. to Observer: 49.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.52% Medium Trucks: 69.1% 10.3% 20.5% 6.53% Heavy Trucks: 72.8% 7.3% 19.8% 1.96%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 68.46 -3.07 1.28 -1.20 -4.61 0.000 0.000 Medium Trucks: 79.45 -14.59 1.31 -1.20 -4.87 0.000 0.000 Heavy Trucks: 84.25 -19.82 1.31 -1.20 -5.50 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 65.5 62.9 62.9 58.3 65.7 66.3 Medium Trucks: 65.0 62.6 60.3 58.6 65.7 66.0 Heavy Trucks: 64.5 62.4 58.4 58.0 65.2 65.4 Vehicle Noise: 69.8 67.4 65.7 63.0 70.3 70.7				Lane Equivalent Distance (in feet)			
				Autos: 42.140 Medium Trucks: 41.929 Heavy Trucks: 41.950			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 115 248 535 1,152 CNEL: 122 264 568 1,224				FWHA Noise Model Calculations			
				VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 0.92 1.01 -1.20 -4.64 0.000 0.000 Medium Trucks: 81.00 -10.55 1.04 -1.20 -4.87 0.000 0.000 Heavy Trucks: 85.38 -15.77 1.04 -1.20 -5.44 0.000 0.000			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 With Project Road Name: Limonite Av. Road Segment: e/o Hellman Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 1,186 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 119 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 97.14% Medium Trucks: 69.1% 10.3% 20.5% 2.20% Heavy Trucks: 72.8% 7.3% 19.8% 0.66%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 -11.68 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -28.13 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -33.35 -1.84 -1.20 -5.25 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 55.5 52.9 52.9 48.3 55.7 56.3 Medium Trucks: 49.8 47.4 45.2 43.4 50.6 50.9 Heavy Trucks: 49.0 46.8 42.9 42.4 49.6 49.9 Vehicle Noise: 57.2 54.8 53.9 50.3 57.6 58.1				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 11 24 53 114 CNEL: 12 26 57 122				FWHA Noise Model Calculations			
				VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 3.23 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -8.39 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -13.40 -1.84 -1.20 -5.25 0.000 0.000			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 With Project Road Name: Limonite Av. Road Segment: e/o Archibald Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 38,886 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,889 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.69% Medium Trucks: 69.1% 10.3% 20.5% 6.32% Heavy Trucks: 72.8% 7.3% 19.8% 1.99%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 3.23 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -8.39 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -13.40 -1.84 -1.20 -5.25 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 70.4 67.8 67.8 63.2 70.6 71.2 Medium Trucks: 69.6 67.2 64.9 63.2 70.3 70.6 Heavy Trucks: 68.9 66.8 62.8 62.4 69.6 69.8 Vehicle Noise: 74.4 72.0 70.4 67.7 75.0 75.4				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 163 351 756 1,628 CNEL: 173 373 803 1,730				FWHA Noise Model Calculations			
				VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 3.23 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -8.39 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -13.40 -1.84 -1.20 -5.25 0.000 0.000			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 With Project Road Name: Limonite Av. Road Segment: e/o Harrison Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 46,979 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,698 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.60% Medium Trucks: 69.1% 10.3% 20.5% 6.40% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 4.04 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -7.52 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -12.57 -1.84 -1.20 -5.25 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 71.2 68.6 68.6 64.0 71.4 72.0 Medium Trucks: 70.4 68.0 65.8 64.0 71.2 71.5 Heavy Trucks: 69.8 67.6 63.7 63.2 70.4 70.7 Vehicle Noise: 75.3 72.9 71.3 68.5 75.8 76.2				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 185 399 860 1,853 CNEL: 197 424 914 1,968				FWHA Noise Model Calculations			
				VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 4.04 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -7.52 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -12.57 -1.84 -1.20 -5.25 0.000 0.000			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 With Project Road Name: Limonite Av. Road Segment: e/o Sumner Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 49,541 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,954 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.57% Medium Trucks: 69.1% 10.3% 20.5% 6.43% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 4.27 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -7.26 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -12.32 -1.84 -1.20 -5.25 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 71.4 68.9 68.8 64.2 71.7 72.2 Medium Trucks: 70.7 68.3 66.1 64.3 71.4 71.8 Heavy Trucks: 70.0 67.8 63.9 63.4 70.7 70.9 Vehicle Noise: 75.5 73.1 71.5 68.8 76.0 76.4				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 192 414 892 1,923 CNEL: 204 440 948 2,042				FWHA Noise Model Calculations			
				VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 4.27 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -7.26 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -12.32 -1.84 -1.20 -5.25 0.000 0.000			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 With Project Road Name: Limonite Av. Road Segment: e/o Scholar Wy.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 51,722 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,172 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.52% Medium Trucks: 69.1% 10.3% 20.5% 6.46% Heavy Trucks: 72.8% 7.3% 19.8% 2.01%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 4.46 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -7.05 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -12.12 -1.84 -1.20 -5.25 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 71.6 69.0 69.0 64.4 71.8 72.4 Medium Trucks: 70.9 68.5 66.3 64.5 71.7 72.0 Heavy Trucks: 70.2 68.0 64.1 63.6 70.9 71.1 Vehicle Noise: 75.7 73.3 71.7 69.0 76.2 76.6				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 198 427 920 1,982 CNEL: 211 454 977 2,106				FWHA Noise Model Calculations			
				VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 4.46 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -7.05 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -12.12 -1.84 -1.20 -5.25 0.000 0.000			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: OY 2021 With Project Road Name: Limonite Av. Road Segment: e/o Hamner Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 66,200 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 6,620 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.43% Medium Trucks: 69.1% 10.3% 20.5% 6.55% Heavy Trucks: 72.8% 7.3% 19.8% 2.02%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 68.46 5.98 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 79.45 -5.47 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 84.25 -10.57 -1.84 -1.20 -5.25 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 71.4 68.8 68.8 64.2 71.6 72.2 Medium Trucks: 70.9 68.5 66.3 64.5 71.7 72.0 Heavy Trucks: 70.6 68.5 64.5 64.1 71.3 71.5 Vehicle Noise: 75.8 73.4 71.7 69.0 76.3 76.7				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 200 431 929 2,001 CNEL: 212 457 986 2,123				FWHA Noise Model Calculations			
				VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 68.46 5.98 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 79.45 -5.47 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 84.25 -10.57 -1.84 -1.20 -5.25 0.000 0.000			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/o Limonite E Road Name: Grove Av. Road Segment: n/o Merrill Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 10,920 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 1,092 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 60 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 -2.31 1.30 -1.20 -4.65 0.000 0.000 Medium Trucks: 81.00 -13.68 1.34 -1.20 -4.87 0.000 0.000 Heavy Trucks: 85.38 -18.90 1.33 -1.20 -5.43 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 68.0 65.4 65.4 60.8 68.2 68.8 Medium Trucks: 67.5 65.1 62.8 61.0 68.2 68.5 Heavy Trucks: 66.6 64.4 60.5 60.0 67.3 67.5 Vehicle Noise: 72.2 69.8 68.1 65.4 72.7 73.1				Lane Equivalent Distance (in feet)			
				Autos: 40.311 Medium Trucks: 40.091 Heavy Trucks: 40.113			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 76 163 351 756 CNEL: 80 173 373 803				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 68.46 0.30 1.01 -1.20 -4.64 0.000 0.000 Medium Trucks: 79.45 -11.07 1.04 -1.20 -4.87 0.000 0.000 Heavy Trucks: 84.25 -16.30 1.04 -1.20 -5.44 0.000 0.000				Lane Equivalent Distance (in feet)			
				Autos: 42.140 Medium Trucks: 41.929 Heavy Trucks: 41.950			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 68.6 66.0 66.0 61.3 68.8 69.4 Medium Trucks: 68.2 65.8 63.6 61.8 69.0 69.3 Heavy Trucks: 67.8 65.6 61.7 61.2 68.4 68.7 Vehicle Noise: 73.0 70.6 68.9 66.2 73.5 73.9				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA Ldn: 84 181 390 840 CNEL: 89 192 414 892			
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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/o Limonite E Road Name: Hellman Av. Road Segment: n/o Merrill Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 9,423 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 942 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 -2.95 -1.05 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -14.32 -1.03 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -19.54 -1.03 -1.20 -5.25 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 65.0 62.4 62.4 57.8 65.3 65.8 Medium Trucks: 64.5 62.1 59.8 58.0 65.2 65.5 Heavy Trucks: 63.6 61.4 57.5 57.0 64.3 64.5 Vehicle Noise: 69.2 66.8 65.1 62.4 69.7 70.1				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 71 152 328 706 CNEL: 75 162 348 750				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 2.80 -1.05 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -8.57 -1.03 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -13.79 -1.03 -1.20 -5.25 0.000 0.000				Lane Equivalent Distance (in feet)			
				Autos: 42.140 Medium Trucks: 41.929 Heavy Trucks: 41.950			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 70.8 68.2 68.2 63.5 71.0 71.6 Medium Trucks: 70.2 67.8 65.6 63.8 70.9 71.3 Heavy Trucks: 69.4 67.2 63.2 62.8 70.0 70.2 Vehicle Noise: 74.9 72.5 70.9 68.2 75.4 75.8				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA Ldn: 171 368 792 1,707 CNEL: 181 391 842 1,813			
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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/o Limonite E Road Name: Hellman Av. Road Segment: s/o Kimball Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 17,899 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 1,790 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 51 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 49.0 feet Centerline Dist. to Observer: 49.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 68.46 0.30 1.01 -1.20 -4.64 0.000 0.000 Medium Trucks: 79.45 -11.07 1.04 -1.20 -4.87 0.000 0.000 Heavy Trucks: 84.25 -16.30 1.04 -1.20 -5.44 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 68.6 66.0 66.0 61.3 68.8 69.4 Medium Trucks: 68.2 65.8 63.6 61.8 69.0 69.3 Heavy Trucks: 67.8 65.6 61.7 61.2 68.4 68.7 Vehicle Noise: 73.0 70.6 68.9 66.2 73.5 73.9				Lane Equivalent Distance (in feet)			
				Autos: 42.140 Medium Trucks: 41.929 Heavy Trucks: 41.950			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 84 181 390 840 CNEL: 89 192 414 892				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 68.46 0.30 1.01 -1.20 -4.64 0.000 0.000 Medium Trucks: 79.45 -11.07 1.04 -1.20 -4.87 0.000 0.000 Heavy Trucks: 84.25 -16.30 1.04 -1.20 -5.44 0.000 0.000				Lane Equivalent Distance (in feet)			
				Autos: 42.140 Medium Trucks: 41.929 Heavy Trucks: 41.950			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 68.6 66.0 66.0 61.3 68.8 69.4 Medium Trucks: 68.2 65.8 63.6 61.8 69.0 69.3 Heavy Trucks: 67.8 65.6 61.7 61.2 68.4 68.7 Vehicle Noise: 73.0 70.6 68.9 66.2 73.5 73.9				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA Ldn: 84 181 390 840 CNEL: 89 192 414 892			
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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/o Limonite E Road Name: Archibald Av. Road Segment: n/o Riverside Dr.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 35,411 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,541 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 2.80 -1.05 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -8.57 -1.03 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -13.79 -1.03 -1.20 -5.25 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 70.8 68.2 68.2 63.5 71.0 71.6 Medium Trucks: 70.2 67.8 65.6 63.8 70.9 71.3 Heavy Trucks: 69.4 67.2 63.2 62.8 70.0 70.2 Vehicle Noise: 74.9 72.5 70.9 68.2 75.4 75.8				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 171 368 792 1,707 CNEL: 181 391 842 1,813				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 2.80 -1.05 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -8.57 -1.03 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -13.79 -1.03 -1.20 -5.25 0.000 0.000				Lane Equivalent Distance (in feet)			
				Autos: 42.140 Medium Trucks: 41.929 Heavy Trucks: 41.950			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 70.8 68.2 68.2 63.5 71.0 71.6 Medium Trucks: 70.2 67.8 65.6 63.8 70.9 71.3 Heavy Trucks: 69.4 67.2 63.2 62.8 70.0 70.2 Vehicle Noise: 74.9 72.5 70.9 68.2 75.4 75.8				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA Ldn: 171 368 792 1,707 CNEL: 181 391 842 1,813			
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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/o Limonite E Road Name: Archibald Av. Road Segment: s/o Riverside Dr.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 42,497 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,250 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 71.78 3.18 -1.05 -1.20 -4.73 0.000 0.000 Medium Trucks: 82.40 -8.19 -1.03 -1.20 -4.88 0.000 0.000 Heavy Trucks: 86.40 -13.42 -1.03 -1.20 -5.25 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 72.7 70.1 70.1 65.5 73.0 73.5 Medium Trucks: 72.0 69.6 67.3 65.6 72.7 73.1 Heavy Trucks: 70.8 68.6 64.6 64.2 71.4 71.6 Vehicle Noise: 76.7 74.3 72.7 69.9 77.2 77.6				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
Centerline Distance to Noise Contour (in feet) Ldn: 223 480 1,035 2,230 CNEL: 237 511 1,100 2,371				70 dBA 65 dBA 60 dBA 55 dBA			
				Ldn: 219 471 1,015 2,187 CNEL: 232 501 1,079 2,325			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/o Limonite E Road Name: Archibald Av. Road Segment: s/o Chino Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 41,265 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,127 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 71.78 3.05 -1.05 -1.20 -4.73 0.000 0.000 Medium Trucks: 82.40 -8.32 -1.03 -1.20 -4.88 0.000 0.000 Heavy Trucks: 86.40 -13.54 -1.03 -1.20 -5.25 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 72.6 70.0 70.0 65.4 72.8 73.4 Medium Trucks: 71.9 69.5 67.2 65.4 72.6 72.9 Heavy Trucks: 70.6 68.5 64.5 64.1 71.3 71.5 Vehicle Noise: 76.5 74.1 72.6 69.8 77.1 77.5				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
Centerline Distance to Noise Contour (in feet) Ldn: 219 471 1,015 2,187 CNEL: 232 501 1,079 2,325				70 dBA 65 dBA 60 dBA 55 dBA			
				Ldn: 219 471 1,015 2,187 CNEL: 232 501 1,079 2,325			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/o Limonite E Road Name: Archibald Av. Road Segment: s/o Schaefer Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 38,707 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,871 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 71.78 2.78 -1.05 -1.20 -4.73 0.000 0.000 Medium Trucks: 82.40 -8.60 -1.03 -1.20 -4.88 0.000 0.000 Heavy Trucks: 86.40 -13.82 -1.03 -1.20 -5.25 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 72.3 69.7 69.7 65.1 72.6 73.1 Medium Trucks: 71.6 69.2 66.9 65.2 72.3 72.7 Heavy Trucks: 70.3 68.2 64.2 63.8 71.0 71.2 Vehicle Noise: 76.3 73.9 72.3 69.5 76.8 77.2				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
Centerline Distance to Noise Contour (in feet) Ldn: 210 451 973 2,095 CNEL: 223 480 1,034 2,227				70 dBA 65 dBA 60 dBA 55 dBA			
				Ldn: 210 451 973 2,095 CNEL: 223 480 1,034 2,227			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/o Limonite E Road Name: Archibald Av. Road Segment: s/o Ontario Ranch Rd.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 46,807 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,681 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 71.78 3.60 -1.05 -1.20 -4.73 0.000 0.000 Medium Trucks: 82.40 -7.77 -1.03 -1.20 -4.88 0.000 0.000 Heavy Trucks: 86.40 -13.00 -1.03 -1.20 -5.25 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 73.1 70.6 70.5 65.9 73.4 73.9 Medium Trucks: 72.4 70.0 67.8 66.0 73.1 73.5 Heavy Trucks: 71.2 69.0 65.1 64.6 71.8 72.1 Vehicle Noise: 77.1 74.7 73.1 70.3 77.6 78.0				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
Centerline Distance to Noise Contour (in feet) Ldn: 238 512 1,104 2,378 CNEL: 253 545 1,174 2,528				70 dBA 65 dBA 60 dBA 55 dBA			
				Ldn: 238 512 1,104 2,378 CNEL: 253 545 1,174 2,528			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/o Limonite E Road Name: Archibald Av. Road Segment: s/o Eucalyptus Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 47,856 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,786 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA			
Ldn: 241 520 1,120 2,414				Ldn: 221 476 1,025 2,209			
CNEL: 257 553 1,191 2,566				CNEL: 235 506 1,090 2,348			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/o Limonite E Road Name: Archibald Av. Road Segment: s/o Merrill Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 41,892 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,189 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA			
Ldn: 241 520 1,120 2,414				Ldn: 221 476 1,025 2,209			
CNEL: 257 553 1,191 2,566				CNEL: 235 506 1,090 2,348			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/o Limonite E Road Name: Archibald Av. Road Segment: s/o Limonite Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 54,572 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,457 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA			
Ldn: 207 445 959 2,065				Ldn: 210 453 975 2,101			
CNEL: 219 473 1,018 2,194				CNEL: 223 481 1,036 2,232			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/o Limonite E Road Name: Archibald Av. Road Segment: s/o 65th St.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 56,000 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,600 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA			
Ldn: 207 445 959 2,065				Ldn: 210 453 975 2,101			
CNEL: 219 473 1,018 2,194				CNEL: 223 481 1,036 2,232			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/o Limonite E Road Name: Archibald Av. Road Segment: s/o Schleisman Rd.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 43,202 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,320 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA			
Ldn: 177				381 820 1,767			
CNEL: 188				404 871 1,877			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/o Limonite E Road Name: Ontario Ranch Rd. Road Segment: e/o Archibald Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 27,830 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,783 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 115 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 55.846 Medium Trucks: 55.687 Heavy Trucks: 55.703			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA			
Ldn: 163				350 755 1,626			
CNEL: 173				372 802 1,727			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/o Limonite E Road Name: Merrill Av. Road Segment: w/o Grove Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 23,238 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,324 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA			
Ldn: 110				236 509 1,097			
CNEL: 116				251 541 1,165			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/o Limonite E Road Name: Merrill Av. Road Segment: w/o Flight Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 30,970 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,097 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA			
Ldn: 133				286 616 1,328			
CNEL: 141				304 655 1,410			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/o Limonite E Road Name: Merrill Av. Road Segment: e/o Hellman Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 39,574 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,957 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 3.29 1.28 -1.20 -4.61 0.000 0.000 Medium Trucks: 81.00 -8.09 1.31 -1.20 -4.87 0.000 0.000 Heavy Trucks: 85.38 -13.31 1.31 -1.20 -5.50 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 73.6 71.0 71.0 66.3 73.8 74.4 Medium Trucks: 73.0 70.6 68.4 66.6 73.8 74.1 Heavy Trucks: 72.2 70.0 66.1 65.6 72.8 73.1 Vehicle Noise: 77.7 75.3 73.7 71.0 78.3 78.7				Lane Equivalent Distance (in feet)			
				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 156 337 726 1,564 CNEL: 166 358 771 1,661				FWHA Noise Model Calculations			
				VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 68.46 -4.39 1.28 -1.20 -4.61 0.000 0.000 Medium Trucks: 79.45 -15.76 1.31 -1.20 -4.87 0.000 0.000 Heavy Trucks: 84.25 -20.99 1.31 -1.20 -5.50 0.000 0.000			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/o Limonite E Road Name: Merrill Av. Road Segment: e/o Archibald Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 6,081 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 608 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 3.29 1.28 -1.20 -4.61 0.000 0.000 Medium Trucks: 81.00 -8.09 1.31 -1.20 -4.87 0.000 0.000 Heavy Trucks: 85.38 -13.31 1.31 -1.20 -5.50 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 73.6 71.0 71.0 66.3 73.8 74.4 Medium Trucks: 73.0 70.6 68.4 66.6 73.8 74.1 Heavy Trucks: 72.2 70.0 66.1 65.6 72.8 73.1 Vehicle Noise: 77.7 75.3 73.7 71.0 78.3 78.7				Lane Equivalent Distance (in feet)			
				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 156 337 726 1,564 CNEL: 166 358 771 1,661				FWHA Noise Model Calculations			
				VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 68.46 -4.39 1.28 -1.20 -4.61 0.000 0.000 Medium Trucks: 79.45 -15.76 1.31 -1.20 -4.87 0.000 0.000 Heavy Trucks: 84.25 -20.99 1.31 -1.20 -5.50 0.000 0.000			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/o Limonite E Road Name: Kimball Av. Road Segment: w/o Hellman Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 17,407 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 1,741 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 51 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 49.0 feet Centerline Dist. to Observer: 49.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 -0.28 1.01 -1.20 -4.64 0.000 0.000 Medium Trucks: 81.00 -11.65 1.04 -1.20 -4.87 0.000 0.000 Heavy Trucks: 85.38 -16.88 1.04 -1.20 -5.44 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 69.7 67.2 67.1 62.5 70.0 70.5 Medium Trucks: 69.2 66.8 64.6 62.8 69.9 70.3 Heavy Trucks: 68.3 66.2 62.2 61.8 69.0 69.2 Vehicle Noise: 73.9 71.5 69.9 67.1 74.4 74.8				Lane Equivalent Distance (in feet)			
				Autos: 42.140 Medium Trucks: 41.929 Heavy Trucks: 41.950			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 97 208 449 967 CNEL: 103 221 477 1,027				FWHA Noise Model Calculations			
				VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 -2.08 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -13.45 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -18.68 -1.84 -1.20 -5.25 0.000 0.000			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/o Limonite E Road Name: Limonite Av. Road Segment: e/o Hellman Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 11,505 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 1,151 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 -2.08 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -13.45 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -18.68 -1.84 -1.20 -5.25 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 65.1 62.5 62.5 57.9 65.3 65.9 Medium Trucks: 64.5 62.1 59.9 58.1 65.3 65.6 Heavy Trucks: 63.7 61.5 57.5 57.1 64.3 64.5 Vehicle Noise: 69.2 66.8 65.2 62.5 69.8 70.1				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 73 158 340 732 CNEL: 78 167 361 777				FWHA Noise Model Calculations			
				VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 -2.08 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -13.45 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -18.68 -1.84 -1.20 -5.25 0.000 0.000			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/o Limonite E Road Name: Limonite Av. Road Segment: e/o Archibald Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 47,688 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,769 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 4.10 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -7.28 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -12.50 -1.84 -1.20 -5.25 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 71.2 68.7 68.6 64.0 71.5 72.1 Medium Trucks: 70.7 68.3 66.0 64.3 71.4 71.8 Heavy Trucks: 69.8 67.7 63.7 63.3 70.5 70.7 Vehicle Noise: 75.4 73.0 71.4 68.6 75.9 76.3				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 189 407 876 1,888 CNEL: 201 432 931 2,005				FWHA Noise Model Calculations			
				VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 4.10 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -7.28 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -12.50 -1.84 -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: 71.2 68.7 68.6 64.0 71.5 72.1 Medium Trucks: 70.7 68.3 66.0 64.3 71.4 71.8 Heavy Trucks: 69.8 67.7 63.7 63.3 70.5 70.7 Vehicle Noise: 75.4 73.0 71.4 68.6 75.9 76.3				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA Ldn: 189 407 876 1,888 CNEL: 201 432 931 2,005			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/o Limonite E Road Name: Limonite Av. Road Segment: e/o Harrison Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 51,100 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,110 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 4.40 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -6.98 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -12.20 -1.84 -1.20 -5.25 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 71.5 69.0 68.9 64.3 71.8 72.4 Medium Trucks: 71.0 68.6 66.3 64.6 71.7 72.1 Heavy Trucks: 70.1 68.0 64.0 63.6 70.8 71.0 Vehicle Noise: 75.7 73.3 71.7 68.9 76.2 76.6				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 198 426 918 1,977 CNEL: 210 452 975 2,100				FWHA Noise Model Calculations			
				VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 4.35 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -7.02 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -12.24 -1.84 -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: 71.5 68.9 68.9 64.3 71.7 72.3 Medium Trucks: 70.9 68.5 66.3 64.5 71.7 72.0 Heavy Trucks: 70.1 67.9 64.0 63.5 70.7 71.0 Vehicle Noise: 75.7 73.3 71.6 68.9 76.2 76.6				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA Ldn: 196 423 911 1,959 CNEL: 209 449 968 2,086			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/o Limonite E Road Name: Limonite Av. Road Segment: e/o Sumner Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 50,414 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,041 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 4.34 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -7.03 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -12.26 -1.84 -1.20 -5.25 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 71.5 68.9 68.9 64.3 71.7 72.3 Medium Trucks: 70.9 68.5 66.3 64.5 71.7 72.0 Heavy Trucks: 70.1 67.9 64.0 63.5 70.7 71.0 Vehicle Noise: 75.6 73.2 71.6 68.9 76.2 76.6				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 196 422 909 1,959 CNEL: 208 448 966 2,081				FWHA Noise Model Calculations			
				VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 4.35 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -7.02 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -12.24 -1.84 -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: 71.5 68.9 68.9 64.3 71.7 72.3 Medium Trucks: 70.9 68.5 66.3 64.5 71.7 72.0 Heavy Trucks: 70.1 67.9 64.0 63.5 70.7 71.0 Vehicle Noise: 75.6 73.2 71.6 68.9 76.2 76.6				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA Ldn: 196 422 909 1,959 CNEL: 208 448 966 2,081			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/o Limonite E Road Name: Limonite Av. Road Segment: e/o Scholar Wy.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 50,591 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,059 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 4.35 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -7.02 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -12.24 -1.84 -1.20 -5.25 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 71.5 68.9 68.9 64.3 71.7 72.3 Medium Trucks: 70.9 68.5 66.3 64.5 71.7 72.0 Heavy Trucks: 70.1 67.9 64.0 63.5 70.7 71.0 Vehicle Noise: 75.7 73.3 71.6 68.9 76.2 76.6				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 196 423 911 1,959 CNEL: 209 449 968 2,086				FWHA Noise Model Calculations			
				VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 4.35 -1.85 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -7.02 -1.84 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -12.24 -1.84 -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: 71.5 68.9 68.9 64.3 71.7 72.3 Medium Trucks: 70.9 68.5 66.3 64.5 71.7 72.0 Heavy Trucks: 70.1 67.9 64.0 63.5 70.7 71.0 Vehicle Noise: 75.7 73.3 71.6 68.9 76.2 76.6				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA Ldn: 196 423 911 1,959 CNEL: 209 449 968 2,086			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/o Limonite E Road Name: Limonite Av. Road Segment: e/o Hamner Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 54,882 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,488 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	5.16	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-6.21	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.43	-1.84	-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:	70.6	68.0	68.0	63.4	70.8	71.4	
Medium Trucks:	70.2	67.8	65.6	63.8	70.9	71.3	
Heavy Trucks:	69.8	67.6	63.7	63.2	70.4	70.7	
Vehicle Noise:	75.0	72.6	70.9	68.2	75.5	75.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			177	381	821	1,769	
CNEL:			188	404	871	1,877	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/o Limonite Ext Road Name: Grove Av. Road Segment: n/o Merrill Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 11,185 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 1,118 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 60 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.55% Medium Trucks: 69.1% 10.3% 20.5% 6.50% Heavy Trucks: 72.8% 7.3% 19.8% 1.95%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 40.311 Medium Trucks: 40.091 Heavy Trucks: 40.113			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.19	1.30	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-13.68	1.34	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-18.90	1.33	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.1	65.5	65.5	60.9	68.4	68.9	
Medium Trucks:	67.5	65.1	62.8	61.0	68.2	68.5	
Heavy Trucks:	66.6	64.4	60.5	60.0	67.3	67.5	
Vehicle Noise:	72.2	69.8	68.2	65.5	72.7	73.1	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			76	164	353	761	
CNEL:			81	174	375	808	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/o Limonite Ext Road Name: Hellman Av. Road Segment: n/o Merrill Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 9,754 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 975 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.63% Medium Trucks: 69.1% 10.3% 20.5% 6.43% Heavy Trucks: 72.8% 7.3% 19.8% 1.93%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.78	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-14.32	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-19.54	-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:	65.2	62.6	62.6	58.0	65.4	66.0	
Medium Trucks:	64.5	62.1	59.8	58.0	65.2	65.5	
Heavy Trucks:	63.6	61.4	57.5	57.0	64.3	64.5	
Vehicle Noise:	69.2	66.8	65.2	62.5	69.8	70.2	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			71	154	331	713	
CNEL:			76	163	352	757	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/o Limonite Ext Road Name: Hellman Av. Road Segment: s/o Kimball Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 18,230 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 1,823 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 51 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 49.0 feet Centerline Dist. to Observer: 49.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.50% Medium Trucks: 69.1% 10.3% 20.5% 6.54% Heavy Trucks: 72.8% 7.3% 19.8% 1.96%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 42.140 Medium Trucks: 41.929 Heavy Trucks: 41.950			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.38	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-11.07	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-16.30	1.04	-1.20	-5.44	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	66.1	66.1	61.4	68.9	69.5	
Medium Trucks:	68.2	65.8	63.6	61.8	69.0	69.3	
Heavy Trucks:	67.8	65.6	61.7	61.2	68.4	68.7	
Vehicle Noise:	73.0	70.6	68.9	66.3	73.5	73.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			84	182	392	844	
CNEL:			90	193	416	896	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/o Limonite Ext Road Name: Archibald Av. Road Segment: n/o Riverside Dr.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 35,723 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,572 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.28% Medium Trucks: 69.1% 10.3% 20.5% 6.62% Heavy Trucks: 72.8% 7.3% 19.8% 2.09%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 2.84 -1.05 -1.20 -4.73 0.000 0.000 Medium Trucks: 81.00 -8.55 -1.03 -1.20 -4.88 0.000 0.000 Heavy Trucks: 85.38 -13.56 -1.03 -1.20 -5.25 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 70.8 68.2 68.2 63.6 71.0 71.6 Medium Trucks: 70.2 67.8 65.6 63.8 71.0 71.3 Heavy Trucks: 69.6 67.4 63.5 63.0 70.2 70.5 Vehicle Noise: 75.0 72.6 70.9 68.3 75.5 75.9				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 173 373 803 1,730 CNEL: 184 396 852 1,837							

