Merrill Commerce Center Specific Plan

NOISE IMPACT ANALYSIS

CITY OF ONTARIO

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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
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	Merrill Commerce Center Specific Plan
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 Merrill Commerce Center Specific Plan development ("Project"). The Project site is located which is located north of Merrill Avenue between Grove Avenue and Carpenter Avenue in the City of Ontario. The total development is proposed to consist of:

- 6,312,000 square feet of high-cube fulfillment center warehouse use and 701,400 square feet of high-cube cold storage warehouse use
- Business Park: 1,441,000 square feet of a mix of uses including merchant wholesale, professional services, professional office, warehouse/storage, and research and development uses (as would fall under ITE Land Use Code 130 – Industrial Park).
- **Total of 8,455,000 square feet**

This study has been prepared consistent with applicable City of Ontario noise standards, and significance criteria based on guidance provided by Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1) In addition, since nearby sensitive receiver locations are located in the adjacent City of Chino, applicable noise level standards are used in this analysis to evaluate potential impacts.

OFF-SITE TRAFFIC NOISE ANALYSIS

Traffic generated by the operation of the Project will influence the traffic noise levels in the surrounding off-site areas. To quantify the off-site traffic noise increases on the surrounding off-site areas, the changes in traffic noise levels on 63 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 *Merrill Commerce Center Specific Plan Traffic Impact Analysis*. (2) To assess the off-site noise level impacts associated with the proposed Project, traffic noise contour boundaries were developed for the following conditions:

- Existing (2019)
- Existing plus Project (E+P), with analysis broken down for:
  - Phase A: Planning Areas 4 and 5
  - Phase A + Phase B: where Phase B is Planning Areas 1, 2, 3, and 6
  - Phase A + Phase B + Phase C: where Phase C is Planning Areas 1A, 3A, 4A, 5A, and 6A
- Opening Year Cumulative (2022) Without Project
- Opening Year Cumulative (2022) With Project (Phase A)
- Opening Year Cumulative (2025) Without Project
- Opening Year Cumulative (2025) With Project (Phase A + Phase B)
- Opening Year Cumulative (2026) Without Project
- Opening Year Cumulative (2026) With Project (Project Buildout – All 3 Phases)
- Horizon Year (2040) Without Project
- Horizon Year (2040) With Project (Project Buildout – All 3 Phases)

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

OPERATIONAL NOISE ANALYSIS

Using reference noise levels to represent the expected operational noise sources from the Merrill Commerce Center Specific Plan site, this analysis estimates the Project-related stationary-source noise levels at nearby sensitive receiver locations. The typical activities associated with the proposed Merrill Commerce Center Specific Plan are anticipated to include cold storage loading dock activities, distribution/warehouse activities, roof-top air conditioning units, and parking lot vehicle movements. Since detailed site plans are not available to support this Specific Plan Noise Impact Analysis, the operational noise analysis assumes all Project operational activity is occurring continuously near the Project site boundaries. This conservative approach overstates reality, since the Project operational activities will occur at different locations throughout the Project site and vary throughout the daytime and nighttime hours.

The operational noise analysis shows that the Project-related stationary-source noise levels at the nearby sensitive receiver locations will exceed the City of Ontario nighttime exterior noise level standards. Therefore, the operational noise level impacts associated with the proposed Project activities, such as the cold storage loading dock activities, distribution/warehouse activities, roof-top air conditioning units, and parking lot vehicle movements, are considered *potentially significant*. With the mitigation measures identified below, Project operational-source noise impacts would be *less than significant*.

- Cold storage loading dock activities and distribution/warehouse facilities shall be designed so that truck bays and loading docks are a minimum of 300 feet away from the property line of sensitive receivers, measured from the dock building door. This distance may be reduced if the site design includes berms or other similar features to appropriately shield and buffer the sensitive receivers from the active truck operations areas.
- Cold storage loading dock activities and distribution/warehouse facilities shall be designed to provide adequate on-site parking for commercial trucks and passenger vehicles and on-site queuing for trucks that is away from sensitive receivers. The general queuing and spill-over of trucks onto surrounding public streets shall be prevented. Commercial trucks shall not be parked in the public road right-of-way or nearby residential areas.
- If a public address (PA) system is being used in conjunction with a warehouse/distribution facility operation, the PA system shall be oriented away from sensitive receivers and the volume set at a level not readily audible past the property line.
- Individual development proposals within the Project site shall demonstrate to the satisfaction of the Lead Agency that noise impacts generated by such proposals would not exceed or be substantially different than noise impacts considered and addressed in this Noise Impact Analysis.

To describe the Project operational noise level contributions, the Project operational noise levels are combined with the existing ambient noise levels measurements for the nearby receiver locations potentially impacted by Project operational noise sources. The difference between the combined Project and ambient noise levels describe the Project noise level contributions to the existing ambient noise environment. The operational noise analysis shows that the Project will generate an unmitigated daytime operational noise level increase of up to 1.2 dBA L_{eq} and an unmitigated nighttime operational noise level increase of up to 1.8 dBA L_{eq} at the nearby receiver locations. The Project-related operational noise level contributions at the sensitive receiver locations will be *less than significant*.

OPERATIONAL VIBRATION ANALYSIS

The operation of the Project site will include heavy trucks moving on site to and from the loading dock areas. Truck vibration levels are dependent on vehicle characteristics, load, speed, and pavement conditions. Typical vibration levels for the Merrill Commerce Center Specific Plan heavy truck activity at normal traffic speeds will approach 0.004 in/sec peak-particle-velocity (PPV) and 0.003 in/sec root-mean-square (RMS) velocity at 25 feet based on the Federal Transit Administration (FTA) *Transit Noise Impact and Vibration Assessment.* (3) Trucks transiting on site will be travelling at very low speeds. Delivery truck vibration impacts at nearby homes would therefore not exceed the City of Chino 0.05 in/sec RMS vibration level standard. On this basis, vibration impacts resulting from transiting heavy trucks would be *less than significant*.

ON-SITE CONSTRUCTION NOISE ANALYSIS

On-site construction noise represents a short-term increase on the ambient noise levels associated with the development of the Project on nearby receivers. Construction-related noise impacts are expected to create temporary and intermittent high-level noise conditions at receivers surrounding the Project site when certain activities occur at the Project site boundary. Using sample reference noise levels to represent the planned construction activities of the Merrill Commerce Center Specific Plan site, this analysis estimates the Project-related construction noise levels at nearby sensitive receiver locations. Since the City of Ontario General Plan and Municipal Codes do not identify specific construction noise level limits, a 65 dBA L_{eq} noise level threshold for construction activities is used in this noise study based on the City of Chino Municipal Code standards for construction, and consistent with other jurisdictions in the County of San Bernardino.

The highest construction noise levels at nearby receiver locations R1 to R8 are estimated to range from 62.1 to 68.0 dBA L_{eq} and will exceed the City of Chino 65 dBA L_{eq} significance threshold during temporary Project construction activities at 4 of the 8 sensitive receiver locations: R3, R4, R7 and R8. Therefore, the unmitigated noise impact due to daytime Project construction is considered *potentially significant* at receiver locations R3, R4, R7 and R8. All other receiver locations will experience unmitigated *less than significant* noise impacts during construction activities.

To reduce the construction equipment noise level impacts at receiver locations R3, R4, R7 and R8 temporary construction noise mitigation measures are required. Proposed mitigation includes a minimum 150-foot buffer distance between large construction equipment (e.g. dozers, graders, scrapers, etc.) and receiver locations R3, R4, R7 and R8, if built and occupied at the time of Project construction; noise barriers; or combined source-receiver buffers and noise barriers that would achieve required noise attenuation at potentially affected land uses

The mitigated construction noise levels will be reduced to 64.0 dBA L_{eq} at the potentially impacted receiver locations with the attenuation provided by the 150-foot buffer zone for large construction equipment (e.g., dozers, graders, scrapers, etc.). Therefore, since Project construction noise levels will be mitigated to below the 65 dBA L_{eq} City of Chino construction noise level threshold, the noise impact due to Project construction is considered a *less than significant* impact with mitigation.

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. A temporary noise level increase of 12 dBA 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 use of 12 dB was established in California many years ago and is based on the concept that a 10 dB increase generally is perceived as a doubling of loudness. Although the Caltrans recommendations were specifically developed to assess traffic noise impacts, the 12 dBA L_{eq} substantial noise level increase threshold is used in California to address noise level increases with the potential to exceed existing conditions. (4)

The construction noise analysis shows that the Project will contribute unmitigated, worst-case construction noise level increases ranging from 0.3 to 10.2 dBA Leq during the daytime hours at the closest sensitive receiver locations. Since the worst-case temporary noise level increases of up to 10.2 dBA Leq during Project construction satisfies the Caltrans substantial 12 dBA Leq noise level increase significance threshold, the unmitigated construction noise level increases are considered *less than significant* temporary noise impacts.

OFF-SITE INFRASTRUCTURE CONSTRUCTION NOISE ANALYSIS

The development of the Project will require the construction of off-site infrastructure improvements that include water, sewer, drainage and other utility facilities. Noise generated by the Project infrastructure construction activities will include a combination of construction equipment that when combined can reach high levels. Using the reference construction equipment noise levels, the unmitigated construction-source noise levels received at nearby land uses along the infrastructure alignments are estimated to range from 68.5 to 76.4 dBA L_{eq}. Construction-source noise at these levels would exceed the acceptable noise level threshold of 65 dBA L_{eq}. Therefore, the unmitigated infrastructure construction-source noise levels are

considered *potentially significant*. The following mitigation measures presented below would reduce noise levels at potentially affected receiver locations.

- Off-site infrastructure improvement plans and construction documents shall include a note indicating that noise-generating Project construction activities shall only occur between the hours of 7:00 a.m. to 6:00 p.m. any weekday, or on Saturday or Sunday from 9:00 a.m. to 6:00 p.m. (City of Ontario Municipal Code, Section 5-29.09).
- Construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards. Construction contractors shall place all stationary construction equipment so that emitted noise is directed away from the nearest noise sensitive receivers.
- Construction contractors shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receivers
- Construction contractors shall limit haul truck deliveries to the same hours specified for construction equipment (between the hours of 7:00 a.m. to 6:00 p.m. any weekday, or on Saturday or Sunday from 9:00 a.m. to 6:00 p.m.). Contractors shall design delivery routes to minimize the exposure of sensitive land uses or residential dwellings to delivery truck-related noise.

Even with application of the above measures, because of the variability of construction activities and scope and variety of land uses potentially affected, it cannot be assured that construction-source noise levels received at sensitive receiver locations along the planned infrastructure alignments would not exceed of 65 dBA L_{eq}. On this basis, noise impacts resulting from construction of off-site infrastructure improvements is considered *significant and unavoidable.*

CONSTRUCTION VIBRATION ANALYSIS

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. This analysis shows the highest construction vibration levels in root-mean-square (RMS) velocity are estimate at 0.009 in/sec RMS at the nearby receiver locations. Since the cities of Ontario and Eastvale do not identify specific vibration level thresholds, the vibration level threshold used in this report is based on the City of Chino 0.05 in/sec RMS standard. The construction vibration analysis shows that the proposed Project construction activities will satisfy the vibration standard of 0.05 in/sec RMS 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. (3) The peak Project-construction vibration levels, approaching 0.012 in/sec PPV, will not exceed 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 at the Project site will be restricted to daytime hours consistent with City requirements thereby eliminating potential vibration impact during the sensitive nighttime hours.

SUMMARY OF CEQA SIGNIFICANCE FINDINGS

The results of this Merrill Commerce Center Specific Plan 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 vibration impact under CEQA.

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS

Analysis	Report Section	Significance Findings	
		Unmitigated	Mitigated
Off-Site Traffic Noise Levels	7	*Less Than Significant*	-
Operational Noise Levels	9	*Potentially Significant*	*Less Than Significant*
Operational Vibration Levels		*Less Than Significant*	-
Construction Noise Levels	10	*Potentially Significant*	*Less Than Significant*
Construction Vibration Levels		*Less Than Significant*	-
Infrastructure Construction Noise Levels	11	*Potentially Significant*	*Significant and Unavoidable*

1 INTRODUCTION

This noise analysis has been completed to determine the noise impacts associated with the development of the proposed Merrill Commerce Center Specific Plan ("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 transportation 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 PROJECT LOCATION

The Project site is located north of Merrill Avenue between Grove Avenue and Carpenter Avenue in the City of Ontario, as shown on Exhibit 1-A. The Project site is bound by Eucalyptus Avenue and agricultural land uses to the north; Merrill Avenue, agricultural land uses, logistics warehouses, the Chino Airport, and vacant land to the south; Grove Avenue and agricultural land uses to the west; and Carpenter Avenue and a dairy operation to the east. Land uses within the Noise impact analysis study area (study area) comprise agricultural uses, industrial uses, and a few single-family residential homes supporting dairy activities. The Project site is located approximately 1,000 feet northeast of northly-most Chino Airport Runway 3-21. The Los Angeles / Ontario International Airport (LA/ONT) is located approximately 4.3 miles northerly of the Project site.

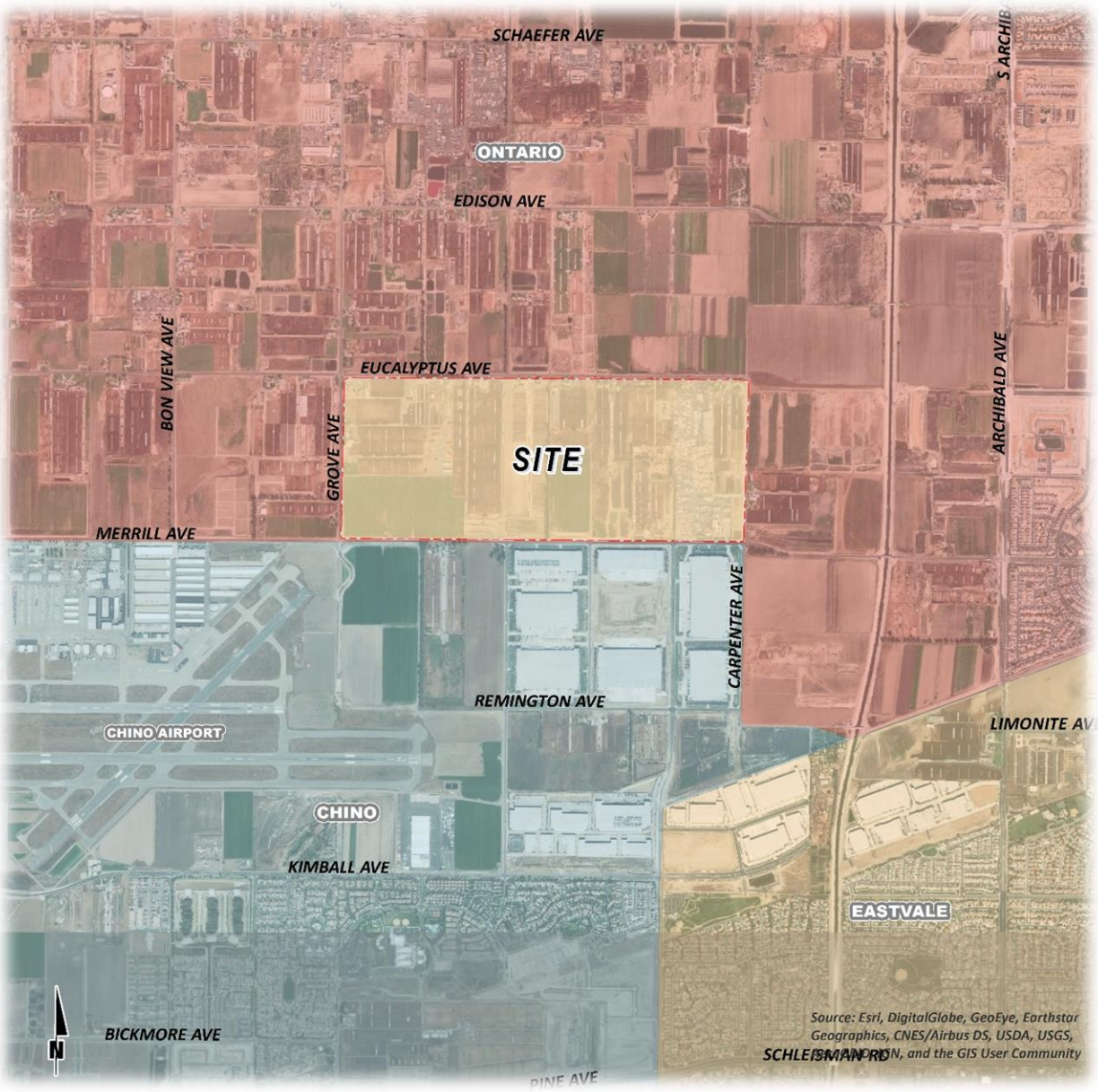
1.2 PROJECT DESCRIPTION

The Merrill Commerce Center Specific Plan (Project, Specific Plan) proposes development and operation of up to 6,312,000 square feet of high-cube fulfillment center warehouse use and 701,400 square feet of high-cube cold storage warehouse and up to 1,441,000 square feet of business park uses (total of 8,455,000 square feet of development) on approximately 376.3 acres located in the City of Ontario, within San Bernardino County. The Project would also implement off-site infrastructure (roads, potable water, recycled water, sanitary sewer, storm drains, and fiber optic lines) necessary to support the Project. Preliminary studies prepared for the Project indicate that an additional 113.3 acres of off-site areas could be disturbed during construction of off-site infrastructure improvements. Predominantly, off-site areas that would be affected by construction of infrastructure improvements comprise already-disturbed/developed rights-of-way and easements.

At the time this noise analysis was prepared, the future tenants of the proposed Project were unknown. The on-site Project-related noise sources are expected to include: cold storage loading dock activities, distribution/warehouse activities, roof-top air conditioning units, and parking lot vehicle movements. This noise analysis is intended to describe noise level impacts associated with the expected typical, 24-hour seven days per week operational activities at the Project site. Per the *Merrill Commerce Center Specific Plan Traffic Impact Analysis* prepared by Urban Crossroads, Inc. the Project is expected to generate a net total of approximately 19,806 trip-ends

per day (actual vehicles) and includes 3,520 truck trip-ends per day from the proposed buildings within the Project site. This noise study relies on the actual Project trips (as opposed to the passenger car equivalents) to accurately account for the effect of individual truck trips on the study area roadway network.

EXHIBIT 1-A: LOCATION MAP



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	
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		SPEECH INTERFERENCE
NOISY URBAN AREA, DAYTIME	VACUUM CLEANER AT 3m (10 ft)	70	LOUD	
HEAVY TRAFFIC AT 90m (300 ft)	NORMAL SPEECH AT 1m (3 ft)	60		
QUIET URBAN DAYTIME	LARGE BUSINESS OFFICE	50	MODERATE	SLEEP DISTURBANCE
QUIET URBAN NIGHTTIME	THEATER, LARGE CONFERENCE ROOM (BACKGROUND)	40		
QUIET SUBURBAN NIGHTTIME	LIBRARY	30	FAINT	NO EFFECT
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		

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. (5) 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. (6) Another important aspect of noise is the duration of the sound and the way it is described and distributed in time.

2.2 NOISE DESCRIPTORS

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

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

Peak hour or average noise levels, while useful, do not completely describe a given noise environment. Noise levels lower than peak hour may be disturbing if they occur during times when quiet is most desirable, namely evening and nighttime (sleeping) hours. To account for this, the Community Noise Equivalent Level (CNEL), representing a composite 24-hour noise level is utilized. The CNEL is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time of day corrections require the addition of 5 decibels to dBA L_{eq} sound levels in the evening from 7:00 p.m. to 10:00 p.m., and the 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 Ontario 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. (5)

2.3.2 GROUND ABSORPTION

The propagation path of noise from a highway to a receiver is usually very close to the ground. Noise attenuation from ground absorption and reflective wave canceling adds to the attenuation associated with geometric spreading. Traditionally, the excess attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is usually sufficiently accurate for distances of less than 200 ft. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver, such as a parking lot or body of water), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receiver such as soft dirt, grass, or scattered bushes and trees), an excess ground attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to the cylindrical spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance from a line source. (7)

2.3.3 ATMOSPHERIC EFFECTS

Receivers located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects. (5)

2.3.4 SHIELDING

A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Shielding by trees and other such vegetation typically only has an “out of sight, out of mind” effect. That is, the perception of noise impact tends to decrease when vegetation blocks the line-of-sight to nearby residents. However, for vegetation to provide a substantial, or even noticeable, noise reduction, the vegetation area must be at least 15 feet in height, 100 feet wide and dense enough to completely obstruct the line-of sight between the source and the receiver. This size of vegetation may provide up to 5 dBA of noise reduction. The FHWA does not consider the planting of vegetation to be a noise abatement measure. (7)

2.4 NOISE CONTROL

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

2.5 NOISE BARRIER ATTENUATION

Effective noise barriers can reduce noise levels by up to 10 to 15 dBA, cutting the loudness of traffic noise in half. A noise barrier is most effective when placed close to the noise source or receiver. Noise barriers, however, do have limitations. For a noise barrier to work, it must be high enough and long enough to block the path of the noise source. (7)

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. (8)

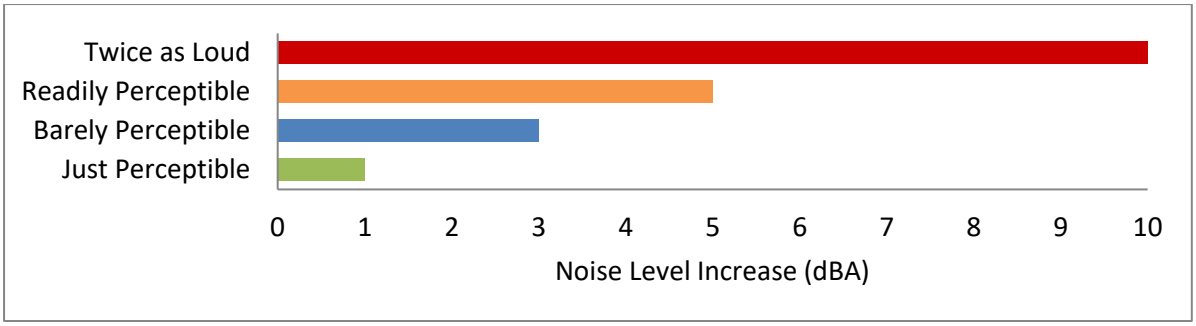
2.7 COMMUNITY RESPONSE TO NOISE

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. (9) 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. (9) Despite this variability in behavior on an individual level, the population can be expected to exhibit the following responses to changes in noise levels as shown on Exhibit 2-B. A change of 3 dBA are considered *barely perceptible*, and changes of 5 dBA are considered *readily perceptible*. (7)