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/o Limonite Ext Road Name: Archibald Av. Road Segment: s/o Riverside Dr.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 43,074 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,307 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.35% Medium Trucks: 69.1% 10.3% 20.5% 6.59% Heavy Trucks: 72.8% 7.3% 19.8% 2.06%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 71.78 3.24 -1.05 -1.20 -4.73 0.000 0.000 Medium Trucks: 82.40 -8.18 -1.03 -1.20 -4.88 0.000 0.000 Heavy Trucks: 86.40 -13.22 -1.03 -1.20 -5.25 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 72.8 70.2 70.2 65.6 73.0 73.6 Medium Trucks: 72.0 69.6 67.4 65.6 72.7 73.1 Heavy Trucks: 70.9 68.8 64.8 64.4 71.6 71.8 Vehicle Noise: 76.7 74.3 72.8 70.0 77.3 77.7				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 226 486 1,048 2,257 CNEL: 240 517 1,114 2,399							

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/o Limonite Ext Road Name: Archibald Av. Road Segment: s/o Chino Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 41,908 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,191 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.36% Medium Trucks: 69.1% 10.3% 20.5% 6.58% Heavy Trucks: 72.8% 7.3% 19.8% 2.06%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 71.78 3.12 -1.05 -1.20 -4.73 0.000 0.000 Medium Trucks: 82.40 -8.31 -1.03 -1.20 -4.88 0.000 0.000 Heavy Trucks: 86.40 -13.34 -1.03 -1.20 -5.25 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 72.7 70.1 70.1 65.4 72.9 73.5 Medium Trucks: 71.9 69.5 67.2 65.5 72.6 72.9 Heavy Trucks: 70.8 68.7 64.7 64.3 71.5 71.7 Vehicle Noise: 76.6 74.2 72.6 69.9 77.1 77.5				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 221 477 1,028 2,215 CNEL: 235 507 1,093 2,354							

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/o Limonite Ext Road Name: Archibald Av. Road Segment: s/o Schaefer Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 39,416 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,942 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.38% Medium Trucks: 69.1% 10.3% 20.5% 6.56% Heavy Trucks: 72.8% 7.3% 19.8% 2.06%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 71.78 2.86 -1.05 -1.20 -4.73 0.000 0.000 Medium Trucks: 82.40 -8.58 -1.03 -1.20 -4.88 0.000 0.000 Heavy Trucks: 86.40 -13.61 -1.03 -1.20 -5.25 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 72.4 69.8 69.8 65.2 72.6 73.2 Medium Trucks: 71.6 69.2 67.0 65.2 72.3 72.7 Heavy Trucks: 70.6 68.4 64.4 64.0 71.2 71.4 Vehicle Noise: 76.3 73.9 72.4 69.6 76.9 77.3				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 213 458 986 2,125 CNEL: 226 487 1,049 2,259							

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/o Limonite Ext Road Name: Archibald Av. Road Segment: s/o Ontario Ranch Rd.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 47,979 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,798 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.45% Medium Trucks: 69.1% 10.3% 20.5% 6.51% Heavy Trucks: 72.8% 7.3% 19.8% 2.03%			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.71	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-7.76	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.82	-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:	73.2	70.7	70.6	66.0	73.5	74.1	
Medium Trucks:	72.4	70.0	67.8	66.0	73.2	73.5	
Heavy Trucks:	71.3	69.2	65.2	64.8	72.0	72.2	
Vehicle Noise:	77.2	74.8	73.2	70.4	77.7	78.1	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			241	520	1,120	2,413	
CNEL:			256	553	1,191	2,565	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/o Limonite Ext Road Name: Archibald Av. Road Segment: s/o Eucalyptus Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 49,095 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,909 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.46% Medium Trucks: 69.1% 10.3% 20.5% 6.51% Heavy Trucks: 72.8% 7.3% 19.8% 2.03%			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.81	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-7.66	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.73	-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:	73.3	70.8	70.7	66.1	73.6	74.2	
Medium Trucks:	72.5	70.1	67.9	66.1	73.3	73.6	
Heavy Trucks:	71.4	69.3	65.3	64.9	72.1	72.3	
Vehicle Noise:	77.3	74.9	73.3	70.5	77.8	78.2	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			245	528	1,137	2,449	
CNEL:			260	561	1,208	2,603	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/o Limonite Ext Road Name: Archibald Av. Road Segment: s/o Merrill Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 44,478 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,448 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.69% Medium Trucks: 69.1% 10.3% 20.5% 6.30% Heavy Trucks: 72.8% 7.3% 19.8% 2.01%			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.40	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-8.23	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.19	-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:	72.9	70.4	70.3	65.7	73.2	73.7	
Medium Trucks:	71.9	69.5	67.3	65.5	72.7	73.0	
Heavy Trucks:	71.0	68.8	64.9	64.4	71.6	71.9	
Vehicle Noise:	76.8	74.4	72.8	70.0	77.3	77.7	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			227	490	1,055	2,274	
CNEL:			242	521	1,122	2,418	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/o Limonite Ext Road Name: Archibald Av. Road Segment: s/o Limonite Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 55,764 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,576 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.53% Medium Trucks: 69.1% 10.3% 20.5% 6.52% Heavy Trucks: 72.8% 7.3% 19.8% 1.96%			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.78	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-6.69	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-11.92	-1.84	-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:	71.9	69.4	69.3	64.7	72.2	72.7	
Medium Trucks:	71.3	68.9	66.6	64.9	72.0	72.3	
Heavy Trucks:	70.4	68.3	64.3	63.9	71.1	71.3	
Vehicle Noise:	76.0	73.6	72.0	69.3	76.5	76.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			208	448	964	2,077	
CNEL:			221	475	1,024	2,207	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL																			
Scenario: HY 2040 w/ Proj. w/o Limonite Ext Road Name: Archibald Av. Road Segment: s/o 65th St.				Project Name: The Merge Job Number: 11180															
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS															
Highway Data				Site Conditions (Hard = 10, Soft = 15)															
Average Daily Traffic (Adt): 56,927 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,693 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15															
Site Data				Vehicle Mix															
				VehicleType	Day	Evening	Night	Daily											
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.48% Medium Trucks: 69.1% 10.3% 20.5% 6.55% Heavy Trucks: 72.8% 7.3% 19.8% 1.97%															
FHWA Noise Model Calculations				Noise Source Elevations (in feet)															
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0															
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)															
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299															
VehicleType				REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten									
Autos:				70.20	4.87	-1.85	-1.20	-4.73	0.000	0.000									
Medium Trucks:				81.00	-6.58	-1.84	-1.20	-4.88	0.000	0.000									
Heavy Trucks:				85.38	-11.80	-1.84	-1.20	-5.25	0.000	0.000									
Leq Peak Hour				Leq Day	Leq Evening	Leq Night	Ldn	CNEL											
Autos:				72.0	69.5	69.4	64.8	72.3	72.8										
Medium Trucks:				71.4	69.0	66.7	65.0	72.1	72.5										
Heavy Trucks:				70.5	68.4	64.4	64.0	71.2	71.4										
Vehicle Noise:				76.1	73.7	72.1	69.4	76.7	77.0										
Centerline Distance to Noise Contour (in feet)				70 dBA				65 dBA				60 dBA				55 dBA			
Ldn:				211				455				980				2,110			
CNEL:				224				483				1,041				2,242			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL																			
Scenario: HY 2040 w/ Proj. w/o Limonite Ext Road Name: Archibald Av. Road Segment: s/o Schleisman Rd.				Project Name: The Merge Job Number: 11180															
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS															
Highway Data				Site Conditions (Hard = 10, Soft = 15)															
Average Daily Traffic (Adt): 43,732 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,373 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15															
Site Data				Vehicle Mix															
				VehicleType	Day	Evening	Night	Daily											
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.44% Medium Trucks: 69.1% 10.3% 20.5% 6.58% Heavy Trucks: 72.8% 7.3% 19.8% 1.98%															
FHWA Noise Model Calculations				Noise Source Elevations (in feet)															
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0															
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)															
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299															
VehicleType				REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten									
Autos:				70.20	3.72	-1.85	-1.20	-4.73	0.000	0.000									
Medium Trucks:				81.00	-7.71	-1.84	-1.20	-4.88	0.000	0.000									
Heavy Trucks:				85.38	-12.93	-1.84	-1.20	-5.25	0.000	0.000									
Leq Peak Hour				Leq Day	Leq Evening	Leq Night	Ldn	CNEL											
Autos:				70.9	68.3	68.3	63.7	71.1	71.7										
Medium Trucks:				70.3	67.9	65.6	63.8	71.0	71.3										
Heavy Trucks:				69.4	67.2	63.3	62.8	70.1	70.3										
Vehicle Noise:				75.0	72.6	71.0	68.2	75.5	75.9										
Centerline Distance to Noise Contour (in feet)				70 dBA				65 dBA				60 dBA				55 dBA			
Ldn:				177				382				823				1,773			
CNEL:				188				406				874				1,884			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL																			
Scenario: HY 2040 w/ Proj. w/o Limonite Ext Road Name: Ontario Ranch Rd. Road Segment: e/o Archibald Av.				Project Name: The Merge Job Number: 11180															
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS															
Highway Data				Site Conditions (Hard = 10, Soft = 15)															
Average Daily Traffic (Adt): 28,161 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,816 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 115 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15															
Site Data				Vehicle Mix															
				VehicleType	Day	Evening	Night	Daily											
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.44% Medium Trucks: 69.1% 10.3% 20.5% 6.58% Heavy Trucks: 72.8% 7.3% 19.8% 1.98%															
FHWA Noise Model Calculations				Noise Source Elevations (in feet)															
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0															
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)															
				Autos: 55.846 Medium Trucks: 55.687 Heavy Trucks: 55.703															
VehicleType				REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten									
Autos:				70.20	1.81	-0.82	-1.20	-4.74	0.000	0.000									
Medium Trucks:				81.00	-9.62	-0.81	-1.20	-4.88	0.000	0.000									
Heavy Trucks:				85.38	-14.84	-0.81	-1.20	-5.23	0.000	0.000									
Leq Peak Hour				Leq Day	Leq Evening	Leq Night	Ldn	CNEL											
Autos:				70.0	67.4	67.4	62.8	70.2	70.8										
Medium Trucks:				69.4	67.0	64.7	63.0	70.1	70.5										
Heavy Trucks:				68.5	66.4	62.4	62.0	69.2	69.4										
Vehicle Noise:				74.1	71.7	70.1	67.4	74.6	75.0										
Centerline Distance to Noise Contour (in feet)				70 dBA				65 dBA				60 dBA				55 dBA			
Ldn:				163				352				757				1,632			
CNEL:				173				373				804				1,733			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL																			
Scenario: HY 2040 w/ Proj. w/o Limonite Ext Road Name: Merrill Av. Road Segment: w/o Grove Av.				Project Name: The Merge Job Number: 11180															
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS															
Highway Data				Site Conditions (Hard = 10, Soft = 15)															
Average Daily Traffic (Adt): 23,592 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,359 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15															
Site Data				Vehicle Mix															
				VehicleType	Day	Evening	Night	Daily											
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.37% Medium Trucks: 69.1% 10.3% 20.5% 6.58% Heavy Trucks: 72.8% 7.3% 19.8% 2.05%															
FHWA Noise Model Calculations				Noise Source Elevations (in feet)															
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0															
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)															
				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262															
VehicleType				REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten									
Autos:				70.20	1.04	1.28	-1.20	-4.61	0.000	0.000									
Medium Trucks:				81.00	-10.39	1.31	-1.20	-4.87	0.000	0.000									
Heavy Trucks:				85.38	-15.45	1.31	-1.20	-5.50	0.000	0.000									
Leq Peak Hour				Leq Day	Leq Evening	Leq Night	Ldn	CNEL											
Autos:				71.3	68.8	68.7	64.1	71.6	72.1										
Medium Trucks:				70.7	68.3	66.1	64.3	71.5	71.8										
Heavy Trucks:				70.0	67.9	63.9	63.5	70.7	70.9										
Vehicle Noise:				75.5	73.1	71.5	68.7	76.0	76.4										
Centerline Distance to Noise Contour (in feet)				70 dBA				65 dBA				60 dBA				55 dBA			
Ldn:				111				239				515				1,110			
CNEL:				118				254				547				1,179			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/o Limonite Ext Road Name: Merrill Av. Road Segment: w/o Flight Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 31,589 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,159 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.44% Medium Trucks: 69.1% 10.3% 20.5% 6.54% Heavy Trucks: 72.8% 7.3% 19.8% 2.02%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 2.31 1.28 -1.20 -4.61 0.000 0.000 Medium Trucks: 81.00 -9.14 1.31 -1.20 -4.87 0.000 0.000 Heavy Trucks: 85.38 -14.24 1.31 -1.20 -5.50 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 72.6 70.0 70.0 65.4 72.8 73.4 Medium Trucks: 72.0 69.6 67.3 65.6 72.7 73.0 Heavy Trucks: 71.2 69.1 65.1 64.7 71.9 72.1 Vehicle Noise: 76.7 74.3 72.7 70.0 77.3 77.7				Lane Equivalent Distance (in feet)			
				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 134 289 623 1,343 CNEL: 143 307 662 1,426				FWHA Noise Model Calculations			
				VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 3.41 1.28 -1.20 -4.61 0.000 0.000 Medium Trucks: 81.00 -8.08 1.31 -1.20 -4.87 0.000 0.000 Heavy Trucks: 85.38 -13.21 1.31 -1.20 -5.50 0.000 0.000			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 73.7 71.1 71.1 66.5 73.9 74.5 Medium Trucks: 73.0 70.6 68.4 66.6 73.8 74.1 Heavy Trucks: 72.3 70.1 66.2 65.7 72.9 73.2 Vehicle Noise: 77.8 75.4 73.8 71.1 78.3 78.7				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA Ldn: 158 341 735 1,582 CNEL: 168 362 780 1,681			
Wednesday, May 30, 2018							

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/o Limonite Ext Road Name: Merrill Av. Road Segment: e/o Hellman Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 40,656 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,066 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.51% Medium Trucks: 69.1% 10.3% 20.5% 6.49% Heavy Trucks: 72.8% 7.3% 19.8% 1.99%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 3.41 1.28 -1.20 -4.61 0.000 0.000 Medium Trucks: 81.00 -8.08 1.31 -1.20 -4.87 0.000 0.000 Heavy Trucks: 85.38 -13.21 1.31 -1.20 -5.50 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 72.6 70.0 70.0 65.4 72.8 73.4 Medium Trucks: 72.0 69.6 67.3 65.6 72.7 73.0 Heavy Trucks: 71.2 69.1 65.1 64.7 71.9 72.1 Vehicle Noise: 76.7 74.3 72.7 70.0 77.3 77.7				Lane Equivalent Distance (in feet)			
				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 134 289 623 1,343 CNEL: 143 307 662 1,426				FWHA Noise Model Calculations			
				VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 3.41 1.28 -1.20 -4.61 0.000 0.000 Medium Trucks: 81.00 -8.08 1.31 -1.20 -4.87 0.000 0.000 Heavy Trucks: 85.38 -13.21 1.31 -1.20 -5.50 0.000 0.000			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 73.7 71.1 71.1 66.5 73.9 74.5 Medium Trucks: 73.0 70.6 68.4 66.6 73.8 74.1 Heavy Trucks: 72.3 70.1 66.2 65.7 72.9 73.2 Vehicle Noise: 77.8 75.4 73.8 71.1 78.3 78.7				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA Ldn: 158 341 735 1,582 CNEL: 168 362 780 1,681			
Wednesday, May 30, 2018							

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/o Limonite Ext Road Name: Merrill Av. Road Segment: e/o Archibald Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 6,346 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 635 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.70% Medium Trucks: 69.1% 10.3% 20.5% 6.38% Heavy Trucks: 72.8% 7.3% 19.8% 1.92%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 68.46 -4.19 1.28 -1.20 -4.61 0.000 0.000 Medium Trucks: 79.45 -15.76 1.31 -1.20 -4.87 0.000 0.000 Heavy Trucks: 84.25 -20.99 1.31 -1.20 -5.50 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 64.3 61.8 61.7 57.1 64.6 65.2 Medium Trucks: 63.8 61.4 59.2 57.4 64.5 64.9 Heavy Trucks: 63.4 61.2 57.3 56.8 64.0 64.3 Vehicle Noise: 68.6 66.2 64.6 61.9 69.2 69.6				Lane Equivalent Distance (in feet)			
				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 39 83 180 387 CNEL: 41 88 191 411				FWHA Noise Model Calculations			
				VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 -0.16 1.01 -1.20 -4.64 0.000 0.000 Medium Trucks: 81.00 -11.65 1.04 -1.20 -4.87 0.000 0.000 Heavy Trucks: 85.38 -16.88 1.04 -1.20 -5.44 0.000 0.000			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 69.9 67.3 67.3 62.6 70.1 70.7 Medium Trucks: 69.2 66.8 64.6 62.8 69.9 70.3 Heavy Trucks: 68.3 66.2 62.2 61.8 69.0 69.2 Vehicle Noise: 73.9 71.5 69.9 67.2 74.5 74.9				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA Ldn: 97 210 452 974 CNEL: 103 223 480 1,034			
Wednesday, May 30, 2018							

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/o Limonite Ext Road Name: Kimball Av. Road Segment: w/o Hellman Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 17,870 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 1,787 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 51 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 49.0 feet Centerline Dist. to Observer: 49.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.56% Medium Trucks: 69.1% 10.3% 20.5% 6.49% Heavy Trucks: 72.8% 7.3% 19.8% 1.95%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 -0.16 1.01 -1.20 -4.64 0.000 0.000 Medium Trucks: 81.00 -11.65 1.04 -1.20 -4.87 0.000 0.000 Heavy Trucks: 85.38 -16.88 1.04 -1.20 -5.44 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 64.3 61.8 61.7 57.1 64.6 65.2 Medium Trucks: 63.8 61.4 59.2 57.4 64.5 64.9 Heavy Trucks: 63.4 61.2 57.3 56.8 64.0 64.3 Vehicle Noise: 68.6 66.2 64.6 61.9 69.2 69.6				Lane Equivalent Distance (in feet)			
				Autos: 42.140 Medium Trucks: 41.929 Heavy Trucks: 41.950			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 97 210 452 974 CNEL: 103 223 480 1,034				FWHA Noise Model Calculations			
				VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 -0.16 1.01 -1.20 -4.64 0.000 0.000 Medium Trucks: 81.00 -11.65 1.04 -1.20 -4.87 0.000 0.000 Heavy Trucks: 85.38 -16.88 1.04 -1.20 -5.44 0.000 0.000			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 69.9 67.3 67.3 62.6 70.1 70.7 Medium Trucks: 69.2 66.8 64.6 62.8 69.9 70.3 Heavy Trucks: 68.3 66.2 62.2 61.8 69.0 69.2 Vehicle Noise: 73.9 71.5 69.9 67.2 74.5 74.9				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA Ldn: 97 210 452 974 CNEL: 103 223 480 1,034			
Wednesday, May 30, 2018							

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/o Limonite Ext Road Name: Limonite Av. Road Segment: e/o Hellman Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 12,299 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 1,230 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.90% Medium Trucks: 69.1% 10.3% 20.5% 6.23% Heavy Trucks: 72.8% 7.3% 19.8% 1.87%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.76	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-13.45	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-18.68	-1.84	-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:	65.4	62.8	62.8	58.2	65.6	66.2	
Medium Trucks:	64.5	62.1	59.9	58.1	65.3	65.6	
Heavy Trucks:	63.7	61.5	57.5	57.1	64.3	64.5	
Vehicle Noise:	69.3	66.9	65.4	62.6	69.9	70.3	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			74	160	346	745	
CNEL:			79	171	367	792	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/o Limonite Ext Road Name: Limonite Av. Road Segment: e/o Archibald Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 49,787 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,979 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.61% Medium Trucks: 69.1% 10.3% 20.5% 6.40% Heavy Trucks: 72.8% 7.3% 19.8% 1.99%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.30	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-7.27	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.33	-1.84	-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:	71.4	68.9	68.8	64.2	71.7	72.3	
Medium Trucks:	70.7	68.3	66.1	64.3	71.4	71.8	
Heavy Trucks:	70.0	67.8	63.9	63.4	70.7	70.9	
Vehicle Noise:	75.5	73.1	71.5	68.8	76.1	76.4	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			192	415	893	1,925	
CNEL:			204	441	949	2,045	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/o Limonite Ext Road Name: Limonite Av. Road Segment: e/o Harrison Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 53,067 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,307 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.57% Medium Trucks: 69.1% 10.3% 20.5% 6.43% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.57	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-6.97	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.04	-1.84	-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:	71.7	69.2	69.1	64.5	72.0	72.5	
Medium Trucks:	71.0	68.6	66.4	64.6	71.7	72.1	
Heavy Trucks:	70.3	68.1	64.2	63.7	70.9	71.2	
Vehicle Noise:	75.8	73.4	71.8	69.1	76.3	76.7	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			201	433	934	2,012	
CNEL:			214	460	992	2,137	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/o Limonite Ext Road Name: Limonite Av. Road Segment: e/o Sumner Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 52,248 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,225 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.55% Medium Trucks: 69.1% 10.3% 20.5% 6.44% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.50	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-7.02	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.09	-1.84	-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:	71.7	69.1	69.1	64.4	71.9	72.5	
Medium Trucks:	70.9	68.5	66.3	64.5	71.7	72.0	
Heavy Trucks:	70.2	68.1	64.1	63.7	70.9	71.1	
Vehicle Noise:	75.8	73.4	71.7	69.0	76.3	76.7	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			199	429	925	1,993	
CNEL:			212	456	982	2,117	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/o Limonite Ext Road Name: Limonite Av. Road Segment: e/o Scholar Wy.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 52,227 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,223 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.52% Medium Trucks: 69.1% 10.3% 20.5% 6.47% Heavy Trucks: 72.8% 7.3% 19.8% 2.01%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA			
				65 dBA			
				60 dBA			
				55 dBA			
Ldn:				200 430 926 1,995			
CNEL:				212 457 984 2,119			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/o Limonite Ext Road Name: Limonite Av. Road Segment: e/o Hamner Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 56,121 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,612 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.45% Medium Trucks: 69.1% 10.3% 20.5% 6.53% Heavy Trucks: 72.8% 7.3% 19.8% 2.03%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA			
				65 dBA			
				60 dBA			
				55 dBA			
Ldn:				179 386 832 1,792			
CNEL:				190 410 883 1,901			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/ Limonite Ext Road Name: Grove Av. Road Segment: n/o Merrill Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 9,032 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 903 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 60 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 40.311 Medium Trucks: 40.091 Heavy Trucks: 40.113			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA			
				65 dBA			
				60 dBA			
				55 dBA			
Ldn:				67 144 309 666			
CNEL:				71 152 328 707			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/ Limonite Ext Road Name: Hellman Av. Road Segment: n/o Merrill Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 8,509 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 851 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA			
				65 dBA			
				60 dBA			
				55 dBA			
Ldn:				66 142 306 660			
CNEL:				70 151 325 701			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/ Limonite Ext Road Name: Hellman Av. Road Segment: s/o Kimball Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 23,553 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,355 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 51 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 49.0 feet Centerline Dist. to Observer: 49.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
Vehicle Mix VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Lane Equivalent Distance (in feet) Autos: 42.140 Medium Trucks: 41.929 Heavy Trucks: 41.950				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.49	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-9.88	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-15.11	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	67.2	67.2	62.5	70.0	70.6
Medium Trucks:	69.4	67.0	64.8	63.0	70.2	70.5
Heavy Trucks:	69.0	66.8	62.9	62.4	69.6	69.9
Vehicle Noise:	74.2	71.8	70.1	67.4	74.7	75.1

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	217	468	1,009
CNEL:	107	231	497	1,071

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/ Limonite Ext Road Name: Archibald Av. Road Segment: n/o Riverside Dr.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 35,411 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,541 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
Vehicle Mix VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Lane Equivalent Distance (in feet) Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.80	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-8.57	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-13.79	-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:	70.8	68.2	68.2	63.5	71.0	71.6
Medium Trucks:	70.2	67.8	65.6	63.8	70.9	71.3
Heavy Trucks:	69.4	67.2	63.2	62.8	70.0	70.2
Vehicle Noise:	74.9	72.5	70.9	68.2	75.4	75.8

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	171	368	792	1,707
CNEL:	181	391	842	1,813

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/ Limonite Ext Road Name: Archibald Av. Road Segment: s/o Riverside Dr.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 42,497 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,250 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
Vehicle Mix VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Lane Equivalent Distance (in feet) Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.18	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-8.19	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.42	-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:	72.7	70.1	70.1	65.5	73.0	73.5
Medium Trucks:	72.0	69.6	67.3	65.6	72.7	73.1
Heavy Trucks:	70.8	68.6	64.6	64.2	71.4	71.6
Vehicle Noise:	76.7	74.3	72.7	69.9	77.2	77.6

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	223	480	1,035	2,230
CNEL:	237	511	1,100	2,371

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/ Limonite Ext Road Name: Archibald Av. Road Segment: s/o Chino Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 41,265 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,127 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
Vehicle Mix VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Lane Equivalent Distance (in feet) Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.05	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-8.32	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.54	-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:	72.6	70.0	70.0	65.4	72.8	73.4
Medium Trucks:	71.9	69.5	67.2	65.4	72.6	72.9
Heavy Trucks:	70.6	68.5	64.5	64.1	71.3	71.5
Vehicle Noise:	76.5	74.1	72.6	69.8	77.1	77.5

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	219	471	1,015	2,187
CNEL:	232	501	1,079	2,325

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL										
Scenario: HY 2040 w/o Proj. w/ Limonite Ext Road Name: Archibald Av. Road Segment: s/o Schaefer Av.				Project Name: The Merge Job Number: 11180						
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS						
Highway Data				Site Conditions (Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 38,707 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,871 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15						
Site Data				Vehicle Mix						
				VehicleType	Day	Evening	Night	Daily		
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%						
FHWA Noise Model Calculations				Noise Source Elevations (in feet)						
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0						
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)						
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644						
VehicleType				REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:				71.78	2.78	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:				82.40	-8.60	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:				86.40	-13.82	-1.03	-1.20	-5.25	0.000	0.000
Vehicle Noise:				76.3	73.9	72.3	69.5	76.8	77.2	
Centerline Distance to Noise Contour (in feet)										
				70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:				210	451	973	2,095			
CNEL:				223	480	1,034	2,227			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL										
Scenario: HY 2040 w/o Proj. w/ Limonite Ext Road Name: Archibald Av. Road Segment: s/o Ontario Ranch Rd.				Project Name: The Merge Job Number: 11180						
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS						
Highway Data				Site Conditions (Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 46,807 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,681 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15						
Site Data				Vehicle Mix						
				VehicleType	Day	Evening	Night	Daily		
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%						
FHWA Noise Model Calculations				Noise Source Elevations (in feet)						
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0						
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)						
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644						
VehicleType				REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:				71.78	3.60	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:				82.40	-7.77	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:				86.40	-13.00	-1.03	-1.20	-5.25	0.000	0.000
Vehicle Noise:				77.1	74.7	73.1	70.3	77.6	78.0	
Centerline Distance to Noise Contour (in feet)										
				70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:				238	512	1,104	2,378			
CNEL:				253	545	1,174	2,528			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL										
Scenario: HY 2040 w/o Proj. w/ Limonite Ext Road Name: Archibald Av. Road Segment: s/o Eucalyptus Av.				Project Name: The Merge Job Number: 11180						
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS						
Highway Data				Site Conditions (Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 47,856 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,786 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15						
Site Data				Vehicle Mix						
				VehicleType	Day	Evening	Night	Daily		
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%						
FHWA Noise Model Calculations				Noise Source Elevations (in feet)						
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0						
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)						
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644						
VehicleType				REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:				71.78	3.70	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:				82.40	-7.67	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:				86.40	-12.90	-1.03	-1.20	-5.25	0.000	0.000
Vehicle Noise:				73.2	70.7	70.6	66.0	73.5	74.0	
Centerline Distance to Noise Contour (in feet)										
				70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:				241	520	1,120	2,414			
CNEL:				257	553	1,191	2,566			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL										
Scenario: HY 2040 w/o Proj. w/ Limonite Ext Road Name: Archibald Av. Road Segment: s/o Merrill Av.				Project Name: The Merge Job Number: 11180						
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS						
Highway Data				Site Conditions (Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 48,540 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,854 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15						
Site Data				Vehicle Mix						
				VehicleType	Day	Evening	Night	Daily		
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%						
FHWA Noise Model Calculations				Noise Source Elevations (in feet)						
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0						
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)						
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644						
VehicleType				REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:				71.78	3.76	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:				82.40	-7.61	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:				86.40	-12.84	-1.03	-1.20	-5.25	0.000	0.000
Vehicle Noise:				77.2	74.8	73.3	70.5	77.8	78.2	
Centerline Distance to Noise Contour (in feet)										
				70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:				244	525	1,131	2,436			
CNEL:				259	558	1,202	2,590			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/ Limonite Ext Road Name: Archibald Av. Road Segment: s/o Limonite Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 45,758 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,576 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA			
Ldn: 184 396 852 1,837				Ldn: 178 383 825 1,777			
CNEL: 195 420 905 1,951				CNEL: 189 407 876 1,888			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/ Limonite Ext Road Name: Archibald Av. Road Segment: s/o 65th St.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 43,565 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,357 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA			
Ldn: 184 396 852 1,837				Ldn: 178 383 825 1,777			
CNEL: 195 420 905 1,951				CNEL: 189 407 876 1,888			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/ Limonite Ext Road Name: Archibald Av. Road Segment: s/o Schleisman Rd.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 36,882 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,688 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA			
Ldn: 159 343 738 1,591				Ldn: 163 350 755 1,626			
CNEL: 169 364 784 1,689				CNEL: 173 372 802 1,727			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/ Limonite Ext Road Name: Ontario Ranch Rd. Road Segment: e/o Archibald Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 27,830 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,783 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 115 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 55.846 Medium Trucks: 55.687 Heavy Trucks: 55.703			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA			
Ldn: 163 350 755 1,626				Ldn: 163 350 755 1,626			
CNEL: 173 372 802 1,727				CNEL: 173 372 802 1,727			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/ Limonite Ext Road Name: Merrill Av. Road Segment: w/o Grove Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 30,501 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,050 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 2.15 1.28 -1.20 -4.61 0.000 0.000 Medium Trucks: 81.00 -9.22 1.31 -1.20 -4.87 0.000 0.000 Heavy Trucks: 85.38 -14.44 1.31 -1.20 -5.50 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 72.4 69.9 69.8 65.2 72.7 73.2 Medium Trucks: 71.9 69.5 67.3 65.5 72.6 73.0 Heavy Trucks: 71.0 68.9 64.9 64.5 71.7 71.9 Vehicle Noise: 76.6 74.2 72.6 69.8 77.1 77.5				Lane Equivalent Distance (in feet)			
				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 131 283 610 1,315 CNEL: 140 301 648 1,396				FWHA Noise Model Calculations			
				VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 2.15 1.28 -1.20 -4.61 0.000 0.000 Medium Trucks: 81.00 -9.22 1.31 -1.20 -4.87 0.000 0.000 Heavy Trucks: 85.38 -14.44 1.31 -1.20 -5.50 0.000 0.000			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/ Limonite Ext Road Name: Merrill Av. Road Segment: w/o Flight Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 34,501 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,450 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 2.69 1.28 -1.20 -4.61 0.000 0.000 Medium Trucks: 81.00 -8.68 1.31 -1.20 -4.87 0.000 0.000 Heavy Trucks: 85.38 -13.91 1.31 -1.20 -5.50 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 73.0 70.4 70.4 65.8 73.2 73.8 Medium Trucks: 72.4 70.0 67.8 66.0 73.2 73.5 Heavy Trucks: 71.6 69.4 65.5 65.0 72.2 72.5 Vehicle Noise: 77.1 74.7 73.1 70.4 77.7 78.1				Lane Equivalent Distance (in feet)			
				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 143 307 662 1,427 CNEL: 152 327 704 1,516				FWHA Noise Model Calculations			
				VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 2.69 1.28 -1.20 -4.61 0.000 0.000 Medium Trucks: 81.00 -8.68 1.31 -1.20 -4.87 0.000 0.000 Heavy Trucks: 85.38 -13.91 1.31 -1.20 -5.50 0.000 0.000			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/ Limonite Ext Road Name: Merrill Av. Road Segment: e/o Hellman Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 31,024 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,102 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 2.23 1.28 -1.20 -4.61 0.000 0.000 Medium Trucks: 81.00 -9.14 1.31 -1.20 -4.87 0.000 0.000 Heavy Trucks: 85.38 -14.37 1.31 -1.20 -5.50 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 72.5 69.9 69.9 65.3 72.7 73.3 Medium Trucks: 72.0 69.6 67.3 65.6 72.7 73.0 Heavy Trucks: 71.1 68.9 65.0 64.6 71.8 72.0 Vehicle Noise: 76.7 74.3 72.6 69.9 77.2 77.6				Lane Equivalent Distance (in feet)			
				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 133 286 617 1,330 CNEL: 141 304 655 1,412				FWHA Noise Model Calculations			
				VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 70.20 2.23 1.28 -1.20 -4.61 0.000 0.000 Medium Trucks: 81.00 -9.14 1.31 -1.20 -4.87 0.000 0.000 Heavy Trucks: 85.38 -14.37 1.31 -1.20 -5.50 0.000 0.000			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/ Limonite Ext Road Name: Merrill Av. Road Segment: e/o Archibald Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 7,905 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 791 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FWHA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 68.46 -3.25 1.28 -1.20 -4.61 0.000 0.000 Medium Trucks: 79.45 -14.62 1.31 -1.20 -4.87 0.000 0.000 Heavy Trucks: 84.25 -19.85 1.31 -1.20 -5.50 0.000 0.000				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 65.3 62.7 62.7 58.1 65.5 66.1 Medium Trucks: 64.9 62.5 60.3 58.5 65.7 66.0 Heavy Trucks: 64.5 62.3 58.4 57.9 65.2 65.4 Vehicle Noise: 69.7 67.3 65.6 63.0 70.2 70.6				Lane Equivalent Distance (in feet)			
				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262			
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 46 98 212 456 CNEL: 48 104 225 484				FWHA Noise Model Calculations			
				VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 68.46 -3.25 1.28 -1.20 -4.61 0.000 0.000 Medium Trucks: 79.45 -14.62 1.31 -1.20 -4.87 0.000 0.000 Heavy Trucks: 84.25 -19.85 1.31 -1.20 -5.50 0.000 0.000			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/ Limonite Ext Road Name: Kimball Av. Road Segment: w/o Hellman Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 27,495 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,750 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 51 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 49.0 feet Centerline Dist. to Observer: 49.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 42.140 Medium Trucks: 41.929 Heavy Trucks: 41.950			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA			
Ldn: 131 283 609 1,311				Ldn: 137 295 635 1,368			
CNEL: 139 300 646 1,393				CNEL: 145 313 675 1,453			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/ Limonite Ext Road Name: Limonite Av. Road Segment: e/o Hellman Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 29,432 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,943 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA			
Ldn: 131 283 609 1,311				Ldn: 137 295 635 1,368			
CNEL: 139 300 646 1,393				CNEL: 145 313 675 1,453			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/ Limonite Ext Road Name: Limonite Av. Road Segment: e/o Archibald Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 47,960 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,796 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA			
Ldn: 189 408 880 1,895				Ldn: 198 426 918 1,977			
CNEL: 201 434 934 2,013				CNEL: 210 452 975 2,100			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/ Limonite Ext Road Name: Limonite Av. Road Segment: e/o Harrison Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 51,100 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,110 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA			
Ldn: 189 408 880 1,895				Ldn: 198 426 918 1,977			
CNEL: 201 434 934 2,013				CNEL: 210 452 975 2,100			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/ Limonite Ext Road Name: Limonite Av. Road Segment: e/o Sumner Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 50,414 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,041 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA			
				65 dBA			
				60 dBA			
				55 dBA			
Ldn:				196 422 909 1,959			
CNEL:				208 448 966 2,081			