EXHIBIT 2-B: NOISE LEVEL INCREASE PERCEPTION



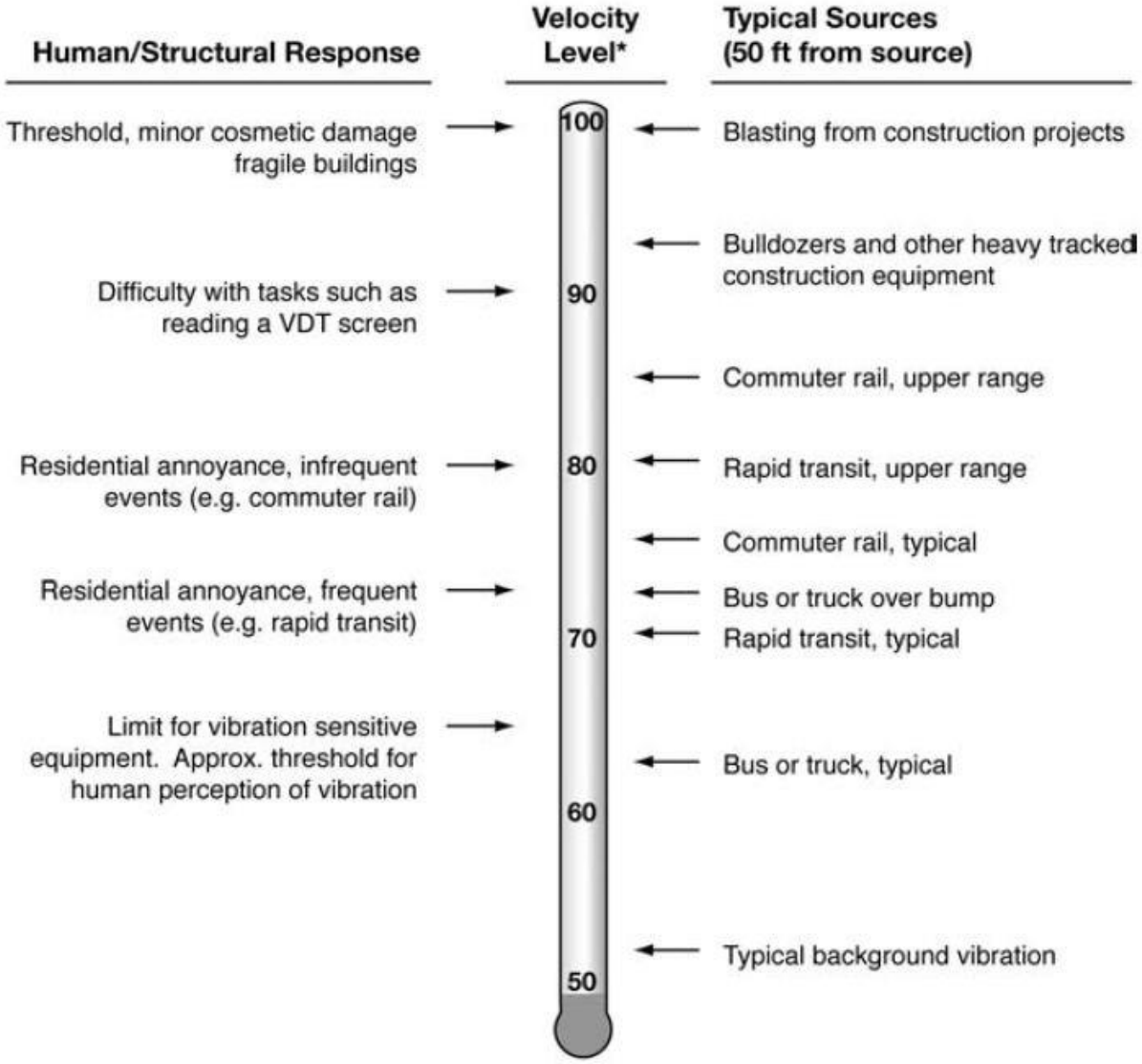
2.8 VIBRATION

Per the Federal Transit Administration (FTA) *Transit Noise Impact and Vibration Assessment*, vibration is the periodic oscillation of a medium or object. (3) The rumbling sound caused by the vibration of room surfaces is called structure-borne noise. Sources of ground-borne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or human-made causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, such as factory machinery, or transient, such as explosions. As is the case with airborne sound, ground-borne vibrations may be described by amplitude and frequency.

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

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

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



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

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

3 REGULATORY SETTING

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

3.1 STATE OF CALIFORNIA NOISE REQUIREMENTS

The State of California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise standards, and provides guidance for local land use compatibility. State law requires that each county and city adopt a General Plan that includes a Noise Element which is to be prepared per guidelines adopted by the Governor's Office of Planning and Research (OPR). (10) The purpose of the Noise Element is to *limit the exposure of the community to excessive noise levels*. In addition, the California Environmental Quality Act (CEQA) requires that all known environmental effects of a project be analyzed, including environmental noise impacts.

3.2 STATE OF CALIFORNIA GREEN BUILDING STANDARDS CODE

The State of California's Green Building Standards Code contains mandatory measures for non-residential building construction in Section 5.507 on Environmental Comfort. (11) 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 ONTARIO GENERAL PLAN NOISE ELEMENT

The City of Ontario General Plan (Policy Plan) identifies several policies to minimize the impacts of excessive noise levels throughout the community. Policy Plan Section S4, Noise Hazards, establishes a goal of maintaining *an environment where noise does not adversely affect the public's health, safety, and welfare.* (12) To satisfy this goal, the Policy Plan identifies six policies

related to: noise mitigation; coordination with transportation authorities; airport noise mitigation; truck traffic; roadway design; and airport noise compatibility.

Noise criteria identified at Policy Plan Table LU-7 provide guidelines to evaluate land use compatibility within various noise environments. Table LU-7, is reproduced here as Exhibit 3A *Noise Level Exposure and Land Use Compatibility Guidelines*. The Project land uses are considered *clearly acceptable* within exterior noise level environments approaching 70 dBA CNEL and *normally acceptable* within noise level environments up to 80 dBA CNEL. For noise level environments greater than 80 dBA CNEL, the Project land uses would be considered *normally unacceptable* and new construction is discouraged.

3.4 OPERATIONAL NOISE STANDARDS

To analyze noise impacts originating from a designated fixed location or private property such as the Merrill Commerce Center Specific Plan stationary-source (operational) noise such as the expected cold storage loading dock activities, distribution/warehouse activities, roof-top air conditioning units, and parking lot vehicle movements are evaluated against standards established under a City's Municipal Code. Although the Project site is located within the City of Ontario, potentially affected sensitive receivers are also located in the adjacent City of Chino. 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 cities of Ontario, and Chino.

3.4.1 CITY OF ONTARIO OPERATIONAL NOISE STANDARDS

The City of Ontario Municipal Code, Title 5, Chapter 29 noise standards are included in Appendix 3.1. Section 5-29.04(a) identifies the acceptable daytime and nighttime ambient exterior noise standards for each land use type. For Manufacturing and Industrial land uses (Noise Zone V), such as the Project, ambient exterior noise levels may not exceed 70 dBA Leq. For residential land uses (Noise Zone I), ambient exterior noise levels may not exceed 65 dBA Leq during the daytime hours (7:00 a.m. to 10:00 p.m.), and may not exceed 45 dBA Leq during the nighttime hours (10:00 p.m. to 7:00 a.m.). (13) The maximum acceptable Project-related operational noise levels received at off-site land uses in the City of Ontario are identified on Table 3-1.

EXHIBIT 3-A: NOISE LEVEL EXPOSURE AND LAND USE COMPATIBILITY GUIDELINES

LAND USE CATEGORIES		COMMUNITY NOISE EQUIVALENT LEVEL (CNEL)						
Category	Land Use	55	60	65	70	75	80	
Residential/ Lodging	Single Family / Duplex							
	Multi-Family							
	Mobile Homes							
	Hotel/Motels							
Public/Institutional	Schools/Hospitals							
	Churches/ Libraries							
	Auditoriums/Concert Halls							
Commercial	Offices							
	Retail							
Industrial	Manufacturing							
	Warehousing							
Recreational/ Open Space	Parks/Playgrounds							
	Golf Courses/ Riding Stables							
	Outdoor Spectator Sports							
	Outdoor Music Shells/ Amphitheaters							
	Livestock/Wildlife Preserves							
	Crop Agriculture							

LEGEND

Clearly Acceptable:	No special noise insulation required, assuming buildings of normal conventional construction.
Normally Acceptable:	Acoustical reports will be required for major new residential construction. Conventional construction with closed windows and fresh air supply systems of air conditioning will normally suffice.
Normally Unacceptable:	New construction should be discouraged. Noise/aviation easements required for all new construction. If new construction does proceed, a detailed analysis of noise reduction requirements must be made and necessary noise insulation features included.
Clearly Unacceptable:	No new construction should be permitted.

Source: The Ontario Plan Safety Section on Noise Hazards (Table LU-7).

3.4.2 CITY OF CHINO OPERATIONAL NOISE STANDARDS

The City of Chino Noise Ordinance included in the Municipal Code (Chapter 9.40) establishes the maximum permissible noise level that may intrude into a neighbor's property. The Noise Ordinance (Section 9.40.040) establishes the exterior noise level criteria for residential properties affected by stationary noise sources. While the Municipal Code identifies noise zones for commercial (Zone II), manufacturing and industrial properties (Zone III), it only establishes exterior noise standards for residential property (Section 9.40.030). For residential properties (Noise Zone 1), the exterior noise level shall not exceed 55 dBA during daytime hours (7:00 a.m. to 10:00 p.m.) and shall not exceed 50 dBA during the nighttime hours (10:00 p.m. to 7:00 a.m.) for more than 30 minutes in any hour. (14) These standards shall apply for a cumulative period of 30 minutes in any hour, as well as plus 5 dBA cannot be exceeded for a cumulative period of more than 15 minutes in any hour, or the standard plus 10 dBA for a cumulative period of more than 5 minutes in any hour, or the standard plus 15 dBA for a cumulative period of more than 1 minute in any hour, or the standard plus 20 dBA for any period of time. The City of Chino Municipal Code operational noise level standards are shown on Table 3-1 and included in Appendix 3.2.

TABLE 3-1: OPERATIONAL NOISE STANDARDS

City	Land Use	Time Period	Exterior Noise Levels (dBA)[3]					
			Leq (E. Avg.)	L_{50} (30 mins)	L_{25} (15 mins)	L_8 (5 mins)	L_2 (1 min)	L_{max} (Anytime)
Ontario[1]	Residential	Daytime	65	-	65	-	-	85
		Nighttime	45	-	45	-	-	65
Chino[2]	Residential	Daytime	-	55	60	65	70	75
		Nighttime	-	50	55	60	65	70

[1] Source: Section 5-29.04 of the City of Ontario Municipal Code (Appendix 3.1).
[2] Source: Section9.40.040 of the City of Chino 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

3.5 CONSTRUCTION NOISE STANDARDS

To analyze noise impacts originating from the construction of the Merrill Commerce Center Specific Plan, noise from construction activities are appropriately evaluated against standards established under a City's Municipal Code, if such standards exist. The Municipal Code noise standards for construction are described below for the City of Ontario, and Chino to determine the potential noise impacts at receivers within each jurisdiction. The construction-related noise standards for each City are summarized in Table 3-2.

3.5.1 CITY OF ONTARIO CONSTRUCTION NOISE STANDARDS

The City of Ontario has set restrictions to control noise impacts associated with construction. Section 5-29.09 of the Municipal Code states: *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.* (13) While the City establishes limits to the hours during which construction activity may take place, it does not identify specific noise level limits for construction noise levels at potentially affected receiver locations.

3.5.2 CITY OF CHINO CONSTRUCTION NOISE STANDARDS

The City of Chino has set restrictions to control noise impacts associated with construction activities throughout the City. Section 9.40.060(D) of the City's Noise Ordinance indicates that noise sources associated with construction, repair, remodeling, or grading of any real property, are exempt from the provisions of the noise ordinance, provided the construction activities take place between the hours of 7:00 a.m. and 8:00 p.m. Monday through Saturday, with no construction allowed on Sundays and Federal holidays (Section 15.44.030), and provided the noise levels exceeding 65 dBA L_{50} when measured on residential property do not endanger the public health, welfare and safety. (14) However, neither the City's 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 permanent increase*.

3.5.3 CONSTRUCTION NOISE LEVEL COMPLIANCE THRESHOLD

Although construction noise may not pose a health risk or damage human hearing, it has the potential to adversely affect people's quality of life. Noise annoys, awakens, angers and frustrates people. It disrupts communication and individual thoughts and affects performance capabilities. Noise is one of the biological stressors associated with everyday life. Thus, the numerous effects of noise combine to detract from the quality of people's lives and the environment. (6) In addition, acceptance of temporary construction noise varies with the individual. For this reason, and to present a conservative evaluation of construction noise effects in this report, the numerical noise standard of 65 dBA (with higher noise level allowances for short bursts of louder noise) established in the City of Chino Municipal Code, Section 9.40.060(D)

Special Provisions, is used in this analysis to determine the significance of construction noise on noise-sensitive receivers. The 65 dBA criteria is the noise level that is considered acceptable for residential (Zone 1) properties in the City of Chino. It is further noted that within the County of San Bernardino, construction noise level limits of 65 dBA Leq are established in the following cities: Rancho Cucamonga (Development Code, Section 17.66.050(D)(4)(a) Noise Standards); and Adelanto (Code of Ordinances, Section 17.90.020(d) Construction Practices).

The reference construction noise limit of 65 dBA Leq provides an acceptable and conservative numerical threshold for determining the relative significance of daytime Project construction-source noise levels. The construction noise standards are shown on Table 3-2. Note that pursuant to the City of Chino Municipal Code, Section 9.40.060(D), the noise limit of 65 dBA is the noise standard for a cumulative period of more than thirty minutes in any hour (L_{50}). In addition, the Municipal Code allows for short bursts or periods of increased construction-related noise as follows:

- 70 dBA for a cumulative period of no more than fifteen minutes in any hour (L_{25});
- 75 dBA for a cumulative period of no more than five minutes in any hour (L_8);
- 80 dBA for a cumulative period of more than one minute in any hour (L_2);
- Noise levels greater than 85 dBA experienced at a sensitive receiver for any period (L_{max}).

For the purposes of this analysis, the 65 dBA Leq numerical threshold is used to assess the potential construction noise level impacts at nearby sensitive receivers. While the L_{50} describes the mean noise levels occurring 50 percent of the time, the Leq accounts for the total energy (average) observed for the entire hour during construction activities.

TABLE 3-2: CONSTRUCTION NOISE LEVEL COMPLIANCE STANDARDS

City	Permitted Hours of Construction Activity	Construction Noise Level Standards				
		L_{50} (30 mins)	L_{25} (15 mins)	L_8 (5 mins)	L_2 (1 min)	L_{max} (Anytime)
Ontario[1]	7:00 a.m. to 6:00 p.m. any weekday, or on Saturday or Sunday from 9:00 a.m. to 6:00 p.m.	n/a	n/a	n/a	n/a	n/a
Chino[2]	7:00 a.m. to 8:00 p.m. Monday through Saturday; not allowed on Sundays or Federal Holidays.	65	70	75	80	85
Acceptable thresholds for determining the relative significance of Project construction noise levels[3]:		65	70	75	80	85

[1] Source: Section 5-29.09 of the City of Ontario Municipal Code (Appendix 3.1).
[2] Source: Section9.40.060(D)) of the City of Chino Municipal Code (Appendix 3.2).
[3] Within the County of San Bernardino, construction noise level limits of 65 dBA Leq are identified in the following cities: Rancho Cucamonga (Development Code, Section 17.66.050(D)(4)(a) Noise Standards); Adelanto (Code of Ordinances, Section 17.90.020(d) Construction Practices); and Chino (Municipal Code, Section 9.40.060(D) Special Provisions).
"n/a" = Municipal Code does not identify maximum acceptable construction source noise levels.

3.6 VIBRATION STANDARDS

To analyze vibration impacts originating from the operation and construction of the Merrill Commerce Center Specific Plan, vibration-generating activities are appropriately evaluated against standards established under a City's Municipal Code, if such standards exist. However, the City of Ontario does not identify specific vibration level limits. The City of Chino Municipal Code does however establish vibration level standards. These standards are considered relevant to the analysis presented here and are employed in evaluating potential vibration impacts. The analysis vibration standards are summarized on Table 3-3.

3.6.1 OPERATIONAL-SOURCE VIBRATION STANDARDS

City of Chino Noise Ordinance Section 9.40.110 - *Vibration*, states in pertinent part: *it is unlawful for any person to create, maintain or cause any ground vibration which is perceptible without instruments at any point on any affected property adjoining the property on which the vibration source is located*. *For the purpose of this chapter, the perception threshold shall be presumed to be more than 0.05 inches per second (root mean square–RMS) vertical velocity*. (14)

3.6.2 CONSTRUCTION-SOURCE VIBRATION STANDARDS

The City of Chino Noise Ordinance Section 9.40.060(D) states that vibration created by construction activities is exempt from provisions of the Ordinance, if any construction-source vibration does not endanger the public health, welfare, and safety. Therefore, to determine if the vibration levels due to construction will endanger the public health, welfare, and safety of nearby sensitive receiver locations, the operational vibration level standard of 0.05 inches per second (RMS) is used.

TABLE 3-3: VIBRATION STANDARDS

City	Root-Mean-Square Velocity (in/sec)
Ontario[1]	n/a
Chino[2]	0.05

[1] "n/a" = The City of Ontario does not identify specific vibration level standards.
[2] Source: Section 9.40.110 of the City of Chino Municipal Code.

3.7 AIRPORT LAND USE COMPATIBILITY

The Project site is located roughly 1,000 feet northeast of northly-most Chino Airport Runway 3-21. The Ontario International Airport (ONT) is located approximately 4.3 miles northerly of the Project site. As shown on Exhibit 3-B, the Project site is partially located within the 55 dBA noise level contour boundaries of Chino Airport, but is not located within the noise level contour boundaries of ONT. The City is currently working towards adopting a Compatibility Plan for Chino Airport that relies upon the Caltrans Division of Aeronautics – California Airport Land Use Planning Handbook that utilizes the Generic Safety Zones for General Aviation Airports. The City

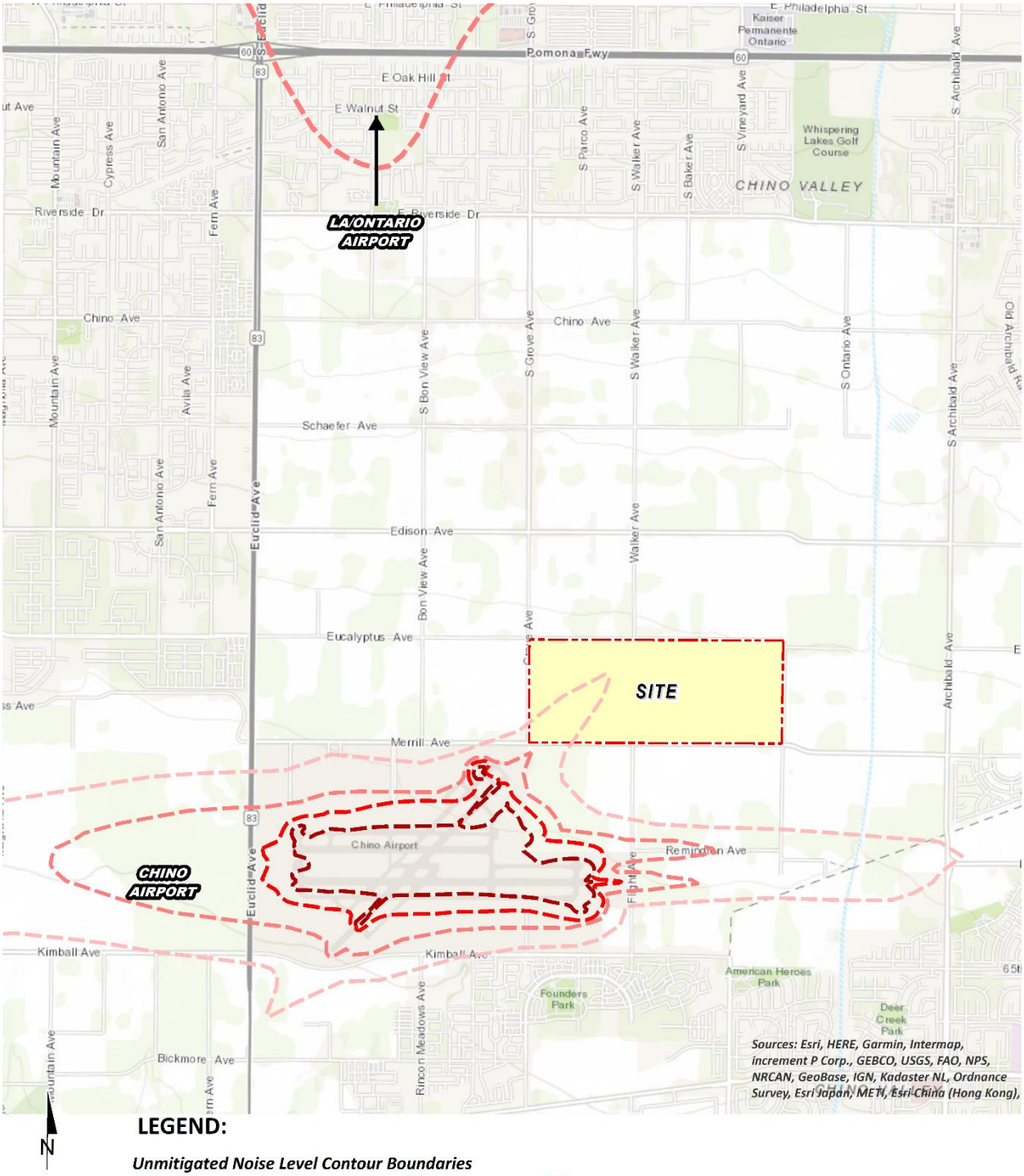
of Ontario is not utilizing the Riverside County ALUCP for development but has been relying on the California Airport Land Use Planning Handbook, which state law requires for jurisdictions operating under the Alternative Process. The Chino Airport Section of the document reflects the City's Draft Chino Airport Compatibility Plan that is expected to be adopted late 2020 to early 2021.

For compatibility planning purposes, the noise contours reflecting the County of Riverside aircraft activity forecast of 209,400 annual operations for 2028 is considered to be representative of the likely maximum number of aircraft operations that could be realized over the requisite 20-year forecast period (2039). Only the 55 dBA CNEL noise contour affects lands within the City of Ontario and falls within the CNO Safety Zones 1 and 2. Therefore, all noise sensitive land uses (e.g., schools, residences) should be prohibited within CNO Safety Zones 1 and 2, which encompass the 55 dBA CNEL contour. Since the Project is planned for future industrial uses, no significant impacts are anticipated.

Standard building construction practices required under the State of California Green Building Standards Code (CALGreen) typically provide up to 25 dBA CNEL of attenuation. With respect to noise generated by Chino Airport facilities and activities, application of standard CALGreen construction practices would yield acceptable Project interior noise levels of approximately 30 dBA CNEL. The Project does not propose or require facilities or actions that would contribute to or exacerbate noise generated by Chino Airport facilities and activities.