Wednesday, May 30, 2018

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/ Limonite Ext Road Name: Limonite Av. Road Segment: e/o Scholar Wy.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 50,647 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,065 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA			
				65 dBA			
				60 dBA			
				55 dBA			
Ldn:				197 423 912 1,965			
CNEL:				209 450 969 2,087			

Wednesday, May 30, 2018

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/o Proj. w/ Limonite Ext Road Name: Limonite Av. Road Segment: e/o Hamner Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 54,882 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,488 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.34% Medium Trucks: 69.1% 10.3% 20.5% 6.66% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA			
				65 dBA			
				60 dBA			
				55 dBA			
Ldn:				177 381 821 1,769			
CNEL:				188 404 871 1,877			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/ Limonite Ext. Road Name: Grove Av. Road Segment: n/o Merrill Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 9,297 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 930 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 60 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.59% Medium Trucks: 69.1% 10.3% 20.5% 6.47% Heavy Trucks: 72.8% 7.3% 19.8% 1.94%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 40.311 Medium Trucks: 40.091 Heavy Trucks: 40.113			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA			
				65 dBA			
				60 dBA			
				55 dBA			
Ldn:				67 145 312 671			
CNEL:				71 154 331 713			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/ Limonite Ext. Road Name: Hellman Av. Road Segment: n/o Merrill Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 8,840 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 884 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.66% Medium Trucks: 69.1% 10.3% 20.5% 6.41% Heavy Trucks: 72.8% 7.3% 19.8% 1.93%			
Vehicle Mix VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.66% Medium Trucks: 69.1% 10.3% 20.5% 6.41% Heavy Trucks: 72.8% 7.3% 19.8% 1.93%				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Lane Equivalent Distance (in feet) Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.21	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-14.76	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-19.99	-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:	64.7	62.2	62.1	57.5	65.0	65.6	
Medium Trucks:	64.0	61.6	59.4	57.6	64.8	65.1	
Heavy Trucks:	63.2	61.0	57.1	56.6	63.8	64.1	
Vehicle Noise:	68.8	66.4	64.8	62.0	69.3	69.7	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			67	144	309	667	
CNEL:			71	153	329	708	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/ Limonite Ext. Road Name: Hellman Av. Road Segment: s/o Kimball Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 23,884 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,388 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 51 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 49.0 feet Centerline Dist. to Observer: 49.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.46% Medium Trucks: 69.1% 10.3% 20.5% 6.57% Heavy Trucks: 72.8% 7.3% 19.8% 1.97%			
Vehicle Mix VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.46% Medium Trucks: 69.1% 10.3% 20.5% 6.57% Heavy Trucks: 72.8% 7.3% 19.8% 1.97%				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Lane Equivalent Distance (in feet) Autos: 42.140 Medium Trucks: 41.929 Heavy Trucks: 41.950				Lane Equivalent Distance (in feet)			
				Autos: 42.140 Medium Trucks: 41.929 Heavy Trucks: 41.950			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.56	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-9.88	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-15.11	1.04	-1.20	-5.44	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.8	67.3	67.2	62.6	70.1	70.6	
Medium Trucks:	69.4	67.0	64.8	63.0	70.2	70.5	
Heavy Trucks:	69.0	66.8	62.9	62.4	69.6	69.9	
Vehicle Noise:	74.2	71.8	70.1	67.5	74.7	75.1	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			101	218	470	1,013	
CNEL:			107	232	499	1,075	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/ Limonite Ext. Road Name: Archibald Av. Road Segment: n/o Riverside Dr.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 35,723 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,572 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.28% Medium Trucks: 69.1% 10.3% 20.5% 6.62% Heavy Trucks: 72.8% 7.3% 19.8% 2.09%			
Vehicle Mix VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.28% Medium Trucks: 69.1% 10.3% 20.5% 6.62% Heavy Trucks: 72.8% 7.3% 19.8% 2.09%				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Lane Equivalent Distance (in feet) Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.84	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-8.55	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-13.56	-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:	70.8	68.2	68.2	63.6	71.0	71.6	
Medium Trucks:	70.2	67.8	65.6	63.8	71.0	71.3	
Heavy Trucks:	69.6	67.4	63.5	63.0	70.2	70.5	
Vehicle Noise:	75.0	72.6	70.9	68.3	75.5	75.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			173	373	803	1,730	
CNEL:			184	396	852	1,837	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/ Limonite Ext. Road Name: Archibald Av. Road Segment: s/o Riverside Dr.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 43,074 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,307 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix			
				VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.35% Medium Trucks: 69.1% 10.3% 20.5% 6.59% Heavy Trucks: 72.8% 7.3% 19.8% 2.06%			
Vehicle Mix VehicleType Day Evening Night Daily Autos: 66.4% 16.5% 17.1% 91.35% Medium Trucks: 69.1% 10.3% 20.5% 6.59% Heavy Trucks: 72.8% 7.3% 19.8% 2.06%				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Lane Equivalent Distance (in feet) Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.24	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-8.18	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.22	-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:	72.8	70.2	70.2	65.6	73.0	73.6	
Medium Trucks:	72.0	69.6	67.4	65.6	72.7	73.1	
Heavy Trucks:	70.9	68.8	64.8	64.4	71.6	71.8	
Vehicle Noise:	76.7	74.3	72.8	70.0	77.3	77.7	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			226	486	1,048	2,257	
CNEL:			240	517	1,114	2,399	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/ Limonite Ext. Road Name: Archibald Av. Road Segment: s/o Chino Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 41,908 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,191 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.36% Medium Trucks: 69.1% 10.3% 20.5% 6.58% Heavy Trucks: 72.8% 7.3% 19.8% 2.06%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.12	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-8.31	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.34	-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:	72.7	70.1	70.1	65.4	72.9	73.5	
Medium Trucks:	71.9	69.5	67.2	65.5	72.6	72.9	
Heavy Trucks:	70.8	68.7	64.7	64.3	71.5	71.7	
Vehicle Noise:	76.6	74.2	72.6	69.9	77.1	77.5	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			221	477	1,028	2,215	
CNEL:			235	507	1,093	2,354	

Wednesday, May 30, 2018

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/ Limonite Ext. Road Name: Archibald Av. Road Segment: s/o Schaefer Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 39,416 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,942 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.38% Medium Trucks: 69.1% 10.3% 20.5% 6.56% Heavy Trucks: 72.8% 7.3% 19.8% 2.06%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.86	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-8.58	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.61	-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:	72.4	69.8	69.8	65.2	72.6	73.2	
Medium Trucks:	71.6	69.2	67.0	65.2	72.3	72.7	
Heavy Trucks:	70.6	68.4	64.4	64.0	71.2	71.4	
Vehicle Noise:	76.3	73.9	72.4	69.6	76.9	77.3	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			213	458	986	2,125	
CNEL:			226	487	1,049	2,259	

Wednesday, May 30, 2018

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/ Limonite Ext. Road Name: Archibald Av. Road Segment: s/o Ontario Ranch Rd.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 47,979 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,798 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.45% Medium Trucks: 69.1% 10.3% 20.5% 6.51% Heavy Trucks: 72.8% 7.3% 19.8% 2.03%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.71	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-7.76	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.82	-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:	73.2	70.7	70.6	66.0	73.5	74.1	
Medium Trucks:	72.4	70.0	67.8	66.0	73.2	73.5	
Heavy Trucks:	71.3	69.2	65.2	64.8	72.0	72.2	
Vehicle Noise:	77.2	74.8	73.2	70.4	77.7	78.1	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			241	520	1,120	2,413	
CNEL:			256	553	1,191	2,565	

Wednesday, May 30, 2018

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/ Limonite Ext. Road Name: Archibald Av. Road Segment: s/o Eucalyptus Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 49,095 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,909 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.46% Medium Trucks: 69.1% 10.3% 20.5% 6.51% Heavy Trucks: 72.8% 7.3% 19.8% 2.03%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.81	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-7.66	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.73	-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:	73.3	70.8	70.7	66.1	73.6	74.2	
Medium Trucks:	72.5	70.1	67.9	66.1	73.3	73.6	
Heavy Trucks:	71.4	69.3	65.3	64.9	72.1	72.3	
Vehicle Noise:	77.3	74.9	73.3	70.5	77.8	78.2	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			245	528	1,137	2,449	
CNEL:			260	561	1,208	2,603	

Wednesday, May 30, 2018

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/ Limonite Ext. Road Name: Archibald Av. Road Segment: s/o Merrill Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 51,126 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,113 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 93 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 74.0 feet Centerline Dist. to Observer: 74.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.64% Medium Trucks: 69.1% 10.3% 20.5% 6.35% Heavy Trucks: 72.8% 7.3% 19.8% 2.01%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 57.782 Medium Trucks: 57.629 Heavy Trucks: 57.644			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA			
Ldn: 250				538 1,160 2,499			
CNEL: 266				572 1,233 2,657			

Wednesday, May 30, 2018

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/ Limonite Ext. Road Name: Archibald Av. Road Segment: s/o Limonite Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 46,950 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,695 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.56% Medium Trucks: 69.1% 10.3% 20.5% 6.49% Heavy Trucks: 72.8% 7.3% 19.8% 1.95%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA			
Ldn: 185				398 858 1,849			
CNEL: 196				423 912 1,964			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/ Limonite Ext. Road Name: Archibald Av. Road Segment: s/o 65th St.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 44,492 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 4,449 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.52% Medium Trucks: 69.1% 10.3% 20.5% 6.52% Heavy Trucks: 72.8% 7.3% 19.8% 1.96%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA			
Ldn: 179				385 830 1,787			
CNEL: 190				409 881 1,899			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/ Limonite Ext. Road Name: Archibald Av. Road Segment: s/o Schleisman Rd.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 37,412 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,741 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.46% Medium Trucks: 69.1% 10.3% 20.5% 6.57% Heavy Trucks: 72.8% 7.3% 19.8% 1.97%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA			
Ldn: 160				344 741 1,597			
CNEL: 170				365 787 1,696			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/ Limonite Ext. Road Name: Ontario Ranch Rd. Road Segment: e/o Archibald Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 28,161 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,816 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 115 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.44% Medium Trucks: 69.1% 10.3% 20.5% 6.58% Heavy Trucks: 72.8% 7.3% 19.8% 1.98%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 55.846 Medium Trucks: 55.687 Heavy Trucks: 55.703			
Centerline Distance to Noise Contour (in feet)				70 dBA 65 dBA 60 dBA 55 dBA			
Ldn: 163 352 757 1,632				CNEL: 173 373 804 1,733			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/ Limonite Ext. Road Name: Merrill Av. Road Segment: w/o Grove Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 30,855 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,086 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.36% Medium Trucks: 69.1% 10.3% 20.5% 6.60% Heavy Trucks: 72.8% 7.3% 19.8% 2.04%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262			
Centerline Distance to Noise Contour (in feet)				70 dBA 65 dBA 60 dBA 55 dBA			
Ldn: 133 286 616 1,327				CNEL: 141 304 654 1,409			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/ Limonite Ext. Road Name: Merrill Av. Road Segment: w/o Flight Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 35,120 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,512 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.43% Medium Trucks: 69.1% 10.3% 20.5% 6.55% Heavy Trucks: 72.8% 7.3% 19.8% 2.02%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262			
Centerline Distance to Noise Contour (in feet)				70 dBA 65 dBA 60 dBA 55 dBA			
Ldn: 144 311 669 1,442				CNEL: 153 330 711 1,531			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/ Limonite Ext. Road Name: Merrill Av. Road Segment: e/o Hellman Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 32,106 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,211 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.56% Medium Trucks: 69.1% 10.3% 20.5% 6.45% Heavy Trucks: 72.8% 7.3% 19.8% 1.99%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262			
Centerline Distance to Noise Contour (in feet)				70 dBA 65 dBA 60 dBA 55 dBA			
Ldn: 135 291 627 1,350				CNEL: 143 309 665 1,434			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL																							
Scenario: HY 2040 w/ Proj. w/ Limonite Ext. Road Name: Merrill Av. Road Segment: e/o Archibald Av.				Project Name: The Merge Job Number: 11180																			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS																			
Highway Data				Site Conditions (Hard = 10, Soft = 15)																			
Average Daily Traffic (Adt): 8,170 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 817 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix																			
				<table border="1"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>66.4%</td> <td>16.5%</td> <td>17.1%</td> <td>91.62%</td> </tr> <tr> <td>Medium Trucks:</td> <td>69.1%</td> <td>10.3%</td> <td>20.5%</td> <td>6.44%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>72.8%</td> <td>7.3%</td> <td>19.8%</td> <td>1.94%</td> </tr> </tbody> </table>				VehicleType	Day	Evening	Night	Daily	Autos:	66.4%	16.5%	17.1%	91.62%	Medium Trucks:	69.1%	10.3%	20.5%	6.44%	Heavy Trucks:
VehicleType	Day	Evening	Night	Daily																			
Autos:	66.4%	16.5%	17.1%	91.62%																			
Medium Trucks:	69.1%	10.3%	20.5%	6.44%																			
Heavy Trucks:	72.8%	7.3%	19.8%	1.94%																			
				Noise Source Elevations (in feet)																			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0																			
				Lane Equivalent Distance (in feet)																			
				Autos: 40.460 Medium Trucks: 40.241 Heavy Trucks: 40.262																			
FHWA Noise Model Calculations																							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten																
Autos:	68.46	-3.10	1.28	-1.20	-4.61	0.000	0.000																
Medium Trucks:	79.45	-14.62	1.31	-1.20	-4.87	0.000	0.000																
Heavy Trucks:	84.25	-19.85	1.31	-1.20	-5.50	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:	65.4	62.9	62.8	58.2	65.7	66.3																	
Medium Trucks:	64.9	62.5	60.3	58.5	65.7	66.0																	
Heavy Trucks:	64.5	62.3	58.4	57.9	65.2	65.4																	
Vehicle Noise:	69.8	67.4	65.7	63.0	70.3	70.7																	
Centerline Distance to Noise Contour (in feet)																							
				70 dBA	65 dBA	60 dBA	55 dBA																
Ldn:				46	99	213	460																
CNEL:				49	105	226	488																

Wednesday, May 30, 2018

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL																							
Scenario: HY 2040 w/ Proj. w/ Limonite Ext. Road Name: Kimball Av. Road Segment: w/o Hellman Av.				Project Name: The Merge Job Number: 11180																			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS																			
Highway Data				Site Conditions (Hard = 10, Soft = 15)																			
Average Daily Traffic (Adt): 27,958 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,796 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 51 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																			
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 49.0 feet Centerline Dist. to Observer: 49.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix																			
				<table border="1"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>66.4%</td> <td>16.5%</td> <td>17.1%</td> <td>91.48%</td> </tr> <tr> <td>Medium Trucks:</td> <td>69.1%</td> <td>10.3%</td> <td>20.5%</td> <td>6.55%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>72.8%</td> <td>7.3%</td> <td>19.8%</td> <td>1.97%</td> </tr> </tbody> </table>				VehicleType	Day	Evening	Night	Daily	Autos:	66.4%	16.5%	17.1%	91.48%	Medium Trucks:	69.1%	10.3%	20.5%	6.55%	Heavy Trucks:
VehicleType	Day	Evening	Night	Daily																			
Autos:	66.4%	16.5%	17.1%	91.48%																			
Medium Trucks:	69.1%	10.3%	20.5%	6.55%																			
Heavy Trucks:	72.8%	7.3%	19.8%	1.97%																			
				Noise Source Elevations (in feet)																			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0																			
				Lane Equivalent Distance (in feet)																			
				Autos: 42.140 Medium Trucks: 41.929 Heavy Trucks: 41.950																			
FHWA Noise Model Calculations																							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten																
Autos:	70.20	1.78	1.01	-1.20	-4.64	0.000	0.000																
Medium Trucks:	81.00	-9.67	1.04	-1.20	-4.87	0.000	0.000																
Heavy Trucks:	85.38	-14.89	1.04	-1.20	-5.44	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	69.2	69.2	64.6	72.0	72.6																	
Medium Trucks:	71.2	68.8	66.5	64.8	71.9	72.2																	
Heavy Trucks:	70.3	68.2	64.2	63.8	71.0	71.2																	
Vehicle Noise:	75.9	73.5	71.9	69.2	76.4	76.8																	
Centerline Distance to Noise Contour (in feet)																							
				70 dBA	65 dBA	60 dBA	55 dBA																
Ldn:				132	284	611	1,317																
CNEL:				140	301	649	1,399																

Wednesday, May 30, 2018

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL																							
Scenario: HY 2040 w/ Proj. w/ Limonite Ext. Road Name: Limonite Av. Road Segment: e/o Hellman Av.				Project Name: The Merge Job Number: 11180																			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS																			
Highway Data				Site Conditions (Hard = 10, Soft = 15)																			
Average Daily Traffic (Adt): 30,226 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 3,023 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix																			
				<table border="1"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>66.4%</td> <td>16.5%</td> <td>17.1%</td> <td>91.57%</td> </tr> <tr> <td>Medium Trucks:</td> <td>69.1%</td> <td>10.3%</td> <td>20.5%</td> <td>6.48%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>72.8%</td> <td>7.3%</td> <td>19.8%</td> <td>1.95%</td> </tr> </tbody> </table>				VehicleType	Day	Evening	Night	Daily	Autos:	66.4%	16.5%	17.1%	91.57%	Medium Trucks:	69.1%	10.3%	20.5%	6.48%	Heavy Trucks:
VehicleType	Day	Evening	Night	Daily																			
Autos:	66.4%	16.5%	17.1%	91.57%																			
Medium Trucks:	69.1%	10.3%	20.5%	6.48%																			
Heavy Trucks:	72.8%	7.3%	19.8%	1.95%																			
				Noise Source Elevations (in feet)																			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0																			
				Lane Equivalent Distance (in feet)																			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299																			
FHWA Noise Model Calculations																							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten																
Autos:	70.20	2.13	-1.85	-1.20	-4.73	0.000	0.000																
Medium Trucks:	81.00	-9.37	-1.84	-1.20	-4.88	0.000	0.000																
Heavy Trucks:	85.38	-14.60	-1.84	-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:	69.3	66.7	66.7	62.1	69.5	70.1																	
Medium Trucks:	68.6	66.2	63.9	62.2	69.3	69.7																	
Heavy Trucks:	67.7	65.6	61.6	61.2	68.4	68.6																	
Vehicle Noise:	73.4	71.0	69.3	66.6	73.9	74.3																	
Centerline Distance to Noise Contour (in feet)																							
				70 dBA	65 dBA	60 dBA	55 dBA																
Ldn:				138	297	640	1,378																
CNEL:				146	315	680	1,464																