The Project site is also within the airport influence area of the *Ontario International Airport Land Use Compatibility Plan* amended on July 2018. Table 2-3 Noise Criteria would apply to the Project. (17) Industrial land uses located outside of the 60 dBA CNEL noise level contours of ONT, such as the Project, are considered *normally compatible land use* and must reduce interior noise levels to 50 dBA CNEL. With respect to noise generated by ONT facilities and activities, application of standard CALGreen construction practices would yield acceptable Project interior noise levels of approximately 35 dBA CNEL. The Project does not propose or require facilities or actions that would contribute to or exacerbate noise generated by ONT facilities and activities. Based on the preceding, the Project would not be adversely affected by airport/airfield noise, nor would the Project contribute to or result in adverse airport/airfield noise impacts.

EXHIBIT 3-B: AIRPORT NOISE LEVEL CONTOUR BOUNDARIES



Ontario Airport Source: Ontario International Airport Land Use Compatibility Plan (Amended on July 2018).
Chino Airport Source: Riverside County Airport Land Use Compatibility Plan Policy Document (Adopted September 2008), Map CH-3.

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4 SIGNIFICANCE CRITERIA

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

A. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

B. Generation of excessive ground-borne vibration or ground-borne noise levels?

C. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

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

4.1 POTENTIAL IMPACTS NOT FURTHER ANALYZED

Based on future Year 2030 conditions provided in the *Chino Airport Master Plan* and the *Airport Comprehensive Land Use Plan*, the Project site is located within the 55 to 60 dBA CNEL noise level contour boundary. (15) As such, exterior noise levels due to aircraft overflight activities would be considered *clearly acceptable*, and Project interior noise levels would be reduced with standard building construction. Further, the Project does not propose or require facilities or actions that would contribute to or exacerbate noise generated by airport/airfield facilities and activities. Therefore, potential impacts related to the exposure of people residing or working in the Project area due to excessive airport related noise levels is considered less-than-significant. Accordingly, no further analysis is warranted.

4.2 POTENTIAL IMPACTS AFFECTING NOISE-SENSITIVE RECEIVERS

Within this analysis, consideration is given to the magnitude of noise level increases, 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.* (18)

There is however, 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. An important way of determining a person's subjective reaction to noise is by measuring incremental effects of additional or new noise sources within the existing or *ambient* noise 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) (19) developed guidance to be used for the assessment of project-generated increases in noise levels that consider the ambient noise level. The FICON recommendations are based on studies that relate aircraft noise levels to the percentage of persons highly annoyed by aircraft noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, these recommendations are often used in environmental noise impact assessments involving the use of cumulative noise exposure metrics, such as the average-daily noise level (CNEL) and equivalent continuous noise level (L_{eq}).

Per the FICON guidance, an increase of 5 dBA or greater is considered potentially significant when the ambient noise level is < 60 dBA. Per the FICON guidance, in areas where the ambient noise levels range from 60 to 65 dBA, a 3 dBA noise level increase would be considered potentially significant; and when ambient noise levels already exceed 65 dBA, an increase of 1.5 dBA or greater would be considered potentially significant. Table 4-1 below summarizes relevant FICON noise impact significance guidance.

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

Without Project Noise Level (CNEL)	Project Related Potentially Significant Impact
< 60 dBA	5 dBA or more
60 - 65 dBA	3 dBA or more
> 65 dBA	1.5 dBA or more

Source: Federal Interagency Committee on Noise (FICON)

4.2 OTHER RECEIVERS

The City of Ontario General Plan Noise Element, Table N-1, *Land Use Compatibility for Community Noise Exposure* was used to establish the satisfactory noise levels of significance for other land uses in the Project study area. As previously shown on Exhibit 3-A, the *normally acceptable* exterior noise levels for land uses other than sensitive receivers is 70 dBA CNEL. Noise levels greater than 70 dBA CNEL are considered *conditionally acceptable* per the *Land Use Compatibility for Community Noise Exposure*. (20)

To determine if Project-related traffic noise level increases are significant at land uses other than sensitive receivers, 5 dBA and 3 dBA criteria were used. When the without Project noise levels at land uses other than sensitive receivers are below the *normally acceptable* 70 dBA CNEL compatibility criteria, a 5 dBA or greater noise level increase is considered potentially significant. When the ambient noise levels are greater than the *normally acceptable* 70 dBA CNEL compatibility criteria, an increase of 3 dBA or greater would be considered potentially significant.

4.3 SIGNIFICANCE CRITERIA SUMMARY

Noise significance criteria employed in this analysis is summarized at Table 4-2.

TABLE 4-2: SIGNIFICANCE CRITERIA SUMMARY

Analysis	City	Receiving Land Use	Condition(s)	Significance Criteria	
				Daytime	Nighttime
Off-Site Traffic[1]	All	Noise-Sensitive[1]	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[3]	Multiple	Noise-Sensitive	Exterior Noise Level Limits	See Table 3-1	
	All		if ambient is < 60 dBA L_{eq}	≥ 5 dBA L_{eq} Project increase	
			if ambient is 60 - 65 dBA L_{eq}	≥ 3 dBA L_{eq} Project increase	
			if ambient is > 65 dBA L_{eq}	≥ 1.5 dBA L_{eq} Project increase	
Construction[5]	All	Residential	Noise Level Threshold[4]	65 dBA L_{eq}	
		Sensitive	Vibration Level Threshold[5]	0.05 in/sec RMS	

[1] Source: FICON, 1992.
[2] Based on the land use compatibility criteria found in The Ontario Plan Safety Section on Noise Hazards (Table LU-7), and consistent with guidelines in the General Plans of the Cities of Chino, Eastvale, and with FICON guidance (1992).
[3] Municipal Code exterior noise level limits as indicated in Table 3-1.
[4] Acceptable construction noise level threshold based on the City of Chino construction noise level limits of 65 dBA; also identified in the following cities within the County of San Bernardino: Rancho Cucamonga (Development Code, Section 17.66.050(D)(4)(a) Noise Standards); Adelanto (Code of Ordinances, Section 17.90.020(d) Construction Practices); and Chino (Municipal Code, Section 9.40.060(D) Special Provisions).
[5] Source: Section 9.40.110 of the City of Chino Municipal Code. The City of Ontario does not identify specific vibration level standards.
"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.; "RMS" = root-mean-square

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5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, ten 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, June 26, 2019. Appendix 5.1 includes study area photos.

5.1 MEASUREMENT PROCEDURE AND CRITERIA

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

5.2 NOISE MEASUREMENT LOCATIONS

The long-term noise level measurements were positioned as close to the nearest sensitive receiver locations as possible to assess the existing ambient hourly noise levels surrounding the Project site. Both Caltrans and the FTA recognize that it is not reasonable to collect noise level measurements that can fully represent 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*. (5) Further, FTA guidance states, t*hat it is not necessary nor recommended that existing noise exposure be determined by measuring at every noise-sensitive location in the project area. Rather, the recommended approach is to characterize the noise environment for clusters of sites based on measurements or estimates at representative locations in the community*. (3)

Based on recommendations of Caltrans and the FTA, it is not necessary to collect measurements at each individual building or residence, because each receiver measurement represents a group of buildings that share acoustical equivalence. 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. Additional median noise levels (L_{50}) are provided on Table 5-1 consistent with applicable Municipal Code exterior noise level standards. Appendix 5.2 provides a summary of the existing ambient noise levels described below:

- Location L1 represents the noise levels on Edison Avenue, northwest of the Project site, near existing vacant rural-residential homes and agricultural land use. The noise level measurements collected show an overall 24-hour exterior noise level of 76.1 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 71.4 dBA L_{eq} with an average nighttime noise level of 69.1 dBA L_{eq}.
- Location L2 represents the noise levels on Edison Avenue, north of the Project site, near existing rural-residential homes and agricultural land use. The noise level measurements collected show an overall 24-hour exterior noise level of 73.9 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 69.8 dBA L_{eq} with an average nighttime noise level of 66.7 dBA L_{eq}.
- Location L3 represents the noise levels on Walker Avenue, north of the Project site, near existing rural-residential homes and agricultural land use. The 24-hour CNEL indicates that the overall exterior noise level is 63.2 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 60.9 dBA L_{eq} with an average nighttime noise level of 55.3 dBA L_{eq}.
- Location L4 represents the noise levels on Eucalyptus Avenue, near the northwestern boundary of the Project site, adjacent to existing rural-residential homes and agricultural land use. 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 70.6 dBA L_{eq} with an average nighttime noise level of 66.9 dBA L_{eq}.
- Location L5 represents the noise levels on Eucalyptus Avenue, near the northern boundary of the Project site, adjacent to existing rural-residential homes and agricultural land use. The noise level measurements collected show an overall 24-hour exterior noise level of 71.8 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 67.5 dBA L_{eq} with an average nighttime noise level of 64.7 dBA L_{eq}.
- Location L6 represents the noise levels in on Eucalyptus Avenue, near the northeastern boundary of the Project site, adjacent to existing rural-residential homes and agricultural land use. The noise level measurements collected show an overall 24-hour exterior noise level of 65.5 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 61.5 dBA L_{eq} with an average nighttime noise level of 58.2 dBA L_{eq}.
- Location L7 represents the noise levels on Eucalyptus Avenue, east of the Project site, adjacent to existing rural-residential homes and agricultural land use. The noise level

measurements collected show an overall 24-hour exterior noise level of 63.0 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 58.2 dBA L_{eq} with an average nighttime noise level of 56.1 dBA L_{eq}.

- Location L8 represents the noise levels on Grove Avenue, near the northwestern boundary of the Project site, adjacent to existing rural-residential homes and agricultural land use. The noise level measurements collected show an overall 24-hour exterior noise level of 76.5 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 71.5 dBA L_{eq} with an average nighttime noise level of 69.6 dBA L_{eq}.
- Location L9 represents the noise levels on Grove Avenue, near the southwestern boundary of the Project site, adjacent to existing rural-residential homes and agricultural land use. The 24-hour CNEL indicates that the overall exterior noise level is 79.5 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 75.3 dBA L_{eq} with an average nighttime noise level of 72.3 dBA L_{eq}.
- Location L10 represents the noise levels on Grove Avenue, near the southern boundary of the Project site, adjacent to existing rural-residential homes and agricultural land use. The noise level measurements collected show an overall 24-hour exterior noise level of 70.3 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 67.1 dBA L_{eq} with an average nighttime noise level of 62.7 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.

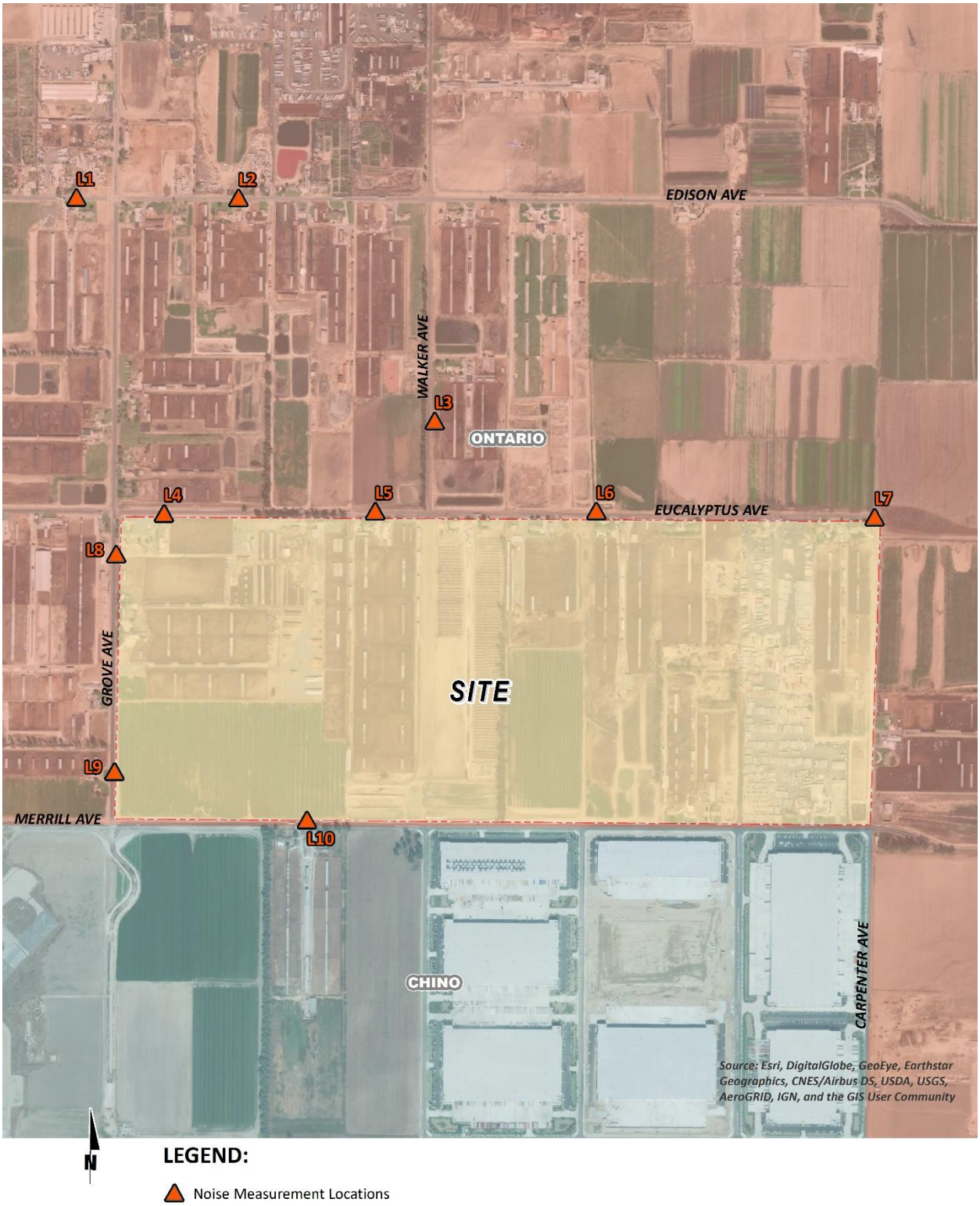
The background ambient noise levels in the Project study area are dominated by the transportation-related noise associated with the arterial roadway network and background Chino Airport aircraft flyover events. The 24-hour existing noise level measurements shown on Table 5-1 present the existing ambient noise conditions.

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

Location[1]	Description	Energy Average Noise Level (dBA L_{eq})[2]		Average Median Noise Level (dBA L_{50})[2]		CNEL
		Daytime	Nighttime	Daytime	Nighttime	
L1	Located on Edison Avenue, northwest of the Project site, near existing vacant rural-residential homes and agricultural land use.	71.4	69.1	61.1	53.3	76.1
L2	Located on Edison Avenue, north of the Project site, near existing rural-residential homes and agricultural land use.	69.8	66.7	62.7	52.1	73.9
L3	Located on Walker Avenue, north of the Project site, near existing rural-residential homes and agricultural land use.	60.9	55.3	51.3	45.4	63.2
L4	Located on Eucalyptus Avenue, near the northwestern boundary of the Project site, adjacent to existing rural-residential homes and agricultural land use.	70.6	66.9	55.7	47.7	74.2
L5	Located on Eucalyptus Avenue, near the northern boundary of the Project site, adjacent to existing rural-residential homes and agricultural land use.	67.5	64.7	57.1	54.9	71.8
L6	Located on Eucalyptus Avenue, near the northeastern boundary of the Project site, adjacent to existing rural-residential homes and agricultural land use.	61.5	58.2	49.3	43.4	65.5
L7	Located on Eucalyptus Avenue, east of the Project site, adjacent to existing rural-residential homes and agricultural land use.	58.2	56.1	48.5	42.0	63.0
L8	Located on Grove Avenue, near the northwestern boundary of the Project site, adjacent to existing rural-residential homes and agricultural land use.	71.5	69.6	61.9	52.4	76.5
L9	Located on Grove Avenue, near the southwestern boundary of the Project site, adjacent to existing rural-residential homes and agricultural land use.	75.3	72.3	65.3	59.6	79.5
L10	Located on Grove Avenue, near the southern boundary of the Project site, adjacent to existing rural-residential homes and agricultural land use.	67.1	62.7	58.9	48.9	70.3

[1] See Exhibit 5-A for the noise level measurement locations.
[2] Energy (logarithmic) average hourly levels. The long-term 24-hour measurement worksheets are included in Appendix 5.2.
"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

EXHIBIT 5-A: NOISE MEASUREMENT LOCATIONS



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6 METHODS AND PROCEDURES

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

6.1 FHWA TRAFFIC NOISE PREDICTION MODEL

The expected roadway noise level increases from vehicular traffic were calculated by Urban Crossroads, Inc using a computer program that replicates the Federal Highway Administration (FHWA) Traffic Noise Prediction Model- FHWA-RD-77-108. (22) The FHWA Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). In California the national REMELs are substituted with the California Vehicle Noise (Calveno) Emission Levels. (23)

Adjustments are then made to the REMEL to account for: the roadway classification (e.g., collector, secondary, major or arterial), the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway), the total average daily traffic (ADT), the travel speed, the percentages of automobiles, medium trucks, and heavy trucks in the traffic volume, the roadway grade, the angle of view (e.g., whether the roadway view is blocked), the site conditions ("hard" or "soft" relates to the absorption of the ground, pavement, or landscaping), and the percentage of total ADT which flows each hour throughout a 24-hour period. Research conducted by Caltrans has shown that the use of soft site conditions is appropriate for the application of the FHWA traffic noise prediction model used in this analysis. (24)

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 63 study area roadway segments, the distance from the centerline to adjacent land use based on the functional roadway classifications per the General Plan Circulation Element, and the posted vehicle speeds.

The average daily traffic volumes used for this study are presented on Table 6-2. These traffic volumes are consistent with those presented in the Project Traffic Impact Analysis (2) To quantify the off-site noise levels, the Project related truck trips were added to the heavy truck category in the FHWA noise prediction model. The addition of the Project related truck trips increases the percentage of heavy trucks in the vehicle mix. This approach recognizes that the FHWA noise prediction model is significantly influenced by the number of heavy trucks in the vehicle mix.

Table 6-3 provides the time of day (daytime, evening, and nighttime) vehicle splits. The daily Project truck trip-ends were assigned to the individual off-site study area roadway segments based on the Project truck trip distribution percentages documented in the *Traffic Impact Analysis*. Using the Project truck trips in combination with the Project trip distribution, Urban Crossroads, Inc. calculated the number of additional Project truck trips and vehicle mix percentages for each of the study area roadway segments. Table 6-4 shows the traffic flow by

vehicle type (vehicle mix) used for all without Project traffic scenarios, and Tables 6-5 to 6-11 show the vehicle mixes used for the With-Project traffic scenarios.

Due to the added Project truck trips, the increase in Project traffic volumes and the distributions of trucks on the study area road segments, the percentage of autos, medium trucks and heavy trucks will vary for each of the traffic scenarios. This explains why the existing and future traffic volumes and vehicle mixes vary between seemingly identical study area roadway segments.

6.3 VIBRATION ASSESSMENT

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

However, while vehicular traffic is rarely perceptible, construction has the potential to result in varying degrees of temporary ground vibration, depending on the specific construction activities and equipment used. Ground vibration levels associated with various types of construction equipment are summarized on Table 6-12. 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. (3) To describe the human response (annoyance) associated with vibration impacts the FTA provides the following equation: $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$

TABLE 6-1: OFF-SITE ROADWAY PARAMETERS

ID	Roadway	Segment	Adjacent Land Use[1]	Classification[1]	Distance to Adjacent Land Use (Feet)[2]	Vehicle Speed (mph)[3]
1	Euclid Av.	n/o SR-60	Commercial/Residential	Ontario-Principal Arterial (8)	84'	40
2	Euclid Av.	n/o SR-60 EB Ramps	Freeway	Ontario-Principal Arterial (8)	84'	45
3	Euclid Av.	n/o Walnut Av.	Commercial	Ontario-Principal Arterial (8)	84'	45
4	Euclid Av.	n/o Riverside Dr.	Commercial/Residential	Ontario-Principal Arterial (8)	84'	45
5	Euclid Av.	n/o Chino Av.	Commercial/Residential	Ontario-Principal Arterial (8)	84'	45
6	Euclid Av.	n/o Schaefer Av.	Residential	Ontario-Principal Arterial (8)	84'	45
7	Euclid Av.	n/o Edison Av.	Office	Ontario-Principal Arterial (8)	84'	45
8	Euclid Av.	n/o Eucalyptus Av.	Industrial	Ontario-Principal Arterial (8)	84'	45
9	Euclid Av.	n/o Merrill Av.	Commercial/Office	Ontario-Principal Arterial (8)	84'	55
10	Euclid Av.	n/o Kimball Av.	Open Space/Public	Chino-Major Arterial (Expressway) (8)	84'	55
11	Euclid Av.	n/o Bickmore Av.	Commercial/Industrial	Chino-Major Arterial (Expressway) (8)	84'	55
12	Euclid Av.	n/o Pine Av.	Commercial/Industrial	Chino-Major Arterial (Expressway) (8)	84'	55
13	Euclid Av.	s/o Pine Av.	Open Space	Chino-Major Arterial (Expressway) (8)	84'	55
14	Grove Av.	n/o SR-60	Commercial	Ontario-Principal Arterial (6)	60'	45
15	Grove Av.	n/o SR-60 EB Ramps	Freeway	Ontario-Principal Arterial (6)	60'	45
16	Grove Av.	n/o Walnut Av.	Commercial/Residential	Ontario-Principal Arterial (6)	60'	45
17	Grove Av.	n/o Riverside Dr.	Residential	Ontario-Principal Arterial (6)	60'	45
18	Grove Av.	n/o Chino Av.	Residential	Ontario-Principal Arterial (4)	50'	50
19	Grove Av.	n/o Schaefer Av.	Residential	Ontario-Principal Arterial (4)	50'	50
20	Grove Av.	n/o Edison Av.	Commercial/Residential	Ontario-Principal Arterial (4)	50'	50
21	Grove Av.	n/o Eucalyptus Av.	Commercial/Residential	Ontario-Principal Arterial (4)	50'	50
22	Grove Av.	n/o Street A	Commercial/Residential	Ontario-Principal Arterial (4)	50'	50
23	Grove Av.	n/o Merrill Av.	Business Park	Ontario-Principal Arterial (4)	50'	50
24	Archibald Av.	n/o SR-60	Commercial	Ontario-Principal Arterial (6)	60'	50
25	Archibald Av.	n/o SR-60 EB Ramps	Freeway	Ontario-Principal Arterial (6)	60'	50
26	Archibald Av.	n/o Riverside Dr.	Commercial/Residential	Ontario-Principal Arterial (6)	60'	50
27	Archibald Av.	n/o Chino Av.	Commercial/Residential	Ontario-Principal Arterial (6)	60'	50
28	Archibald Av.	n/o Schaefer Av.	Residential	Ontario-Principal Arterial (6)	60'	55
29	Archibald Av.	n/o Edison Av.	Residential	Ontario-Principal Arterial (6)	60'	55