Wednesday, May 30, 2018

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL																							
Scenario: HY 2040 w/ Proj. w/ Limonite Ext. Road Name: Limonite Av. Road Segment: e/o Archibald Av.				Project Name: The Merge Job Number: 11180																			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS																			
Highway Data				Site Conditions (Hard = 10, Soft = 15)																			
Average Daily Traffic (Adt): 50,059 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,006 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																			
Site Data Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Vehicle Mix																			
				<table border="1"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>66.4%</td> <td>16.5%</td> <td>17.1%</td> <td>91.61%</td> </tr> <tr> <td>Medium Trucks:</td> <td>69.1%</td> <td>10.3%</td> <td>20.5%</td> <td>6.40%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>72.8%</td> <td>7.3%</td> <td>19.8%</td> <td>1.99%</td> </tr> </tbody> </table>				VehicleType	Day	Evening	Night	Daily	Autos:	66.4%	16.5%	17.1%	91.61%	Medium Trucks:	69.1%	10.3%	20.5%	6.40%	Heavy Trucks:
VehicleType	Day	Evening	Night	Daily																			
Autos:	66.4%	16.5%	17.1%	91.61%																			
Medium Trucks:	69.1%	10.3%	20.5%	6.40%																			
Heavy Trucks:	72.8%	7.3%	19.8%	1.99%																			
				Noise Source Elevations (in feet)																			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0																			
				Lane Equivalent Distance (in feet)																			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299																			
FHWA Noise Model Calculations																							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten																
Autos:	70.20	4.32	-1.85	-1.20	-4.73	0.000	0.000																
Medium Trucks:	81.00	-7.24	-1.84	-1.20	-4.88	0.000	0.000																
Heavy Trucks:	85.38	-12.30	-1.84	-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:	71.5	68.9	68.9	64.2	71.7	72.3																	
Medium Trucks:	70.7	68.3	66.1	64.3	71.5	71.8																	
Heavy Trucks:	70.0	67.9	63.9	63.5	70.7	70.9																	
Vehicle Noise:	75.6	73.2	71.5	68.8	76.1	76.5																	
Centerline Distance to Noise Contour (in feet)																							
				70 dBA	65 dBA	60 dBA	55 dBA																
Ldn:				193	416	897	1,932																
CNEL:				205	442	953	2,052																

Wednesday, May 30, 2018

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/ Limonite Ext. Road Name: Limonite Av. Road Segment: e/o Harrison Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 53,067 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,307 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.57% Medium Trucks: 69.1% 10.3% 20.5% 6.43% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.57	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-6.97	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.04	-1.84	-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:	71.7	69.2	69.1	64.5	72.0	72.5	
Medium Trucks:	71.0	68.6	66.4	64.6	71.7	72.1	
Heavy Trucks:	70.3	68.1	64.2	63.7	70.9	71.2	
Vehicle Noise:	75.8	73.4	71.8	69.1	76.3	76.7	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				201	433	934	2,012
CNEL:				214	460	992	2,137

Wednesday, May 30, 2018

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/ Limonite Ext. Road Name: Limonite Av. Road Segment: e/o Sumner Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 52,248 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,225 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.55% Medium Trucks: 69.1% 10.3% 20.5% 6.44% Heavy Trucks: 72.8% 7.3% 19.8% 2.00%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.50	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-7.02	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.09	-1.84	-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:	71.7	69.1	69.1	64.4	71.9	72.5	
Medium Trucks:	70.9	68.5	66.3	64.5	71.7	72.0	
Heavy Trucks:	70.2	68.1	64.1	63.7	70.9	71.1	
Vehicle Noise:	75.8	73.4	71.7	69.0	76.3	76.7	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				199	429	925	1,993
CNEL:				212	456	982	2,117

Wednesday, May 30, 2018

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/ Limonite Ext. Road Name: Limonite Av. Road Segment: e/o Scholar Wy.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 52,283 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,228 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.52% Medium Trucks: 69.1% 10.3% 20.5% 6.47% Heavy Trucks: 72.8% 7.3% 19.8% 2.01%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.50	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-7.00	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.08	-1.84	-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:	71.7	69.1	69.1	64.4	71.9	72.5	
Medium Trucks:	71.0	68.6	66.3	64.5	71.7	72.0	
Heavy Trucks:	70.3	68.1	64.1	63.7	70.9	71.1	
Vehicle Noise:	75.8	73.4	71.7	69.0	76.3	76.7	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				200	430	927	1,997
CNEL:				212	457	984	2,121

Wednesday, May 30, 2018

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 w/ Proj. w/ Limonite Ext. Road Name: Limonite Av. Road Segment: e/o Hamner Av.				Project Name: The Merge Job Number: 11180			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 56,121 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 5,612 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet 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 Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 66.4% 16.5% 17.1% 91.45% Medium Trucks: 69.1% 10.3% 20.5% 6.53% Heavy Trucks: 72.8% 7.3% 19.8% 2.03%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.299			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	5.27	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-6.20	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.28	-1.84	-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:	70.7	68.1	68.1	63.5	70.9	71.5	
Medium Trucks:	70.2	67.8	65.6	63.8	71.0	71.3	
Heavy Trucks:	69.9	67.8	63.8	63.4	70.6	70.8	
Vehicle Noise:	75.1	72.7	70.9	68.3	75.6	76.0	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				179	386	832	1,792
CNEL:				190	410	883	1,901

Wednesday, May 30, 2018

APPENDIX 9.1:
OPERATIONAL NOISE LEVEL CALCULATIONS

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STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R1

Source: Roof-Top Air Conditioning Unit
 Condition: Operational

Project Name: The Merge

Job Number: 11180
 Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	198.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	198.0 feet	Noise Source Height:	5.0 feet
Barrier Distance to Observer:	0.0 feet	Observer Height:	5.0 feet
Observer Elevation:	0.0 feet	Barrier Type (0-Wall, 1-Berm):	0
Noise Source Elevation:	30.0 feet	Drop Off Coefficient:	20.0
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	198.0	-32.0	-32.0	-32.0	-32.0	-32.0	-32.0
Shielding (Barrier Attenuation)	198.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		45.2	-32.0	44.1	-32.0	-32.0	46.2
60 Minute Hourly Adjustment		45.2	-32.0	44.1	-32.0	-32.0	46.2

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R1

Source: Shopping Cart Corral
 Condition: Operational

Project Name: The Merge

Job Number: 11180
 Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	952.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	952.0 feet	Noise Source Height:	3.0 feet
Barrier Distance to Observer:	0.0 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
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	72.9	0.0	70.3	0.0	0.0	83.4
Distance Attenuation	952.0	-45.6	-45.6	-45.6	-45.6	-45.6	-45.6
Shielding (Barrier Attenuation)	952.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		27.3	-45.6	24.7	-45.6	-45.6	37.8
60 Minute Hourly Adjustment		27.3	-45.6	24.7	-45.6	-45.6	37.8

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R1

Source: Drive-Through Speakerphone
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	869.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	869.0 feet	Noise Source Height:	3.0 feet
Barrier Distance to Observer:	0.0 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
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)	15.0	62.0	0.0	62.1	0.0	0.0	66.4
Distance Attenuation	869.0	-35.3	-35.3	-35.3	-35.3	-35.3	-35.3
Shielding (Barrier Attenuation)	869.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		26.7	-35.3	26.8	-35.3	-35.3	31.1
60 Minute Hourly Adjustment		26.7	-35.3	26.8	-35.3	-35.3	31.1

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R1

Source: Gas Station Activity
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	606.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	606.0 feet	Noise Source Height:	5.0 feet
Barrier Distance to Observer:	0.0 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
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	68.2	0.0	66.9	0.0	0.0	82.4
Distance Attenuation	606.0	-41.7	-41.7	-41.7	-41.7	-41.7	-41.7
Shielding (Barrier Attenuation)	606.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		26.5	-41.7	25.2	-41.7	-41.7	40.7
60 Minute Hourly Adjustment		26.5	-41.7	25.2	-41.7	-41.7	40.7

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R1

Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	160.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	160.0 feet	Noise Source Height:	5.0 feet
Barrier Distance to Observer:	0.0 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:	15.0
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	60.1	0.0	60.7	0.0	0.0	79.5
Distance Attenuation	160.0	-22.6	-22.6	-22.6	-22.6	-22.6	-22.6
Shielding (Barrier Attenuation)	160.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		37.5	-22.6	38.1	-22.6	-22.6	56.9
60 Minute Hourly Adjustment		37.5	-22.6	38.1	-22.6	-22.6	56.9

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R1

Source: Truck Unloading/Docking Activity
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	341.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	341.0 feet	Noise Source Height:	8.0 feet
Barrier Distance to Observer:	0.0 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
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	341.0	-21.1	-21.1	-21.1	-21.1	-21.1	-21.1
Shielding (Barrier Attenuation)	341.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		46.1	-21.1	46.1	-21.1	-21.1	58.9
60 Minute Hourly Adjustment		46.1	-21.1	46.1	-21.1	-21.1	58.9

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R2

Source: Roof-Top Air Conditioning Unit
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	169.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	169.0 feet	Noise Source Height:	5.0 feet
Barrier Distance to Observer:	0.0 feet	Observer Height:	5.0 feet
Observer Elevation:	0.0 feet	Barrier Type (0-Wall, 1-Berm):	0
Noise Source Elevation:	30.0 feet	Drop Off Coefficient:	20.0
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	169.0	-30.6	-30.6	-30.6	-30.6	-30.6	-30.6
Shielding (Barrier Attenuation)	169.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		46.6	-30.6	45.5	-30.6	-30.6	47.6
60 Minute Hourly Adjustment		46.6	-30.6	45.5	-30.6	-30.6	47.6

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R2

Source: Shopping Cart Corral
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	999.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	999.0 feet	Noise Source Height:	3.0 feet
Barrier Distance to Observer:	0.0 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
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	72.9	0.0	70.3	0.0	0.0	83.4
Distance Attenuation	999.0	-46.0	-46.0	-46.0	-46.0	-46.0	-46.0
Shielding (Barrier Attenuation)	999.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		26.9	-46.0	24.3	-46.0	-46.0	37.4
60 Minute Hourly Adjustment		26.9	-46.0	24.3	-46.0	-46.0	37.4

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R2

Source: Drive-Through Speakerphone
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	1,215.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	1,215.0 feet	Noise Source Height:	3.0 feet
Barrier Distance to Observer:	0.0 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
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)	15.0	62.0	0.0	62.1	0.0	0.0	66.4
Distance Attenuation	1,215.0	-38.2	-38.2	-38.2	-38.2	-38.2	-38.2
Shielding (Barrier Attenuation)	1,215.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		23.8	-38.2	23.9	-38.2	-38.2	28.2
60 Minute Hourly Adjustment		23.8	-38.2	23.9	-38.2	-38.2	28.2

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R2

Source: Gas Station Activity
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	1,211.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	1,211.0 feet	Noise Source Height:	5.0 feet
Barrier Distance to Observer:	0.0 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
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	68.2	0.0	66.9	0.0	0.0	82.4
Distance Attenuation	1,211.0	-47.7	-47.7	-47.7	-47.7	-47.7	-47.7
Shielding (Barrier Attenuation)	1,211.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		20.5	-47.7	19.2	-47.7	-47.7	34.7
60 Minute Hourly Adjustment		20.5	-47.7	19.2	-47.7	-47.7	34.7

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R2

Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	133.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	133.0 feet	Noise Source Height:	5.0 feet
Barrier Distance to Observer:	0.0 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:	15.0
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	60.1	0.0	60.7	0.0	0.0	79.5
Distance Attenuation	133.0	-21.4	-21.4	-21.4	-21.4	-21.4	-21.4
Shielding (Barrier Attenuation)	133.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		38.7	-21.4	39.3	-21.4	-21.4	58.1
60 Minute Hourly Adjustment		38.7	-21.4	39.3	-21.4	-21.4	58.1

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R2

Source: Truck Unloading/Docking Activity
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	202.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	202.0 feet	Noise Source Height:	8.0 feet
Barrier Distance to Observer:	0.0 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
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	202.0	-16.6	-16.6	-16.6	-16.6	-16.6	-16.6
Shielding (Barrier Attenuation)	202.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		50.6	-16.6	50.6	-16.6	-16.6	63.4
60 Minute Hourly Adjustment		50.6	-16.6	50.6	-16.6	-16.6	63.4

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R3

Source: Roof-Top Air Conditioning Unit
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	202.0 feet	Barrier Height:	30.0 feet
Noise Distance to Barrier:	10.0 feet	Noise Source Height:	5.0 feet
Barrier Distance to Observer:	192.0 feet	Observer Height:	5.0 feet
Observer Elevation:	0.0 feet	Barrier Type (0-Wall, 1-Berm):	0
Noise Source Elevation:	30.0 feet	Drop Off Coefficient:	20.0
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	202.0	-32.1	-32.1	-32.1	-32.1	-32.1	-32.1
Shielding (Barrier Attenuation)	10.0	-8.8	-8.8	-8.8	-8.8	-8.8	-8.8
Raw (Distance + Barrier)		36.3	-40.9	35.2	-40.9	-40.9	37.3
60 Minute Hourly Adjustment		36.3	-40.9	35.2	-40.9	-40.9	37.3

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R3

Source: Shopping Cart Corral
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	880.0 feet	Barrier Height:	30.0 feet
Noise Distance to Barrier:	213.0 feet	Noise Source Height:	3.0 feet
Barrier Distance to Observer:	667.0 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
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	72.9	0.0	70.3	0.0	0.0	83.4
Distance Attenuation	880.0	-44.9	-44.9	-44.9	-44.9	-44.9	-44.9
Shielding (Barrier Attenuation)	213.0	-12.5	-12.5	-12.5	-12.5	-12.5	-12.5
Raw (Distance + Barrier)		15.5	-57.4	12.9	-57.4	-57.4	26.0
60 Minute Hourly Adjustment		15.5	-57.4	12.9	-57.4	-57.4	26.0

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R3

Source: Drive-Through Speakerphone
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	1,188.0 feet	Barrier Height:	30.0 feet
Noise Distance to Barrier:	140.0 feet	Noise Source Height:	3.0 feet
Barrier Distance to Observer:	1,048.0 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
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)	15.0	62.0	0.0	62.1	0.0	0.0	66.4
Distance Attenuation	1,188.0	-38.0	-38.0	-38.0	-38.0	-38.0	-38.0
Shielding (Barrier Attenuation)	140.0	-13.4	-13.4	-13.4	-13.4	-13.4	-13.4
Raw (Distance + Barrier)		10.6	-51.4	10.7	-51.4	-51.4	15.0
60 Minute Hourly Adjustment		10.6	-51.4	10.7	-51.4	-51.4	15.0

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R3

Source: Gas Station Activity
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	1,324.0 feet	Barrier Height:	30.0 feet
Noise Distance to Barrier:	90.0 feet	Noise Source Height:	5.0 feet
Barrier Distance to Observer:	1,234.0 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
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	68.2	0.0	66.9	0.0	0.0	82.4
Distance Attenuation	1,324.0	-48.5	-48.5	-48.5	-48.5	-48.5	-48.5
Shielding (Barrier Attenuation)	90.0	-14.2	-14.2	-14.2	-14.2	-14.2	-14.2
Raw (Distance + Barrier)		5.5	-62.7	4.2	-62.7	-62.7	19.7
60 Minute Hourly Adjustment		5.5	-62.7	4.2	-62.7	-62.7	19.7

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R3

Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	50.0 feet	Barrier Height:	6.0 feet
Noise Distance to Barrier:	40.0 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:	15.0
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	60.1	0.0	60.7	0.0	0.0	79.5
Distance Attenuation	50.0	-15.0	-15.0	-15.0	-15.0	-15.0	-15.0
Shielding (Barrier Attenuation)	40.0	-5.6	-5.6	-5.6	-5.6	-5.6	-5.6
Raw (Distance + Barrier)		39.5	-20.6	40.1	-20.6	-20.6	58.9
60 Minute Hourly Adjustment		39.5	-20.6	40.1	-20.6	-20.6	58.9

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R3

Source: Truck Unloading/Docking Activity
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	100.0 feet	Barrier Height:	6.0 feet
Noise Distance to Barrier:	90.0 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
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	100.0	-10.5	-10.5	-10.5	-10.5	-10.5	-10.5
Shielding (Barrier Attenuation)	90.0	-5.3	-5.3	-5.3	-5.3	-5.3	-5.3
Raw (Distance + Barrier)		51.4	-15.8	51.4	-15.8	-15.8	64.2
60 Minute Hourly Adjustment		51.4	-15.8	51.4	-15.8	-15.8	64.2

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R4(1f)

Source: Roof-Top Air Conditioning Unit
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	346.0 feet	Barrier Height:	6.0 feet
Noise Distance to Barrier:	336.0 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:	30.0 feet	Drop Off Coefficient:	20.0
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	346.0	-36.8	-36.8	-36.8	-36.8	-36.8	-36.8
Shielding (Barrier Attenuation)	336.0	-4.9	-4.9	-4.9	-4.9	-4.9	-4.9
Raw (Distance + Barrier)		35.5	-41.7	34.4	-41.7	-41.7	36.5
60 Minute Hourly Adjustment		35.5	-41.7	34.4	-41.7	-41.7	36.5

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R4(1f)

Source: Shopping Cart Corral
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	314.0 feet	Barrier Height:	6.0 feet
Noise Distance to Barrier:	304.0 feet	Noise Source Height:	3.0 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
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	72.9	0.0	70.3	0.0	0.0	83.4
Distance Attenuation	314.0	-36.0	-36.0	-36.0	-36.0	-36.0	-36.0
Shielding (Barrier Attenuation)	304.0	-5.6	-5.6	-5.6	-5.6	-5.6	-5.6
Raw (Distance + Barrier)		31.3	-41.6	28.7	-41.6	-41.6	41.8
60 Minute Hourly Adjustment		31.3	-41.6	28.7	-41.6	-41.6	41.8

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R4(1f)

Project Name: The Merge

Source: Drive-Through Speakerphone

Job Number: 11180

Condition: Operational

Analyst: A. Wolfe

NOISE MODEL INPUTS

<i>Noise Distance to Observer</i>	682.0 feet	Barrier Height:	6.0 feet
<i>Noise Distance to Barrier:</i>	672.0 feet	<i>Noise Source Height:</i>	3.0 feet
<i>Barrier Distance to Observer:</i>	10.0 feet	<i>Observer Height:</i>	5.0 feet
<i>Observer Elevation:</i>	0.0 feet	<i>Barrier Type (0-Wall, 1-Berm):</i>	0
<i>Noise Source Elevation:</i>	0.0 feet	<i>Drop Off Coefficient:</i>	20.0
<i>Barrier Elevation:</i>	0.0 feet		

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

NOISE MODEL PROJECTIONS

<i>Noise Level</i>	<i>Distance (feet)</i>	<i>Leq</i>	<i>L50</i>	<i>L25</i>	<i>L8</i>	<i>L2</i>	<i>Lmax</i>
Reference (Sample)	15.0	62.0	0.0	62.1	0.0	0.0	66.4
Distance Attenuation	682.0	-33.2	-33.2	-33.2	-33.2	-33.2	-33.2
Shielding (Barrier Attenuation)	672.0	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5
Raw (Distance + Barrier)		23.3	-38.7	23.4	-38.7	-38.7	27.7
60 Minute Hourly Adjustment		23.3	-38.7	23.4	-38.7	-38.7	27.7

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R4(1f)

Project Name: The Merge

Source: Gas Station Activity

Job Number: 11180

Condition: Operational

Analyst: A. Wolfe

NOISE MODEL INPUTS

<i>Noise Distance to Observer</i>	1,122.0 feet	Barrier Height:	6.0 feet
<i>Noise Distance to Barrier:</i>	1,112.0 feet	<i>Noise Source Height:</i>	5.0 feet
<i>Barrier Distance to Observer:</i>	10.0 feet	<i>Observer Height:</i>	5.0 feet
<i>Observer Elevation:</i>	0.0 feet	<i>Barrier Type (0-Wall, 1-Berm):</i>	0
<i>Noise Source Elevation:</i>	0.0 feet	<i>Drop Off Coefficient:</i>	20.0
<i>Barrier Elevation:</i>	0.0 feet		