ID	Roadway	Segment	Adjacent Land Use[1]	Classification[1]	Distance to Adjacent Land Use (Feet)[2]	Vehicle Speed (mph)[3]
30	Archibald Av.	n/o Eucalyptus Av.	Commercial/Residential	Ontario-Principal Arterial (6)	60'	55
31	Archibald Av.	n/o Merrill Av.	Commercial/Residential	Ontario-Principal Arterial (6)	60'	55
32	Archibald Av.	n/o Limonite Av.	Business Park/Residential	Ontario-Principal Arterial (6)	60'	55
33	Archibald Av.	n/o Schleisman Rd.	Residential	Eastvale-Major Arterial (Expressway) (6)	110'	50
34	Archibald Av.	s/o Schleisman Rd.	Residential	Eastvale-Major Arterial (Expressway) (6)	110'	50
35	Edison Av.	w/o Pipeline Av.	Commercial	Chino-Major Arterial (6)	60'	45
36	Edison Av.	w/o Ramona Av.	Commercial/Industrial	Chino-Major Arterial (6)	60'	45
37	Edison Av.	w/o Central Av.	Industrial	Chino-Major Arterial (6)	60'	45
38	Edison Av.	w/o Mountain Av.	Industrial/Open Space	Chino-Major Arterial (6)	60'	45
39	Edison Av.	w/o San Antonio Av.	Residential/Open Space	Chino-Major Arterial (6)	60'	45
40	Edison Av.	w/o Euclid Av.	Commercial/Business Park	Chino-Major Arterial (6)	60'	45
41	Edison Av.	e/o Euclid Av.	Mixed-Use/Residential	Ontario-Principal Arterial (8)	84'	50
42	Edison Av.	w/o Grove Av.	Commercial/Residential	Ontario-Principal Arterial (8)	84'	50
43	Edison Av.	w/o Walker Av.	Commercial/Residential	Ontario-Principal Arterial (8)	84'	50
44	Edison Av.	w/o Archibald Av.	Residential	Ontario-Principal Arterial (8)	84'	50
45	Edison Av.	w/o Haven Av.	School/Residential	Ontario-Principal Arterial (8)	84'	50
46	Edison Av.	e/o Haven Av.	Mixed-Use/Residential	Ontario-Principal Arterial (8)	84'	50
47	Ontario Ranch Rd.	e/o Hamner Av.	Commercial	Eastvale-Urban Arterial (8)	76'	50
48	Eucalyptus Av.	w/o Bon View Av.	Residential	Ontario-Collector (4)	44'	40
49	Eucalyptus Av.	w/o Walker Av.	Business Park/Residential	Ontario-Collector (4)	44'	40
50	Eucalyptus Av.	e/o Walker Av.	Business Park/Residential	Ontario-Collector (4)	44'	40
51	Eucalyptus Av.	w/o Vineyard Av.	Mixed-Use	Ontario-Collector (4)	44'	40
52	Eucalyptus Av.	e/o Vineyard Av.	Mixed-Use	Ontario-Collector (4)	44'	40
53	Merrill Av.	e/o Euclid Av.	Commercial	Ontario-Collector (4)	44'	50
54	Merrill Av.	w/o Grove Av.	Business Park	Ontario-Collector (4)	44'	50
55	Merrill Av.	e/o Grove Av.	Business Park	Ontario-Collector (4)	44'	50
56	Merrill Av.	e/o Walker Av.	Business Park	Ontario-Collector (4)	44'	50
57	Merrill Av.	w/o Vineyard Av.	Business Park	Ontario-Collector (4)	44'	50
58	Merrill Av.	e/o Vineyard Av.	Business Park	Ontario-Collector (4)	44'	50
59	Limonite	e/o Archibald Av.	Business Park	Eastvale-Urban Arterial (6)	76'	45
60	Limonite	w/o Sumner Av.	Residential	Eastvale-Urban Arterial (6)	76'	45

ID	Roadway	Segment	Adjacent Land Use[1]	Classification[1]	Distance to Adjacent Land Use (Feet)[2]	Vehicle Speed (mph)[3]
61	Limonite	w/o Scholar Wy.	Residential	Eastvale-Urban Arterial (6)	76'	45
62	Limonite	w/o Hamner Av.	Commercial/Residential	Eastvale-Urban Arterial (6)	76'	45
63	Limonite	e/o Hamner Av.	Commercial	Eastvale-Urban Arterial (6)	76'	45

[1] Sources: Land Use Maps of the City of Chino, Ontario, and Eastvale, and aerial imagery.
[2] Distance to from centerline to adjacent land use is based upon the right-of-way distances for each roadway classification provided in the General Plan Circulation Element.
[3] Sources: Merrill Commerce Center Specific Plan Traffic Impact Analysis, prepared by Urban Crossroads, Inc.

TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES

ID	Roadway	Segment	Average Daily Traffic Volumes[1]											
			Existing 2019				Opening Year 2022		Opening Year 2025		Opening Year 2026		Horizon Year 2040	
			Without Project	With Ph. A	With Ph. A+B	With Ph. A+B+C	Without Project	With Ph. A	Without Project	With Ph. A+B	Without Project	With Ph. A+B+C	Without Project	With Ph. A+B+C
1	Euclid Av.	n/o SR-60	35,972	36,009	36,093	36,135	38,322	38,359	40,770	40,890	41,617	41,780	45,779	45,941
2	Euclid Av.	n/o SR-60 EB Ramps	35,326	35,826	36,914	37,359	38,752	39,252	41,994	43,582	43,105	45,139	49,241	51,437
3	Euclid Av.	n/o Walnut Av.	35,765	36,303	37,474	37,961	40,334	40,872	44,442	46,151	45,843	48,039	50,427	52,623
4	Euclid Av.	n/o Riverside Dr.	33,462	34,036	35,291	35,820	37,936	38,511	41,929	43,759	43,290	45,648	47,619	49,977
5	Euclid Av.	n/o Chino Av.	29,576	30,263	31,768	32,424	34,024	34,711	37,923	40,115	39,249	42,096	46,149	48,996
6	Euclid Av.	n/o Schaefer Av.	31,892	32,616	34,204	34,903	36,570	37,294	40,686	42,998	42,085	45,096	46,294	49,304
7	Euclid Av.	n/o Edison Av.	33,744	34,505	36,177	36,917	38,631	39,392	42,939	45,372	44,404	47,578	48,845	52,018
8	Euclid Av.	n/o Eucalyptus Av.	30,963	31,389	32,311	32,671	35,971	36,397	40,317	41,665	41,793	43,500	45,972	47,680
9	Euclid Av.	n/o Merrill Av.	31,921	32,198	32,786	32,977	36,446	36,723	40,448	41,313	41,810	42,866	48,126	49,182
10	Euclid Av.	n/o Kimball Av.	33,575	34,094	35,236	35,744	37,998	38,517	41,956	43,617	43,304	45,474	47,635	49,804
11	Euclid Av.	n/o Bickmore Av.	21,636	22,118	23,177	23,643	25,519	26,001	28,843	30,384	29,970	31,977	36,201	38,208
12	Euclid Av.	n/o Pine Av.	21,091	21,573	22,632	23,098	24,689	25,171	27,789	29,330	28,841	30,848	32,928	34,935
13	Euclid Av.	s/o Pine Av.	38,546	39,028	40,086	40,553	43,097	43,579	47,245	48,785	48,661	50,668	53,527	55,534
14	Grove Av.	n/o SR-60	34,434	34,546	34,796	34,923	36,660	36,771	38,985	39,346	32,823	33,312	43,993	44,482
15	Grove Av.	n/o SR-60 EB Ramps	28,308	28,532	29,032	29,285	30,194	30,417	32,147	32,871	32,823	33,800	43,993	44,970
16	Grove Av.	n/o Walnut Av.	22,747	23,045	23,712	24,050	24,327	24,625	25,946	26,911	26,505	27,808	32,876	34,179
17	Grove Av.	n/o Riverside Dr.	15,949	16,247	16,914	17,252	17,156	17,454	18,365	19,329	18,782	20,084	22,971	24,274
18	Grove Av.	n/o Chino Av.	10,733	11,106	11,939	12,362	11,694	12,066	12,619	13,825	12,937	14,566	14,231	15,860
19	Grove Av.	n/o Schaefer Av.	9,742	10,114	10,947	11,370	10,642	11,014	11,503	12,708	11,798	13,427	12,978	14,606
20	Grove Av.	n/o Edison Av.	8,618	8,990	9,824	10,247	9,450	9,822	10,237	11,443	10,507	12,136	11,558	13,187
21	Grove Av.	n/o Eucalyptus Av.	8,511	9,665	12,249	13,560	10,092	11,246	11,440	15,178	11,897	16,945	14,894	19,943
22	Grove Av.	n/o Street A	6,001	7,527	10,944	7,141	6,706	8,232	7,350	12,294	7,569	8,710	11,780	12,920
23	Grove Av.	n/o Merrill Av.	6,001	7,527	10,944	6,978	6,706	8,232	7,350	12,294	7,569	8,547	11,780	12,757
24	Archibald Av.	n/o SR-60	27,637	27,674	27,757	27,800	29,487	29,525	31,402	31,523	34,038	34,201	39,040	39,203
25	Archibald Av.	n/o SR-60 EB Ramps	28,490	28,528	28,611	28,653	39,047	39,084	33,233	33,353	34,038	34,201	39,040	39,203
26	Archibald Av.	n/o Riverside Dr.	28,202	28,683	29,742	30,208	25,682	26,164	28,160	29,701	29,006	31,013	32,033	34,040
27	Archibald Av.	n/o Chino Av.	25,434	26,027	27,336	27,929	28,266	28,860	30,875	32,778	31,767	34,263	34,944	37,439
28	Archibald Av.	n/o Schaefer Av.	20,695	21,325	22,718	23,353	23,276	23,907	25,607	27,630	26,402	29,060	35,439	38,097