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

NOISE MODEL PROJECTIONS

<i>Noise Level</i>	<i>Distance (feet)</i>	<i>Leq</i>	<i>L50</i>	<i>L25</i>	<i>L8</i>	<i>L2</i>	<i>Lmax</i>
Reference (Sample)	5.0	68.2	0.0	66.9	0.0	0.0	82.4
Distance Attenuation	1,122.0	-47.0	-47.0	-47.0	-47.0	-47.0	-47.0
Shielding (Barrier Attenuation)	1,112.0	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5
Raw (Distance + Barrier)		15.7	-52.5	14.4	-52.5	-52.5	29.9
60 Minute Hourly Adjustment		15.7	-52.5	14.4	-52.5	-52.5	29.9

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R4(1f)

Project Name: The Merge

Source: Parking Lot Vehicle Movements

Job Number: 11180

Condition: Operational

Analyst: A. Wolfe

NOISE MODEL INPUTS

<i>Noise Distance to Observer</i>	50.0 feet	Barrier Height:	6.0 feet
<i>Noise Distance to Barrier:</i>	40.0 feet	<i>Noise Source Height:</i>	5.0 feet
<i>Barrier Distance to Observer:</i>	10.0 feet	<i>Observer Height:</i>	5.0 feet
<i>Observer Elevation:</i>	0.0 feet	<i>Barrier Type (0-Wall, 1-Berm):</i>	0
<i>Noise Source Elevation:</i>	0.0 feet	<i>Drop Off Coefficient:</i>	15.0
<i>Barrier Elevation:</i>	0.0 feet		

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

NOISE MODEL PROJECTIONS

<i>Noise Level</i>	<i>Distance (feet)</i>	<i>Leq</i>	<i>L50</i>	<i>L25</i>	<i>L8</i>	<i>L2</i>	<i>Lmax</i>
Reference (Sample)	5.0	60.1	0.0	60.7	0.0	0.0	79.5
Distance Attenuation	50.0	-15.0	-15.0	-15.0	-15.0	-15.0	-15.0
Shielding (Barrier Attenuation)	40.0	-5.6	-5.6	-5.6	-5.6	-5.6	-5.6
Raw (Distance + Barrier)		39.5	-20.6	40.1	-20.6	-20.6	58.9
60 Minute Hourly Adjustment		39.5	-20.6	40.1	-20.6	-20.6	58.9

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R4(1f)

Project Name: The Merge

Source: Truck Unloading/Docking Activity

Job Number: 11180

Condition: Operational

Analyst: A. Wolfe

NOISE MODEL INPUTS

<i>Noise Distance to Observer</i>	299.0 feet	Barrier Height:	6.0 feet
<i>Noise Distance to Barrier:</i>	289.0 feet	<i>Noise Source Height:</i>	8.0 feet
<i>Barrier Distance to Observer:</i>	10.0 feet	<i>Observer Height:</i>	5.0 feet
<i>Observer Elevation:</i>	0.0 feet	<i>Barrier Type (0-Wall, 1-Berm):</i>	0
<i>Noise Source Elevation:</i>	0.0 feet	<i>Drop Off Coefficient:</i>	20.0
<i>Barrier Elevation:</i>	0.0 feet		

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

NOISE MODEL PROJECTIONS

<i>Noise Level</i>	<i>Distance (feet)</i>	<i>Leq</i>	<i>L50</i>	<i>L25</i>	<i>L8</i>	<i>L2</i>	<i>Lmax</i>
Reference (Sample)	30.0	67.2	0.0	67.2	0.0	0.0	80.0
Distance Attenuation	299.0	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Shielding (Barrier Attenuation)	289.0	-5.4	-5.4	-5.4	-5.4	-5.4	-5.4
Raw (Distance + Barrier)		41.8	-25.4	41.8	-25.4	-25.4	54.6
60 Minute Hourly Adjustment		41.8	-25.4	41.8	-25.4	-25.4	54.6

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R4(2f)

Project Name: The Merge

Source: Roof-Top Air Conditioning Unit

Job Number: 11180

Condition: Operational

Analyst: A. Wolfe

NOISE MODEL INPUTS

<i>Noise Distance to Observer</i>	346.0 feet	Barrier Height:	0.0 feet
<i>Noise Distance to Barrier:</i>	346.0 feet	<i>Noise Source Height:</i>	5.0 feet
<i>Barrier Distance to Observer:</i>	0.0 feet	<i>Observer Height:</i>	5.0 feet
<i>Observer Elevation:</i>	9.0 feet	<i>Barrier Type (0-Wall, 1-Berm):</i>	0
<i>Noise Source Elevation:</i>	30.0 feet	<i>Drop Off Coefficient:</i>	20.0
<i>Barrier Elevation:</i>	0.0 feet		

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

NOISE MODEL PROJECTIONS

<i>Noise Level</i>	<i>Distance (feet)</i>	<i>Leq</i>	<i>L50</i>	<i>L25</i>	<i>L8</i>	<i>L2</i>	<i>Lmax</i>
Reference (Sample)	5.0	77.2	0.0	76.1	0.0	0.0	78.2
Distance Attenuation	346.0	-36.8	-36.8	-36.8	-36.8	-36.8	-36.8
Shielding (Barrier Attenuation)	346.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		40.4	-36.8	39.3	-36.8	-36.8	41.4
60 Minute Hourly Adjustment		40.4	-36.8	39.3	-36.8	-36.8	41.4

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R4(2f)

Project Name: The Merge

Source: Shopping Cart Corral

Job Number: 11180

Condition: Operational

Analyst: A. Wolfe

NOISE MODEL INPUTS

<i>Noise Distance to Observer</i>	314.0 feet	Barrier Height:	0.0 feet
<i>Noise Distance to Barrier:</i>	314.0 feet	<i>Noise Source Height:</i>	3.0 feet
<i>Barrier Distance to Observer:</i>	0.0 feet	<i>Observer Height:</i>	5.0 feet
<i>Observer Elevation:</i>	9.0 feet	<i>Barrier Type (0-Wall, 1-Berm):</i>	0
<i>Noise Source Elevation:</i>	0.0 feet	<i>Drop Off Coefficient:</i>	20.0
<i>Barrier Elevation:</i>	0.0 feet		

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

NOISE MODEL PROJECTIONS

<i>Noise Level</i>	<i>Distance (feet)</i>	<i>Leq</i>	<i>L50</i>	<i>L25</i>	<i>L8</i>	<i>L2</i>	<i>Lmax</i>
Reference (Sample)	5.0	72.9	0.0	70.3	0.0	0.0	83.4
Distance Attenuation	314.0	-36.0	-36.0	-36.0	-36.0	-36.0	-36.0
Shielding (Barrier Attenuation)	314.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		36.9	-36.0	34.3	-36.0	-36.0	47.4
60 Minute Hourly Adjustment		36.9	-36.0	34.3	-36.0	-36.0	47.4

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R4(2f)

Source: Drive-Through Speakerphone
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	682.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	682.0 feet	Noise Source Height:	3.0 feet
Barrier Distance to Observer:	0.0 feet	Observer Height:	5.0 feet
Observer Elevation:	9.0 feet	Barrier Type (0-Wall, 1-Berm):	0
Noise Source Elevation:	0.0 feet	Drop Off Coefficient:	20.0
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)	15.0	62.0	0.0	62.1	0.0	0.0	66.4
Distance Attenuation	682.0	-33.2	-33.2	-33.2	-33.2	-33.2	-33.2
Shielding (Barrier Attenuation)	682.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		28.8	-33.2	28.9	-33.2	-33.2	33.2
60 Minute Hourly Adjustment		28.8	-33.2	28.9	-33.2	-33.2	33.2

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R4(2f)

Source: Gas Station Activity
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	1,122.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	1,122.0 feet	Noise Source Height:	5.0 feet
Barrier Distance to Observer:	0.0 feet	Observer Height:	5.0 feet
Observer Elevation:	9.0 feet	Barrier Type (0-Wall, 1-Berm):	0
Noise Source Elevation:	0.0 feet	Drop Off Coefficient:	20.0
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	68.2	0.0	66.9	0.0	0.0	82.4
Distance Attenuation	1,122.0	-47.0	-47.0	-47.0	-47.0	-47.0	-47.0
Shielding (Barrier Attenuation)	1,122.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		21.2	-47.0	19.9	-47.0	-47.0	35.4
60 Minute Hourly Adjustment		21.2	-47.0	19.9	-47.0	-47.0	35.4

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R4(2f)

Project Name: The Merge

Source: Parking Lot Vehicle Movements

Job Number: 11180

Condition: Operational

Analyst: A. Wolfe

NOISE MODEL INPUTS

<i>Noise Distance to Observer</i>	50.0 feet	Barrier Height:	0.0 feet
<i>Noise Distance to Barrier:</i>	50.0 feet	<i>Noise Source Height:</i>	5.0 feet
<i>Barrier Distance to Observer:</i>	0.0 feet	<i>Observer Height:</i>	5.0 feet
 <i>Observer Elevation:</i>	9.0 feet	 <i>Barrier Type (0-Wall, 1-Berm):</i>	0
<i>Noise Source Elevation:</i>	0.0 feet	<i>Drop Off Coefficient:</i>	15.0
<i>Barrier Elevation:</i>	0.0 feet		

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

NOISE MODEL PROJECTIONS

<i>Noise Level</i>	<i>Distance (feet)</i>	<i>Leq</i>	<i>L50</i>	<i>L25</i>	<i>L8</i>	<i>L2</i>	<i>Lmax</i>
Reference (Sample)	5.0	60.1	0.0	60.7	0.0	0.0	79.5
Distance Attenuation	50.0	-15.0	-15.0	-15.0	-15.0	-15.0	-15.0
Shielding (Barrier Attenuation)	50.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		45.1	-15.0	45.7	-15.0	-15.0	64.5
60 Minute Hourly Adjustment		45.1	-15.0	45.7	-15.0	-15.0	64.5

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R4(2f)

Project Name: The Merge

Source: Truck Unloading/Docking Activity

Job Number: 11180

Condition: Operational

Analyst: A. Wolfe

NOISE MODEL INPUTS

<i>Noise Distance to Observer</i>	299.0 feet	Barrier Height:	0.0 feet
<i>Noise Distance to Barrier:</i>	299.0 feet	<i>Noise Source Height:</i>	8.0 feet
<i>Barrier Distance to Observer:</i>	0.0 feet	<i>Observer Height:</i>	5.0 feet
 <i>Observer Elevation:</i>	9.0 feet	 <i>Barrier Type (0-Wall, 1-Berm):</i>	0
<i>Noise Source Elevation:</i>	0.0 feet	<i>Drop Off Coefficient:</i>	20.0
<i>Barrier Elevation:</i>	0.0 feet		

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

NOISE MODEL PROJECTIONS

<i>Noise Level</i>	<i>Distance (feet)</i>	<i>Leq</i>	<i>L50</i>	<i>L25</i>	<i>L8</i>	<i>L2</i>	<i>Lmax</i>
Reference (Sample)	30.0	67.2	0.0	67.2	0.0	0.0	80.0
Distance Attenuation	299.0	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Shielding (Barrier Attenuation)	299.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		47.2	-20.0	47.2	-20.0	-20.0	60.0
60 Minute Hourly Adjustment		47.2	-20.0	47.2	-20.0	-20.0	60.0

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R5

Source: Roof-Top Air Conditioning Unit
 Condition: Operational

Project Name: The Merge

Job Number: 11180
 Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	941.0 feet	Barrier Height:	6.0 feet
Noise Distance to Barrier:	931.0 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:	30.0 feet	Drop Off Coefficient:	20.0
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	941.0	-45.5	-45.5	-45.5	-45.5	-45.5	-45.5
Shielding (Barrier Attenuation)	931.0	-5.2	-5.2	-5.2	-5.2	-5.2	-5.2
Raw (Distance + Barrier)		26.5	-50.7	25.4	-50.7	-50.7	27.5
60 Minute Hourly Adjustment		26.5	-50.7	25.4	-50.7	-50.7	27.5

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R5

Source: Shopping Cart Corral
 Condition: Operational

Project Name: The Merge

Job Number: 11180
 Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	933.0 feet	Barrier Height:	6.0 feet
Noise Distance to Barrier:	923.0 feet	Noise Source Height:	3.0 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
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	72.9	0.0	70.3	0.0	0.0	83.4
Distance Attenuation	933.0	-45.4	-45.4	-45.4	-45.4	-45.4	-45.4
Shielding (Barrier Attenuation)	923.0	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5
Raw (Distance + Barrier)		22.0	-50.9	19.4	-50.9	-50.9	32.5
60 Minute Hourly Adjustment		22.0	-50.9	19.4	-50.9	-50.9	32.5

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R5

Source: Drive-Through Speakerphone
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	1,176.0 feet	Barrier Height:	6.0 feet
Noise Distance to Barrier:	1,166.0 feet	Noise Source Height:	3.0 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
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)	15.0	62.0	0.0	62.1	0.0	0.0	66.4
Distance Attenuation	1,176.0	-37.9	-37.9	-37.9	-37.9	-37.9	-37.9
Shielding (Barrier Attenuation)	1,166.0	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5
Raw (Distance + Barrier)		18.6	-43.4	18.7	-43.4	-43.4	23.0
60 Minute Hourly Adjustment		18.6	-43.4	18.7	-43.4	-43.4	23.0

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R5

Source: Gas Station Activity
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	1,637.0 feet	Barrier Height:	6.0 feet
Noise Distance to Barrier:	1,627.0 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
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	68.2	0.0	66.9	0.0	0.0	82.4
Distance Attenuation	1,637.0	-50.3	-50.3	-50.3	-50.3	-50.3	-50.3
Shielding (Barrier Attenuation)	1,627.0	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5
Raw (Distance + Barrier)		12.4	-55.8	11.1	-55.8	-55.8	26.6
60 Minute Hourly Adjustment		12.4	-55.8	11.1	-55.8	-55.8	26.6

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R5

Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	588.0 feet	Barrier Height:	6.0 feet
Noise Distance to Barrier:	578.0 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:	15.0
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	60.1	0.0	60.7	0.0	0.0	79.5
Distance Attenuation	588.0	-31.1	-31.1	-31.1	-31.1	-31.1	-31.1
Shielding (Barrier Attenuation)	578.0	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5
Raw (Distance + Barrier)		23.5	-36.6	24.1	-36.6	-36.6	42.9
60 Minute Hourly Adjustment		23.5	-36.6	24.1	-36.6	-36.6	42.9

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R5

Source: Truck Unloading/Docking Activity
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	910.0 feet	Barrier Height:	6.0 feet
Noise Distance to Barrier:	900.0 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
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	910.0	-29.6	-29.6	-29.6	-29.6	-29.6	-29.6
Shielding (Barrier Attenuation)	900.0	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5
Raw (Distance + Barrier)		32.1	-35.1	32.1	-35.1	-35.1	44.9
60 Minute Hourly Adjustment		32.1	-35.1	32.1	-35.1	-35.1	44.9

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R6

Source: Roof-Top Air Conditioning Unit
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	372.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	372.0 feet	Noise Source Height:	5.0 feet
Barrier Distance to Observer:	0.0 feet	Observer Height:	5.0 feet
Observer Elevation:	0.0 feet	Barrier Type (0-Wall, 1-Berm):	0
Noise Source Elevation:	30.0 feet	Drop Off Coefficient:	20.0
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	372.0	-37.4	-37.4	-37.4	-37.4	-37.4	-37.4
Shielding (Barrier Attenuation)	372.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		39.8	-37.4	38.7	-37.4	-37.4	40.8
60 Minute Hourly Adjustment		39.8	-37.4	38.7	-37.4	-37.4	40.8

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R6

Source: Shopping Cart Corral
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	1,028.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	1,028.0 feet	Noise Source Height:	3.0 feet
Barrier Distance to Observer:	0.0 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
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	72.9	0.0	70.3	0.0	0.0	83.4
Distance Attenuation	1,028.0	-46.3	-46.3	-46.3	-46.3	-46.3	-46.3
Shielding (Barrier Attenuation)	1,028.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		26.6	-46.3	24.0	-46.3	-46.3	37.1
60 Minute Hourly Adjustment		26.6	-46.3	24.0	-46.3	-46.3	37.1

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R6

Source: Drive-Through Speakerphone
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	356.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	356.0 feet	Noise Source Height:	3.0 feet
Barrier Distance to Observer:	0.0 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
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)	15.0	62.0	0.0	62.1	0.0	0.0	66.4
Distance Attenuation	356.0	-27.5	-27.5	-27.5	-27.5	-27.5	-27.5
Shielding (Barrier Attenuation)	356.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		34.5	-27.5	34.6	-27.5	-27.5	38.9
60 Minute Hourly Adjustment		34.5	-27.5	34.6	-27.5	-27.5	38.9

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R6

Source: Gas Station Activity
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	322.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	322.0 feet	Noise Source Height:	5.0 feet
Barrier Distance to Observer:	0.0 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
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	68.2	0.0	66.9	0.0	0.0	82.4
Distance Attenuation	322.0	-36.2	-36.2	-36.2	-36.2	-36.2	-36.2
Shielding (Barrier Attenuation)	322.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		32.0	-36.2	30.7	-36.2	-36.2	46.2
60 Minute Hourly Adjustment		32.0	-36.2	30.7	-36.2	-36.2	46.2

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R6

Source: Parking Lot Vehicle Movements
 Condition: Operational

Project Name: The Merge

Job Number: 11180
 Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	250.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	250.0 feet	Noise Source Height:	5.0 feet
Barrier Distance to Observer:	0.0 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:	15.0
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	60.1	0.0	60.7	0.0	0.0	79.5
Distance Attenuation	250.0	-25.5	-25.5	-25.5	-25.5	-25.5	-25.5
Shielding (Barrier Attenuation)	250.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		34.6	-25.5	35.2	-25.5	-25.5	54.0
60 Minute Hourly Adjustment		34.6	-25.5	35.2	-25.5	-25.5	54.0

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R6

Source: Truck Unloading/Docking Activity
 Condition: Operational

Project Name: The Merge

Job Number: 11180
 Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	500.0 feet	Barrier Height:	30.0 feet
Noise Distance to Barrier:	10.0 feet	Noise Source Height:	8.0 feet
Barrier Distance to Observer:	490.0 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
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	500.0	-24.4	-24.4	-24.4	-24.4	-24.4	-24.4
Shielding (Barrier Attenuation)	10.0	-17.6	-17.6	-17.6	-17.6	-17.6	-17.6
Raw (Distance + Barrier)		25.2	-42.0	25.2	-42.0	-42.0	38.0
60 Minute Hourly Adjustment		25.2	-42.0	25.2	-42.0	-42.0	38.0

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R1

Source: Roof-Top Air Conditioning Unit
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	198.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	198.0 feet	Noise Source Height:	5.0 feet
Barrier Distance to Observer:	0.0 feet	Observer Height:	5.0 feet
Observer Elevation:	0.0 feet	Barrier Type (0-Wall, 1-Berm):	0
Noise Source Elevation:	30.0 feet	Drop Off Coefficient:	20.0
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	198.0	-32.0	-32.0	-32.0	-32.0	-32.0	-32.0
Shielding (Barrier Attenuation)	198.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		45.2	-32.0	44.1	-32.0	-32.0	46.2
60 Minute Hourly Adjustment		45.2	-32.0	44.1	-32.0	-32.0	46.2

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R1

Source: Shopping Cart Corral
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	952.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	952.0 feet	Noise Source Height:	3.0 feet
Barrier Distance to Observer:	0.0 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
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	72.9	0.0	70.3	0.0	0.0	83.4
Distance Attenuation	952.0	-45.6	-45.6	-45.6	-45.6	-45.6	-45.6
Shielding (Barrier Attenuation)	952.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		27.3	-45.6	24.7	-45.6	-45.6	37.8
60 Minute Hourly Adjustment		27.3	-45.6	24.7	-45.6	-45.6	37.8

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R1

Source: Drive-Through Speakerphone
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	869.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	869.0 feet	Noise Source Height:	3.0 feet
Barrier Distance to Observer:	0.0 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
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)	15.0	62.0	0.0	62.1	0.0	0.0	66.4
Distance Attenuation	869.0	-35.3	-35.3	-35.3	-35.3	-35.3	-35.3
Shielding (Barrier Attenuation)	869.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		26.7	-35.3	26.8	-35.3	-35.3	31.1
60 Minute Hourly Adjustment		26.7	-35.3	26.8	-35.3	-35.3	31.1

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R1

Source: Gas Station Activity
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	606.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	606.0 feet	Noise Source Height:	5.0 feet
Barrier Distance to Observer:	0.0 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
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	68.2	0.0	66.9	0.0	0.0	82.4
Distance Attenuation	606.0	-41.7	-41.7	-41.7	-41.7	-41.7	-41.7
Shielding (Barrier Attenuation)	606.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		26.5	-41.7	25.2	-41.7	-41.7	40.7
60 Minute Hourly Adjustment		26.5	-41.7	25.2	-41.7	-41.7	40.7

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R1

Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	160.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	160.0 feet	Noise Source Height:	5.0 feet
Barrier Distance to Observer:	0.0 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:	15.0
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	60.1	0.0	60.7	0.0	0.0	79.5
Distance Attenuation	160.0	-22.6	-22.6	-22.6	-22.6	-22.6	-22.6
Shielding (Barrier Attenuation)	160.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		37.5	-22.6	38.1	-22.6	-22.6	56.9
60 Minute Hourly Adjustment		37.5	-22.6	38.1	-22.6	-22.6	56.9

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R1

Source: Truck Unloading/Docking Activity
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	341.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	341.0 feet	Noise Source Height:	8.0 feet
Barrier Distance to Observer:	0.0 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
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	341.0	-21.1	-21.1	-21.1	-21.1	-21.1	-21.1
Shielding (Barrier Attenuation)	341.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		46.1	-21.1	46.1	-21.1	-21.1	58.9
60 Minute Hourly Adjustment		46.1	-21.1	46.1	-21.1	-21.1	58.9

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R2

Source: Roof-Top Air Conditioning Unit
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	169.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	169.0 feet	Noise Source Height:	5.0 feet
Barrier Distance to Observer:	0.0 feet	Observer Height:	5.0 feet
Observer Elevation:	0.0 feet	Barrier Type (0-Wall, 1-Berm):	0
Noise Source Elevation:	30.0 feet	Drop Off Coefficient:	20.0
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	169.0	-30.6	-30.6	-30.6	-30.6	-30.6	-30.6
Shielding (Barrier Attenuation)	169.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		46.6	-30.6	45.5	-30.6	-30.6	47.6
60 Minute Hourly Adjustment		46.6	-30.6	45.5	-30.6	-30.6	47.6

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R2

Source: Shopping Cart Corral
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	999.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	999.0 feet	Noise Source Height:	3.0 feet
Barrier Distance to Observer:	0.0 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
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	72.9	0.0	70.3	0.0	0.0	83.4
Distance Attenuation	999.0	-46.0	-46.0	-46.0	-46.0	-46.0	-46.0
Shielding (Barrier Attenuation)	999.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		26.9	-46.0	24.3	-46.0	-46.0	37.4
60 Minute Hourly Adjustment		26.9	-46.0	24.3	-46.0	-46.0	37.4

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R2

Source: Drive-Through Speakerphone
Condition: Operational

Project Name: The Merge

Job Number: 11180

Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	1,215.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	1,215.0 feet	Noise Source Height:	3.0 feet
Barrier Distance to Observer:	0.0 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
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)	15.0	62.0	0.0	62.1	0.0	0.0	66.4
Distance Attenuation	1,215.0	-38.2	-38.2	-38.2	-38.2	-38.2	-38.2
Shielding (Barrier Attenuation)	1,215.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		23.8	-38.2	23.9	-38.2	-38.2	28.2
60 Minute Hourly Adjustment		23.8	-38.2	23.9	-38.2	-38.2	28.2

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R2

Source: Gas Station Activity
Condition: Operational

Project Name: The Merge

Job Number: 11180

Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	1,211.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	1,211.0 feet	Noise Source Height:	5.0 feet
Barrier Distance to Observer:	0.0 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
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	68.2	0.0	66.9	0.0	0.0	82.4
Distance Attenuation	1,211.0	-47.7	-47.7	-47.7	-47.7	-47.7	-47.7
Shielding (Barrier Attenuation)	1,211.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		20.5	-47.7	19.2	-47.7	-47.7	34.7
60 Minute Hourly Adjustment		20.5	-47.7	19.2	-47.7	-47.7	34.7

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R2	<i>Project Name: The Merge</i>
Source: Parking Lot Vehicle Movements	<i>Job Number: 11180</i>
Condition: Operational	<i>Analyst: A. Wolfe</i>

NOISE MODEL INPUTS

<i>Noise Distance to Observer</i>	133.0 feet	Barrier Height:	0.0 feet
<i>Noise Distance to Barrier:</i>	133.0 feet	<i>Noise Source Height:</i>	5.0 feet
<i>Barrier Distance to Observer:</i>	0.0 feet	<i>Observer Height:</i>	5.0 feet
<i>Observer Elevation:</i>	0.0 feet	<i>Barrier Type (0-Wall, 1-Berm):</i>	0
<i>Noise Source Elevation:</i>	0.0 feet	<i>Drop Off Coefficient:</i>	15.0
<i>Barrier Elevation:</i>	0.0 feet		
		20 = 6 dBA per doubling of distance	
		15 = 4.5 dBA per doubling of distance	

NOISE MODEL PROJECTIONS

<i>Noise Level</i>	<i>Distance (feet)</i>	<i>Leq</i>	<i>L50</i>	<i>L25</i>	<i>L8</i>	<i>L2</i>	<i>Lmax</i>
Reference (Sample)	5.0	60.1	0.0	60.7	0.0	0.0	79.5
Distance Attenuation	133.0	-21.4	-21.4	-21.4	-21.4	-21.4	-21.4
Shielding (Barrier Attenuation)	133.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		38.7	-21.4	39.3	-21.4	-21.4	58.1
60 Minute Hourly Adjustment		38.7	-21.4	39.3	-21.4	-21.4	58.1

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R2	<i>Project Name: The Merge</i>
Source: Truck Unloading/Docking Activity	<i>Job Number: 11180</i>
Condition: Operational	<i>Analyst: A. Wolfe</i>

NOISE MODEL INPUTS

<i>Noise Distance to Observer</i>	202.0 feet	Barrier Height:	0.0 feet
<i>Noise Distance to Barrier:</i>	202.0 feet	<i>Noise Source Height:</i>	8.0 feet
<i>Barrier Distance to Observer:</i>	0.0 feet	<i>Observer Height:</i>	5.0 feet
<i>Observer Elevation:</i>	0.0 feet	<i>Barrier Type (0-Wall, 1-Berm):</i>	0
<i>Noise Source Elevation:</i>	0.0 feet	<i>Drop Off Coefficient:</i>	20.0
<i>Barrier Elevation:</i>	0.0 feet		
		20 = 6 dBA per doubling of distance	
		15 = 4.5 dBA per doubling of distance	

NOISE MODEL PROJECTIONS

<i>Noise Level</i>	<i>Distance (feet)</i>	<i>Leq</i>	<i>L50</i>	<i>L25</i>	<i>L8</i>	<i>L2</i>	<i>Lmax</i>
Reference (Sample)	30.0	67.2	0.0	67.2	0.0	0.0	80.0
Distance Attenuation	202.0	-16.6	-16.6	-16.6	-16.6	-16.6	-16.6
Shielding (Barrier Attenuation)	202.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		50.6	-16.6	50.6	-16.6	-16.6	63.4
60 Minute Hourly Adjustment		50.6	-16.6	50.6	-16.6	-16.6	63.4

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R3

Source: Roof-Top Air Conditioning Unit
 Condition: Operational

Project Name: The Merge

Job Number: 11180
 Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	202.0 feet	Barrier Height:	30.0 feet
Noise Distance to Barrier:	10.0 feet	Noise Source Height:	5.0 feet
Barrier Distance to Observer:	192.0 feet	Observer Height:	5.0 feet
Observer Elevation:	0.0 feet	Barrier Type (0-Wall, 1-Berm):	0
Noise Source Elevation:	30.0 feet	Drop Off Coefficient:	20.0
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	202.0	-32.1	-32.1	-32.1	-32.1	-32.1	-32.1
Shielding (Barrier Attenuation)	10.0	-8.8	-8.8	-8.8	-8.8	-8.8	-8.8
Raw (Distance + Barrier)		36.3	-40.9	35.2	-40.9	-40.9	37.3
60 Minute Hourly Adjustment		36.3	-40.9	35.2	-40.9	-40.9	37.3

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R3

Source: Shopping Cart Corral
 Condition: Operational

Project Name: The Merge

Job Number: 11180
 Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	880.0 feet	Barrier Height:	30.0 feet
Noise Distance to Barrier:	213.0 feet	Noise Source Height:	3.0 feet
Barrier Distance to Observer:	667.0 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
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	72.9	0.0	70.3	0.0	0.0	83.4
Distance Attenuation	880.0	-44.9	-44.9	-44.9	-44.9	-44.9	-44.9
Shielding (Barrier Attenuation)	213.0	-12.5	-12.5	-12.5	-12.5	-12.5	-12.5
Raw (Distance + Barrier)		15.5	-57.4	12.9	-57.4	-57.4	26.0
60 Minute Hourly Adjustment		15.5	-57.4	12.9	-57.4	-57.4	26.0

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R3

Source: Drive-Through Speakerphone
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	1,188.0 feet	Barrier Height:	30.0 feet
Noise Distance to Barrier:	140.0 feet	Noise Source Height:	3.0 feet
Barrier Distance to Observer:	1,048.0 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
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)	15.0	62.0	0.0	62.1	0.0	0.0	66.4
Distance Attenuation	1,188.0	-38.0	-38.0	-38.0	-38.0	-38.0	-38.0
Shielding (Barrier Attenuation)	140.0	-13.4	-13.4	-13.4	-13.4	-13.4	-13.4
Raw (Distance + Barrier)		10.6	-51.4	10.7	-51.4	-51.4	15.0
60 Minute Hourly Adjustment		10.6	-51.4	10.7	-51.4	-51.4	15.0

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R3

Source: Gas Station Activity
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	1,324.0 feet	Barrier Height:	30.0 feet
Noise Distance to Barrier:	90.0 feet	Noise Source Height:	5.0 feet
Barrier Distance to Observer:	1,234.0 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
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	68.2	0.0	66.9	0.0	0.0	82.4
Distance Attenuation	1,324.0	-48.5	-48.5	-48.5	-48.5	-48.5	-48.5
Shielding (Barrier Attenuation)	90.0	-14.2	-14.2	-14.2	-14.2	-14.2	-14.2
Raw (Distance + Barrier)		5.5	-62.7	4.2	-62.7	-62.7	19.7
60 Minute Hourly Adjustment		5.5	-62.7	4.2	-62.7	-62.7	19.7

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R3

Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	50.0 feet	Barrier Height:	6.0 feet
Noise Distance to Barrier:	40.0 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:	15.0
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	60.1	0.0	60.7	0.0	0.0	79.5
Distance Attenuation	50.0	-15.0	-15.0	-15.0	-15.0	-15.0	-15.0
Shielding (Barrier Attenuation)	40.0	-5.6	-5.6	-5.6	-5.6	-5.6	-5.6
Raw (Distance + Barrier)		39.5	-20.6	40.1	-20.6	-20.6	58.9
60 Minute Hourly Adjustment		39.5	-20.6	40.1	-20.6	-20.6	58.9

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R3

Source: Truck Unloading/Docking Activity
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	100.0 feet	Barrier Height:	10.0 feet
Noise Distance to Barrier:	10.0 feet	Noise Source Height:	8.0 feet
Barrier Distance to Observer:	90.0 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
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	100.0	-10.5	-10.5	-10.5	-10.5	-10.5	-10.5
Shielding (Barrier Attenuation)	10.0	-7.4	-7.4	-7.4	-7.4	-7.4	-7.4
Raw (Distance + Barrier)		49.3	-17.9	49.3	-17.9	-17.9	62.1
60 Minute Hourly Adjustment		49.3	-17.9	49.3	-17.9	-17.9	62.1

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R4(1f)

Source: Roof-Top Air Conditioning Unit
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	346.0 feet	Barrier Height:	6.0 feet
Noise Distance to Barrier:	336.0 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:	30.0 feet	Drop Off Coefficient:	20.0
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	346.0	-36.8	-36.8	-36.8	-36.8	-36.8	-36.8
Shielding (Barrier Attenuation)	336.0	-4.9	-4.9	-4.9	-4.9	-4.9	-4.9
Raw (Distance + Barrier)		35.5	-41.7	34.4	-41.7	-41.7	36.5
60 Minute Hourly Adjustment		35.5	-41.7	34.4	-41.7	-41.7	36.5

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R4(1f)

Source: Shopping Cart Corral
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	314.0 feet	Barrier Height:	6.0 feet
Noise Distance to Barrier:	304.0 feet	Noise Source Height:	3.0 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
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	72.9	0.0	70.3	0.0	0.0	83.4
Distance Attenuation	314.0	-36.0	-36.0	-36.0	-36.0	-36.0	-36.0
Shielding (Barrier Attenuation)	304.0	-5.6	-5.6	-5.6	-5.6	-5.6	-5.6
Raw (Distance + Barrier)		31.3	-41.6	28.7	-41.6	-41.6	41.8
60 Minute Hourly Adjustment		31.3	-41.6	28.7	-41.6	-41.6	41.8

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R4(1f)

Project Name: The Merge

Source: Drive-Through Speakerphone

Job Number: 11180

Condition: Operational

Analyst: A. Wolfe

NOISE MODEL INPUTS

<i>Noise Distance to Observer</i>	682.0 feet	Barrier Height:	6.0 feet
<i>Noise Distance to Barrier:</i>	672.0 feet	<i>Noise Source Height:</i>	3.0 feet
<i>Barrier Distance to Observer:</i>	10.0 feet	<i>Observer Height:</i>	5.0 feet
<i>Observer Elevation:</i>	0.0 feet	<i>Barrier Type (0-Wall, 1-Berm):</i>	0
<i>Noise Source Elevation:</i>	0.0 feet	<i>Drop Off Coefficient:</i>	20.0
<i>Barrier Elevation:</i>	0.0 feet		

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

NOISE MODEL PROJECTIONS

<i>Noise Level</i>	<i>Distance (feet)</i>	<i>Leq</i>	<i>L50</i>	<i>L25</i>	<i>L8</i>	<i>L2</i>	<i>Lmax</i>
Reference (Sample)	15.0	62.0	0.0	62.1	0.0	0.0	66.4
Distance Attenuation	682.0	-33.2	-33.2	-33.2	-33.2	-33.2	-33.2
Shielding (Barrier Attenuation)	672.0	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5
Raw (Distance + Barrier)		23.3	-38.7	23.4	-38.7	-38.7	27.7
60 Minute Hourly Adjustment		23.3	-38.7	23.4	-38.7	-38.7	27.7

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R4(1f)

Project Name: The Merge

Source: Gas Station Activity

Job Number: 11180

Condition: Operational

Analyst: A. Wolfe

NOISE MODEL INPUTS

<i>Noise Distance to Observer</i>	1,122.0 feet	Barrier Height:	6.0 feet
<i>Noise Distance to Barrier:</i>	1,112.0 feet	<i>Noise Source Height:</i>	5.0 feet
<i>Barrier Distance to Observer:</i>	10.0 feet	<i>Observer Height:</i>	5.0 feet
<i>Observer Elevation:</i>	0.0 feet	<i>Barrier Type (0-Wall, 1-Berm):</i>	0
<i>Noise Source Elevation:</i>	0.0 feet	<i>Drop Off Coefficient:</i>	20.0
<i>Barrier Elevation:</i>	0.0 feet		

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

NOISE MODEL PROJECTIONS

<i>Noise Level</i>	<i>Distance (feet)</i>	<i>Leq</i>	<i>L50</i>	<i>L25</i>	<i>L8</i>	<i>L2</i>	<i>Lmax</i>
Reference (Sample)	5.0	68.2	0.0	66.9	0.0	0.0	82.4
Distance Attenuation	1,122.0	-47.0	-47.0	-47.0	-47.0	-47.0	-47.0
Shielding (Barrier Attenuation)	1,112.0	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5
Raw (Distance + Barrier)		15.7	-52.5	14.4	-52.5	-52.5	29.9
60 Minute Hourly Adjustment		15.7	-52.5	14.4	-52.5	-52.5	29.9

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R4(1f)

Project Name: The Merge

Source: Parking Lot Vehicle Movements

Job Number: 11180

Condition: Operational

Analyst: A. Wolfe

NOISE MODEL INPUTS

<i>Noise Distance to Observer</i>	50.0 feet	Barrier Height:	6.0 feet
<i>Noise Distance to Barrier:</i>	40.0 feet	<i>Noise Source Height:</i>	5.0 feet
<i>Barrier Distance to Observer:</i>	10.0 feet	<i>Observer Height:</i>	5.0 feet
<i>Observer Elevation:</i>	0.0 feet	<i>Barrier Type (0-Wall, 1-Berm):</i>	0
<i>Noise Source Elevation:</i>	0.0 feet	<i>Drop Off Coefficient:</i>	15.0
<i>Barrier Elevation:</i>	0.0 feet		

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

NOISE MODEL PROJECTIONS

<i>Noise Level</i>	<i>Distance (feet)</i>	<i>Leq</i>	<i>L50</i>	<i>L25</i>	<i>L8</i>	<i>L2</i>	<i>Lmax</i>
Reference (Sample)	5.0	60.1	0.0	60.7	0.0	0.0	79.5
Distance Attenuation	50.0	-15.0	-15.0	-15.0	-15.0	-15.0	-15.0
Shielding (Barrier Attenuation)	40.0	-5.6	-5.6	-5.6	-5.6	-5.6	-5.6
Raw (Distance + Barrier)		39.5	-20.6	40.1	-20.6	-20.6	58.9
60 Minute Hourly Adjustment		39.5	-20.6	40.1	-20.6	-20.6	58.9

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R4(1f)

Project Name: The Merge

Source: Truck Unloading/Docking Activity

Job Number: 11180

Condition: Operational

Analyst: A. Wolfe

NOISE MODEL INPUTS

<i>Noise Distance to Observer</i>	299.0 feet	Barrier Height:	10.0 feet
<i>Noise Distance to Barrier:</i>	10.0 feet	<i>Noise Source Height:</i>	8.0 feet
<i>Barrier Distance to Observer:</i>	289.0 feet	<i>Observer Height:</i>	5.0 feet
<i>Observer Elevation:</i>	0.0 feet	<i>Barrier Type (0-Wall, 1-Berm):</i>	0
<i>Noise Source Elevation:</i>	0.0 feet	<i>Drop Off Coefficient:</i>	20.0
<i>Barrier Elevation:</i>	0.0 feet		

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

NOISE MODEL PROJECTIONS

<i>Noise Level</i>	<i>Distance (feet)</i>	<i>Leq</i>	<i>L50</i>	<i>L25</i>	<i>L8</i>	<i>L2</i>	<i>Lmax</i>
Reference (Sample)	30.0	67.2	0.0	67.2	0.0	0.0	80.0
Distance Attenuation	299.0	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Shielding (Barrier Attenuation)	10.0	-6.9	-6.9	-6.9	-6.9	-6.9	-6.9
Raw (Distance + Barrier)		40.3	-26.9	40.3	-26.9	-26.9	53.1
60 Minute Hourly Adjustment		40.3	-26.9	40.3	-26.9	-26.9	53.1

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R4(2f)

Project Name: The Merge

Source: Roof-Top Air Conditioning Unit

Job Number: 11180

Condition: Operational

Analyst: A. Wolfe

NOISE MODEL INPUTS

<i>Noise Distance to Observer</i>	346.0 feet	Barrier Height:	0.0 feet
<i>Noise Distance to Barrier:</i>	346.0 feet	<i>Noise Source Height:</i>	5.0 feet
<i>Barrier Distance to Observer:</i>	0.0 feet	<i>Observer Height:</i>	5.0 feet
<i>Observer Elevation:</i>	9.0 feet	<i>Barrier Type (0-Wall, 1-Berm):</i>	0
<i>Noise Source Elevation:</i>	30.0 feet	<i>Drop Off Coefficient:</i>	20.0
<i>Barrier Elevation:</i>	0.0 feet		

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

NOISE MODEL PROJECTIONS

<i>Noise Level</i>	<i>Distance (feet)</i>	<i>Leq</i>	<i>L50</i>	<i>L25</i>	<i>L8</i>	<i>L2</i>	<i>Lmax</i>
Reference (Sample)	5.0	77.2	0.0	76.1	0.0	0.0	78.2
Distance Attenuation	346.0	-36.8	-36.8	-36.8	-36.8	-36.8	-36.8
Shielding (Barrier Attenuation)	346.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		40.4	-36.8	39.3	-36.8	-36.8	41.4
60 Minute Hourly Adjustment		40.4	-36.8	39.3	-36.8	-36.8	41.4

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R4(2f)

Project Name: The Merge

Source: Shopping Cart Corral

Job Number: 11180

Condition: Operational

Analyst: A. Wolfe

NOISE MODEL INPUTS

<i>Noise Distance to Observer</i>	314.0 feet	Barrier Height:	0.0 feet
<i>Noise Distance to Barrier:</i>	314.0 feet	<i>Noise Source Height:</i>	3.0 feet
<i>Barrier Distance to Observer:</i>	0.0 feet	<i>Observer Height:</i>	5.0 feet
<i>Observer Elevation:</i>	9.0 feet	<i>Barrier Type (0-Wall, 1-Berm):</i>	0
<i>Noise Source Elevation:</i>	0.0 feet	<i>Drop Off Coefficient:</i>	20.0
<i>Barrier Elevation:</i>	0.0 feet		

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

NOISE MODEL PROJECTIONS

<i>Noise Level</i>	<i>Distance (feet)</i>	<i>Leq</i>	<i>L50</i>	<i>L25</i>	<i>L8</i>	<i>L2</i>	<i>Lmax</i>
Reference (Sample)	5.0	72.9	0.0	70.3	0.0	0.0	83.4
Distance Attenuation	314.0	-36.0	-36.0	-36.0	-36.0	-36.0	-36.0
Shielding (Barrier Attenuation)	314.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		36.9	-36.0	34.3	-36.0	-36.0	47.4
60 Minute Hourly Adjustment		36.9	-36.0	34.3	-36.0	-36.0	47.4

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R4(2f)

Project Name: The Merge

Source: Drive-Through Speakerphone

Job Number: 11180

Condition: Operational

Analyst: A. Wolfe

NOISE MODEL INPUTS

<i>Noise Distance to Observer</i>	682.0 feet	Barrier Height:	0.0 feet
<i>Noise Distance to Barrier:</i>	682.0 feet	<i>Noise Source Height:</i>	3.0 feet
<i>Barrier Distance to Observer:</i>	0.0 feet	<i>Observer Height:</i>	5.0 feet
<i>Observer Elevation:</i>	9.0 feet	<i>Barrier Type (0-Wall, 1-Berm):</i>	0
<i>Noise Source Elevation:</i>	0.0 feet	<i>Drop Off Coefficient:</i>	20.0
<i>Barrier Elevation:</i>	0.0 feet		

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

NOISE MODEL PROJECTIONS

<i>Noise Level</i>	<i>Distance (feet)</i>	<i>Leq</i>	<i>L50</i>	<i>L25</i>	<i>L8</i>	<i>L2</i>	<i>Lmax</i>
Reference (Sample)	15.0	62.0	0.0	62.1	0.0	0.0	66.4
Distance Attenuation	682.0	-33.2	-33.2	-33.2	-33.2	-33.2	-33.2
Shielding (Barrier Attenuation)	682.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		28.8	-33.2	28.9	-33.2	-33.2	33.2
60 Minute Hourly Adjustment		28.8	-33.2	28.9	-33.2	-33.2	33.2

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R4(2f)

Project Name: The Merge

Source: Gas Station Activity

Job Number: 11180

Condition: Operational

Analyst: A. Wolfe

NOISE MODEL INPUTS

<i>Noise Distance to Observer</i>	1,122.0 feet	Barrier Height:	0.0 feet
<i>Noise Distance to Barrier:</i>	1,122.0 feet	<i>Noise Source Height:</i>	5.0 feet
<i>Barrier Distance to Observer:</i>	0.0 feet	<i>Observer Height:</i>	5.0 feet
<i>Observer Elevation:</i>	9.0 feet	<i>Barrier Type (0-Wall, 1-Berm):</i>	0
<i>Noise Source Elevation:</i>	0.0 feet	<i>Drop Off Coefficient:</i>	20.0
<i>Barrier Elevation:</i>	0.0 feet		

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

NOISE MODEL PROJECTIONS

<i>Noise Level</i>	<i>Distance (feet)</i>	<i>Leq</i>	<i>L50</i>	<i>L25</i>	<i>L8</i>	<i>L2</i>	<i>Lmax</i>
Reference (Sample)	5.0	68.2	0.0	66.9	0.0	0.0	82.4
Distance Attenuation	1,122.0	-47.0	-47.0	-47.0	-47.0	-47.0	-47.0
Shielding (Barrier Attenuation)	1,122.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		21.2	-47.0	19.9	-47.0	-47.0	35.4
60 Minute Hourly Adjustment		21.2	-47.0	19.9	-47.0	-47.0	35.4

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R4(2f)

Project Name: The Merge

Source: Parking Lot Vehicle Movements

Job Number: 11180

Condition: Operational

Analyst: A. Wolfe

NOISE MODEL INPUTS

<i>Noise Distance to Observer</i>	50.0 feet	Barrier Height:	0.0 feet
<i>Noise Distance to Barrier:</i>	50.0 feet	<i>Noise Source Height:</i>	5.0 feet
<i>Barrier Distance to Observer:</i>	0.0 feet	<i>Observer Height:</i>	5.0 feet
 <i>Observer Elevation:</i>	9.0 feet	<i>Barrier Type (0-Wall, 1-Berm):</i>	0
<i>Noise Source Elevation:</i>	0.0 feet	<i>Drop Off Coefficient:</i>	15.0
<i>Barrier Elevation:</i>	0.0 feet		

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

NOISE MODEL PROJECTIONS

<i>Noise Level</i>	<i>Distance (feet)</i>	<i>Leq</i>	<i>L50</i>	<i>L25</i>	<i>L8</i>	<i>L2</i>	<i>Lmax</i>
Reference (Sample)	5.0	60.1	0.0	60.7	0.0	0.0	79.5
Distance Attenuation	50.0	-15.0	-15.0	-15.0	-15.0	-15.0	-15.0
Shielding (Barrier Attenuation)	50.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		45.1	-15.0	45.7	-15.0	-15.0	64.5
60 Minute Hourly Adjustment		45.1	-15.0	45.7	-15.0	-15.0	64.5

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R4(2f)

Project Name: The Merge

Source: Truck Unloading/Docking Activity

Job Number: 11180

Condition: Operational

Analyst: A. Wolfe

NOISE MODEL INPUTS

<i>Noise Distance to Observer</i>	299.0 feet	Barrier Height:	10.0 feet
<i>Noise Distance to Barrier:</i>	10.0 feet	<i>Noise Source Height:</i>	8.0 feet
<i>Barrier Distance to Observer:</i>	289.0 feet	<i>Observer Height:</i>	5.0 feet
 <i>Observer Elevation:</i>	9.0 feet	<i>Barrier Type (0-Wall, 1-Berm):</i>	0
<i>Noise Source Elevation:</i>	0.0 feet	<i>Drop Off Coefficient:</i>	20.0
<i>Barrier Elevation:</i>	0.0 feet		

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

NOISE MODEL PROJECTIONS

<i>Noise Level</i>	<i>Distance (feet)</i>	<i>Leq</i>	<i>L50</i>	<i>L25</i>	<i>L8</i>	<i>L2</i>	<i>Lmax</i>
Reference (Sample)	30.0	67.2	0.0	67.2	0.0	0.0	80.0
Distance Attenuation	299.0	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Shielding (Barrier Attenuation)	10.0	-6.5	-6.5	-6.5	-6.5	-6.5	-6.5
Raw (Distance + Barrier)		40.7	-26.5	40.7	-26.5	-26.5	53.5
60 Minute Hourly Adjustment		40.7	-26.5	40.7	-26.5	-26.5	53.5

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R5

Source: Roof-Top Air Conditioning Unit
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	941.0 feet	Barrier Height:	6.0 feet
Noise Distance to Barrier:	931.0 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:	30.0 feet	Drop Off Coefficient:	20.0
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	941.0	-45.5	-45.5	-45.5	-45.5	-45.5	-45.5
Shielding (Barrier Attenuation)	931.0	-5.2	-5.2	-5.2	-5.2	-5.2	-5.2
Raw (Distance + Barrier)		26.5	-50.7	25.4	-50.7	-50.7	27.5
60 Minute Hourly Adjustment		26.5	-50.7	25.4	-50.7	-50.7	27.5

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R5

Source: Shopping Cart Corral
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	933.0 feet	Barrier Height:	6.0 feet
Noise Distance to Barrier:	923.0 feet	Noise Source Height:	3.0 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
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	72.9	0.0	70.3	0.0	0.0	83.4
Distance Attenuation	933.0	-45.4	-45.4	-45.4	-45.4	-45.4	-45.4
Shielding (Barrier Attenuation)	923.0	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5
Raw (Distance + Barrier)		22.0	-50.9	19.4	-50.9	-50.9	32.5
60 Minute Hourly Adjustment		22.0	-50.9	19.4	-50.9	-50.9	32.5

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R5

Source: Drive-Through Speakerphone
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	1,176.0 feet	Barrier Height:	6.0 feet
Noise Distance to Barrier:	1,166.0 feet	Noise Source Height:	3.0 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
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)	15.0	62.0	0.0	62.1	0.0	0.0	66.4
Distance Attenuation	1,176.0	-37.9	-37.9	-37.9	-37.9	-37.9	-37.9
Shielding (Barrier Attenuation)	1,166.0	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5
Raw (Distance + Barrier)		18.6	-43.4	18.7	-43.4	-43.4	23.0
60 Minute Hourly Adjustment		18.6	-43.4	18.7	-43.4	-43.4	23.0

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R5

Source: Gas Station Activity
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	1,637.0 feet	Barrier Height:	6.0 feet
Noise Distance to Barrier:	1,627.0 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
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	68.2	0.0	66.9	0.0	0.0	82.4
Distance Attenuation	1,637.0	-50.3	-50.3	-50.3	-50.3	-50.3	-50.3
Shielding (Barrier Attenuation)	1,627.0	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5
Raw (Distance + Barrier)		12.4	-55.8	11.1	-55.8	-55.8	26.6
60 Minute Hourly Adjustment		12.4	-55.8	11.1	-55.8	-55.8	26.6

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R5

Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	588.0 feet	Barrier Height:	6.0 feet
Noise Distance to Barrier:	578.0 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:	15.0
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	60.1	0.0	60.7	0.0	0.0	79.5
Distance Attenuation	588.0	-31.1	-31.1	-31.1	-31.1	-31.1	-31.1
Shielding (Barrier Attenuation)	578.0	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5
Raw (Distance + Barrier)		23.5	-36.6	24.1	-36.6	-36.6	42.9
60 Minute Hourly Adjustment		23.5	-36.6	24.1	-36.6	-36.6	42.9

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R5

Source: Truck Unloading/Docking Activity
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	910.0 feet	Barrier Height:	6.0 feet
Noise Distance to Barrier:	900.0 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
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	910.0	-29.6	-29.6	-29.6	-29.6	-29.6	-29.6
Shielding (Barrier Attenuation)	900.0	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5
Raw (Distance + Barrier)		32.1	-35.1	32.1	-35.1	-35.1	44.9
60 Minute Hourly Adjustment		32.1	-35.1	32.1	-35.1	-35.1	44.9

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R6

Source: Roof-Top Air Conditioning Unit
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	372.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	372.0 feet	Noise Source Height:	5.0 feet
Barrier Distance to Observer:	0.0 feet	Observer Height:	5.0 feet
Observer Elevation:	0.0 feet	Barrier Type (0-Wall, 1-Berm):	0
Noise Source Elevation:	30.0 feet	Drop Off Coefficient:	20.0
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	372.0	-37.4	-37.4	-37.4	-37.4	-37.4	-37.4
Shielding (Barrier Attenuation)	372.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		39.8	-37.4	38.7	-37.4	-37.4	40.8
60 Minute Hourly Adjustment		39.8	-37.4	38.7	-37.4	-37.4	40.8

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R6

Source: Shopping Cart Corral
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	1,028.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	1,028.0 feet	Noise Source Height:	3.0 feet
Barrier Distance to Observer:	0.0 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
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	72.9	0.0	70.3	0.0	0.0	83.4
Distance Attenuation	1,028.0	-46.3	-46.3	-46.3	-46.3	-46.3	-46.3
Shielding (Barrier Attenuation)	1,028.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		26.6	-46.3	24.0	-46.3	-46.3	37.1
60 Minute Hourly Adjustment		26.6	-46.3	24.0	-46.3	-46.3	37.1

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R6

Source: Drive-Through Speakerphone
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	356.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	356.0 feet	Noise Source Height:	3.0 feet
Barrier Distance to Observer:	0.0 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
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)	15.0	62.0	0.0	62.1	0.0	0.0	66.4
Distance Attenuation	356.0	-27.5	-27.5	-27.5	-27.5	-27.5	-27.5
Shielding (Barrier Attenuation)	356.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		34.5	-27.5	34.6	-27.5	-27.5	38.9
60 Minute Hourly Adjustment		34.5	-27.5	34.6	-27.5	-27.5	38.9

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R6

Source: Gas Station Activity
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	322.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	322.0 feet	Noise Source Height:	5.0 feet
Barrier Distance to Observer:	0.0 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
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	68.2	0.0	66.9	0.0	0.0	82.4
Distance Attenuation	322.0	-36.2	-36.2	-36.2	-36.2	-36.2	-36.2
Shielding (Barrier Attenuation)	322.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		32.0	-36.2	30.7	-36.2	-36.2	46.2
60 Minute Hourly Adjustment		32.0	-36.2	30.7	-36.2	-36.2	46.2

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R6

Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	250.0 feet	Barrier Height:	0.0 feet
Noise Distance to Barrier:	250.0 feet	Noise Source Height:	5.0 feet
Barrier Distance to Observer:	0.0 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:	15.0
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	60.1	0.0	60.7	0.0	0.0	79.5
Distance Attenuation	250.0	-25.5	-25.5	-25.5	-25.5	-25.5	-25.5
Shielding (Barrier Attenuation)	250.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		34.6	-25.5	35.2	-25.5	-25.5	54.0
60 Minute Hourly Adjustment		34.6	-25.5	35.2	-25.5	-25.5	54.0

STATIONARY SOURCE NOISE PREDICTION MODEL

8/16/2018

Observer Location: R6

Source: Truck Unloading/Docking Activity
Condition: Operational

Project Name: The Merge

Job Number: 11180
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer:	500.0 feet	Barrier Height:	30.0 feet
Noise Distance to Barrier:	10.0 feet	Noise Source Height:	8.0 feet
Barrier Distance to Observer:	490.0 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
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	500.0	-24.4	-24.4	-24.4	-24.4	-24.4	-24.4
Shielding (Barrier Attenuation)	10.0	-17.6	-17.6	-17.6	-17.6	-17.6	-17.6
Raw (Distance + Barrier)		25.2	-42.0	25.2	-42.0	-42.0	38.0
60 Minute Hourly Adjustment		25.2	-42.0	25.2	-42.0	-42.0	38.0

APPENDIX 9.2:
CADNAA NOISE MODEL INPUTS AND CALCULATIONS

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11180

CadnaA Noise Prediction Model

11180-09 Leq+Grids.cna

Date:

16.08.18

Analyst:

A.Wolfe

Receiver Noise Levels

Name	Level Lr		Limit. Value	Height	Coordinates		
	Day	Day			X	Y	Z
	(dBA)	(dBA)	(m)		(m)	(m)	(m)
R1	23.5	0.0	1.52	a	1875965.06	701688.33	1.52
R2	26.0	0.0	1.52	a	1876194.19	701769.82	1.52
R3	26.6	0.0	1.52	a	1876281.84	701714.38	1.52
R4.1(1F)	41.4	0.0	1.52	a	1876278.18	701476.16	1.52
R4.1(2F)	43.9	0.0	4.27	a	1876278.18	701476.16	4.27
R4.1B	40.3	0.0	1.52	a	1876278.61	701484.37	1.52
R4.2(1F)	43.3	0.0	1.52	a	1876277.81	701461.92	1.52
R4.2(2F)	46.3	0.0	4.27	a	1876277.81	701461.85	4.27
R4.2B	45.8	0.0	1.52	a	1876277.72	701453.05	1.52
R4.3(1F)	48.6	0.0	1.52	a	1876277.05	701440.78	1.52
R4.3(2F)	52.8	0.0	4.27	a	1876277.05	701440.78	4.27
R4.3B	46.6	0.0	1.52	a	1876277.81	701446.77	1.52
R4.4(1F)	47.5	0.0	1.52	a	1876276.75	701426.41	1.52
R4.4(2F)	57.5	0.0	4.27	a	1876276.75	701426.41	4.27
R4.4B	48.1	0.0	1.52	a	1876277.07	701415.22	1.52
R5	30.7	0.0	1.52	a	1876421.20	701351.78	1.52
R6	42.2	0.0	1.52	a	1875830.12	701460.79	1.52

Vertical Area Source(s)

Name	Lw / Li		
	Type	Value	norm.
			dB(A)
Tunnel Exit	Lw	102.8	

Area Source(s)

Name	Lw / Li		K0	Freq.	Direct.
	Type	Value			
		dB(A)	(dB)	(Hz)	
VACUUMS	Lw	86.3	0.0	500	(none)

Barrier(s)

Name	Absorption		Height	
	left	right	Begin	End
			(m)	(m)
NE_Barrier	0.21	0.21	1.83	a
E_Barrier	0.21	0.21	1.83	a
SE_Barrier	0.21	0.21	1.83	a

Building(s)

Name	Absorption	Height	
		Begin	End
		(m)	(m)
BUILDINGS	0.37	6.10	a
BUILDINGS	0.37	6.10	a
BUILDINGS	0.37	6.10	a
BUILDINGS	0.37	6.10	a
BUILDINGS	0.37	6.10	a
BUILDINGS	0.37	6.10	a
BUILDINGS	0.21	9.14	a
BUILDINGS	0.37	6.10	a
BUILDINGS	0.21	9.14	a
BUILDINGS	0.21	9.14	a
BUILDINGS	0.21	9.14	a
BUILDINGS	0.21	9.14	a
BUILDINGS	0.21	9.14	a
BUILDINGS	0.21	6.10	a
BUILDINGS	0.21	3.05	a
BUILDINGS	0.21	9.14	a
BUILDINGS	0.21	3.05	a
BUILDINGS	0.21	3.05	a

Name	Level Lr	Limit. Value	Height		Coordinates		
	Day	Day	(m)	a	X	Y	Z
	(dBA)	(dBA)			(m)	(m)	(m)
R1	22.0	0.0	1.52	a	1875965.06	701688.33	1.52
R2	24.7	0.0	1.52	a	1876194.19	701769.82	1.52
R3	25.2	0.0	1.52	a	1876281.84	701714.38	1.52
R4.1(1F)	39.6	0.0	1.52	a	1876278.18	701476.16	1.52
R4.1(2F)	42.3	0.0	4.27	a	1876278.18	701476.16	4.27
R4.1B	38.4	0.0	1.52	a	1876278.61	701484.37	1.52
R4.2(1F)	41.9	0.0	1.52	a	1876277.81	701461.92	1.52
R4.2(2F)	45.1	0.0	4.27	a	1876277.81	701461.85	4.27
R4.2B	43.0	0.0	1.52	a	1876277.72	701453.05	1.52
R4.3(1F)	47.1	0.0	1.52	a	1876277.05	701440.78	1.52
R4.3(2F)	52.9	0.0	4.27	a	1876277.05	701440.78	4.27
R4.3B	43.6	0.0	1.52	a	1876277.81	701446.77	1.52
R4.4(1F)	47.0	0.0	1.52	a	1876276.75	701426.41	1.52
R4.4(2F)	57.8	0.0	4.27	a	1876276.75	701426.41	4.27
R4.4B	47.0	0.0	1.52	a	1876277.07	701415.22	1.52
R5	29.5	0.0	1.52	a	1876421.20	701351.78	1.52
R6	40.9	0.0	1.52	a	1875830.12	701460.79	1.52

Name	Level Lr	Limit. Value	Height		Coordinates		
	Day	Day	(m)	a	X	Y	Z
	(dBA)	(dBA)			(m)	(m)	(m)
R1	27.4	0.0	1.52	a	1875965.06	701688.33	1.52
R2	30.1	0.0	1.52	a	1876194.19	701769.82	1.52
R3	30.6	0.0	1.52	a	1876281.84	701714.38	1.52
R4.1(1F)	45.1	0.0	1.52	a	1876278.18	701476.16	1.52
R4.1(2F)	47.7	0.0	4.27	a	1876278.18	701476.16	4.27
R4.1B	43.8	0.0	1.52	a	1876278.61	701484.37	1.52
R4.2(1F)	47.4	0.0	1.52	a	1876277.81	701461.92	1.52
R4.2(2F)	50.6	0.0	4.27	a	1876277.81	701461.85	4.27
R4.2B	48.5	0.0	1.52	a	1876277.72	701453.05	1.52
R4.3(1F)	52.6	0.0	1.52	a	1876277.05	701440.78	1.52
R4.3(2F)	58.4	0.0	4.27	a	1876277.05	701440.78	4.27
R4.3B	49.0	0.0	1.52	a	1876277.81	701446.77	1.52
R4.4(1F)	52.4	0.0	1.52	a	1876276.75	701426.41	1.52
R4.4(2F)	63.2	0.0	4.27	a	1876276.75	701426.41	4.27
R4.4B	52.4	0.0	1.52	a	1876277.07	701415.22	1.52
R5	34.9	0.0	1.52	a	1876421.20	701351.78	1.52
R6	46.3	0.0	1.52	a	1875830.12	701460.79	1.52

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