ID	Roadway	Segment	Average Daily Traffic Volumes[1]											
			Existing 2019				Opening Year 2022		Opening Year 2025		Opening Year 2026		Horizon Year 2040	
			Without Project	With Ph. A	With Ph. A+B	With Ph. A+B+C	Without Project	With Ph. A	Without Project	With Ph. A+B	Without Project	With Ph. A+B+C	Without Project	With Ph. A+B+C
29	Archibald Av.	n/o Edison Av.	20,695	21,325	22,718	23,353	23,276	23,907	25,607	27,630	26,402	29,060	30,364	33,022
30	Archibald Av.	n/o Eucalyptus Av.	25,603	26,045	26,997	27,337	29,291	29,733	32,545	33,939	33,651	35,385	37,017	38,750
31	Archibald Av.	n/o Merrill Av.	25,402	25,845	26,796	27,136	29,079	29,522	32,321	33,715	33,424	35,158	36,766	38,500
32	Archibald Av.	n/o Limonite Av.	26,381	27,070	28,599	29,339	29,578	30,267	32,479	34,696	33,469	36,426	44,439	47,397
33	Archibald Av.	n/o Schleisman Rd.	25,881	26,030	26,363	26,532	28,811	28,960	31,501	31,983	32,420	33,072	32,686	33,338
34	Archibald Av.	s/o Schleisman Rd.	22,584	22,733	23,066	23,235	24,532	24,681	26,423	26,905	27,073	27,724	27,548	28,199
35	Edison Av.	w/o Pipeline Av.	33,769	34,141	34,975	35,398	36,146	36,519	38,573	39,779	39,411	41,039	47,508	49,137
36	Edison Av.	w/o Ramona Av.	28,760	29,132	29,966	30,389	30,864	31,236	32,989	34,195	33,723	35,351	36,269	37,898
37	Edison Av.	w/o Central Av.	23,425	23,797	24,631	25,054	25,328	25,700	27,201	28,407	27,846	29,474	30,599	32,228
38	Edison Av.	w/o Mountain Av.	27,197	27,607	28,524	28,989	29,407	29,816	31,582	32,908	32,331	34,122	44,784	46,575
39	Edison Av.	w/o San Antonio Av.	22,967	23,413	24,414	24,921	25,007	25,454	26,975	28,421	27,650	29,605	39,245	41,199
40	Edison Av.	w/o Euclid Av.	18,497	18,943	19,943	20,451	20,352	20,798	22,096	23,543	22,693	24,647	39,712	41,666
41	Edison Av.	e/o Euclid Av.	11,750	12,532	14,282	15,170	12,995	13,777	14,152	16,685	14,548	17,968	49,894	53,314
42	Edison Av.	w/o Grove Av.	9,786	10,567	12,318	13,206	10,863	11,644	11,857	14,389	12,197	15,617	54,534	57,954
43	Edison Av.	w/o Walker Av.	13,043	13,043	13,043	13,043	14,118	14,118	15,173	15,173	15,536	15,536	45,164	45,164
44	Edison Av.	w/o Archibald Av.	13,451	14,605	17,189	18,500	14,559	15,713	15,647	19,385	16,021	21,069	50,661	55,710
45	Edison Av.	w/o Haven Av.	20,356	21,284	23,343	24,317	22,662	23,591	24,780	27,768	25,504	29,465	35,119	39,080
46	Edison Av.	e/o Haven Av.	21,077	21,969	23,944	24,876	23,381	24,272	25,510	28,377	26,239	30,037	37,038	40,836
47	Ontario Ranch Rd.	e/o Hamner Av.	31,729	32,620	34,596	35,527	34,655	35,546	37,454	40,321	38,415	42,213	42,256	45,892
48	Eucalyptus Av.	w/o Bon View Av.	3,722	3,908	4,325	4,536	4,388	4,574	4,959	5,562	5,152	5,967	5,668	6,482
49	Eucalyptus Av.	w/o Walker Av.	1,676	1,676	1,676	6,399	2,076	2,076	2,408	2,408	2,520	7,243	9,246	13,969
50	Eucalyptus Av.	e/o Walker Av.	1,820	1,820	1,820	7,195	2,229	2,229	2,571	2,571	2,686	8,060	2,638	8,012
51	Eucalyptus Av.	w/o Vineyard Av.	1,820	1,820	1,820	5,077	2,229	2,229	2,571	2,571	2,686	5,943	8,855	12,112
52	Eucalyptus Av.	e/o Vineyard Av.	1,820	1,820	1,820	2,635	2,229	2,229	2,571	2,571	2,686	3,500	8,001	8,815
53	Merrill Av.	e/o Euclid Av.	10,350	11,146	12,877	13,576	12,274	13,070	13,914	16,441	14,470	17,696	15,917	19,143
54	Merrill Av.	w/o Grove Av.	12,265	13,098	14,912	15,653	14,204	15,037	15,891	18,538	16,464	19,853	18,111	21,499
55	Merrill Av.	e/o Grove Av.	11,949	15,275	21,783	15,311	14,206	17,533	16,127	25,962	16,778	20,140	18,456	21,818
56	Merrill Av.	e/o Walker Av.	13,238	16,455	19,817	16,600	15,606	18,823	17,634	24,213	18,321	21,684	20,153	23,516
57	Merrill Av.	w/o Vineyard Av.	13,376	15,214	18,508	16,901	15,361	17,199	17,104	22,236	17,697	21,222	19,466	22,991
58	Merrill Av.	e/o Vineyard Av.	13,865	15,034	17,839	18,231	16,495	17,663	18,731	22,704	19,489	23,854	21,437	25,803

ID	Roadway	Segment	Average Daily Traffic Volumes[1]											
			Existing 2019				Opening Year 2022		Opening Year 2025		Opening Year 2026		Horizon Year 2040	
			Without Project	With Ph. A	With Ph. A+B	With Ph. A+B+C	Without Project	With Ph. A	Without Project	With Ph. A+B	Without Project	With Ph. A+B+C	Without Project	With Ph. A+B+C
59	Limonite	e/o Archibald Av.	18,317	18,856	20,051	20,623	21,551	22,091	24,326	26,061	25,267	27,573	41,128	43,434
60	Limonite	w/o Sumner Av.	19,941	20,481	21,676	22,248	23,253	23,793	26,117	27,852	27,089	29,395	43,632	45,938
61	Limonite	w/o Scholar Wy.	19,540	20,042	21,154	21,683	22,796	23,299	25,611	27,226	26,567	28,710	38,095	40,238
62	Limonite	w/o Hamner Av.	20,117	20,620	21,731	22,261	23,400	23,902	26,245	27,859	27,211	29,354	32,544	34,688
63	Limonite	e/o Hamner Av.	21,611	22,076	23,105	23,592	24,725	25,190	27,472	28,966	28,407	30,387	43,201	45,181

1 Source: Merrill Commerce Center Specific Plan Traffic Impact Analysis, Urban Crossroads, Inc.

"n/a" = Roadway segment does not represent a paved and/or fully constructed roadway under the given scenario.

TABLE 6-3: TIME OF DAY VEHICLE SPLITS

Vehicle Type	Time of Day Splits			Total of Time of Day Splits
	Daytime	Evening	Nighttime	
Autos	71.84%	8.94%	19.21%	100.00%
Medium Trucks	69.40%	10.03%	20.58%	100.00%
Heavy Trucks	68.99%	7.63%	23.39%	100.00%

Based on an existing vehicle count taken at Euclid Avenue between Eucalyptus Avenue and Merrill Avenue (Merrill Commerce Center Specific Plan Traffic Impact Analysis, Urban Crossroads, Inc.). Vehicle mix percentage values rounded to the nearest one-hundredth.
"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			Total
	Autos	Medium Trucks	Heavy Trucks	
All Segments	81.37%	11.33%	7.30%	100.00%

Based on an existing vehicle count taken at Euclid Avenue between Eucalyptus Avenue and Merrill Avenue (Merrill Commerce Center Specific Plan Traffic Impact Analysis, Urban Crossroads, Inc.). Vehicle mix percentage values rounded to the nearest one-hundredth.
"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 6-5: EXISTING (2019) WITH PHASE A VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Euclid Av.	n/o SR-60	81.39%	11.32%	7.29%	100.00%
2	Euclid Av.	n/o SR-60 EB Ramps	80.85%	11.49%	7.66%	100.00%
3	Euclid Av.	n/o Walnut Av.	80.88%	11.47%	7.65%	100.00%
4	Euclid Av.	n/o Riverside Dr.	80.87%	11.47%	7.66%	100.00%
5	Euclid Av.	n/o Chino Av.	80.87%	11.45%	7.68%	100.00%
6	Euclid Av.	n/o Schaefer Av.	80.93%	11.43%	7.64%	100.00%
7	Euclid Av.	n/o Edison Av.	80.98%	11.41%	7.62%	100.00%
8	Euclid Av.	n/o Eucalyptus Av.	80.74%	11.54%	7.73%	100.00%
9	Euclid Av.	n/o Merrill Av.	80.67%	11.58%	7.75%	100.00%
10	Euclid Av.	n/o Kimball Av.	81.11%	11.38%	7.51%	100.00%
11	Euclid Av.	n/o Bickmore Av.	80.94%	11.42%	7.64%	100.00%
12	Euclid Av.	n/o Pine Av.	80.93%	11.43%	7.64%	100.00%
13	Euclid Av.	s/o Pine Av.	81.13%	11.38%	7.49%	100.00%
14	Grove Av.	n/o SR-60	81.43%	11.29%	7.28%	100.00%
15	Grove Av.	n/o SR-60 EB Ramps	81.51%	11.24%	7.24%	100.00%
16	Grove Av.	n/o Walnut Av.	81.61%	11.18%	7.21%	100.00%
17	Grove Av.	n/o Riverside Dr.	81.71%	11.12%	7.17%	100.00%
18	Grove Av.	n/o Chino Av.	81.99%	10.95%	7.06%	100.00%
19	Grove Av.	n/o Schaefer Av.	82.05%	10.91%	7.03%	100.00%
20	Grove Av.	n/o Edison Av.	82.14%	10.86%	7.00%	100.00%
21	Grove Av.	n/o Eucalyptus Av.	83.59%	9.98%	6.43%	100.00%
22	Grove Av.	n/o Street A	85.14%	9.03%	5.82%	100.00%

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
23	Grove Av.	n/o Merrill Av.	85.14%	9.03%	5.82%	100.00%
24	Archibald Av.	n/o SR-60	81.39%	11.32%	7.29%	100.00%
25	Archibald Av.	n/o SR-60 EB Ramps	81.39%	11.32%	7.29%	100.00%
26	Archibald Av.	n/o Riverside Dr.	81.04%	11.40%	7.56%	100.00%
27	Archibald Av.	n/o Chino Av.	81.08%	11.36%	7.55%	100.00%
28	Archibald Av.	n/o Schaefer Av.	81.06%	11.35%	7.60%	100.00%
29	Archibald Av.	n/o Edison Av.	81.06%	11.35%	7.60%	100.00%
30	Archibald Av.	n/o Eucalyptus Av.	80.27%	11.71%	8.01%	100.00%
31	Archibald Av.	n/o Merrill Av.	80.26%	11.72%	8.02%	100.00%
32	Archibald Av.	n/o Limonite Av.	81.50%	11.18%	7.32%	100.00%
33	Archibald Av.	n/o Schleisman Rd.	81.47%	11.27%	7.26%	100.00%
34	Archibald Av.	s/o Schleisman Rd.	81.49%	11.26%	7.25%	100.00%
35	Edison Av.	w/o Pipeline Av.	81.57%	11.21%	7.22%	100.00%
36	Edison Av.	w/o Ramona Av.	81.61%	11.19%	7.21%	100.00%
37	Edison Av.	w/o Central Av.	81.66%	11.15%	7.19%	100.00%
38	Edison Av.	w/o Mountain Av.	81.64%	11.16%	7.19%	100.00%
39	Edison Av.	w/o San Antonio Av.	81.72%	11.11%	7.16%	100.00%
40	Edison Av.	w/o Euclid Av.	81.81%	11.06%	7.13%	100.00%
41	Edison Av.	e/o Euclid Av.	82.53%	10.62%	6.85%	100.00%
42	Edison Av.	w/o Grove Av.	82.75%	10.49%	6.76%	100.00%
43	Edison Av.	w/o Walker Av.	81.37%	11.33%	7.30%	100.00%
44	Edison Av.	w/o Archibald Av.	82.84%	10.44%	6.73%	100.00%
45	Edison Av.	w/o Haven Av.	81.32%	11.19%	7.50%	100.00%
46	Edison Av.	e/o Haven Av.	81.29%	11.21%	7.50%	100.00%
47	Ontario Ranch Rd.	e/o Hamner Av.	81.31%	11.25%	7.44%	100.00%
48	Eucalyptus Av.	w/o Bon View Av.	82.25%	10.79%	6.95%	100.00%
49	Eucalyptus Av.	w/o Walker Av.	81.37%	11.33%	7.30%	100.00%
50	Eucalyptus Av.	e/o Walker Av.	81.37%	11.33%	7.30%	100.00%
51	Eucalyptus Av.	w/o Vineyard Av.	81.37%	11.33%	7.30%	100.00%
52	Eucalyptus Av.	e/o Vineyard Av.	81.37%	11.33%	7.30%	100.00%
53	Merrill Av.	e/o Euclid Av.	78.56%	12.21%	9.23%	100.00%
54	Merrill Av.	w/o Grove Av.	79.03%	12.05%	8.92%	100.00%
55	Merrill Av.	e/o Grove Av.	82.41%	10.09%	7.50%	100.00%
56	Merrill Av.	e/o Walker Av.	83.33%	9.80%	6.87%	100.00%
57	Merrill Av.	w/o Vineyard Av.	80.59%	11.20%	8.21%	100.00%
58	Merrill Av.	e/o Vineyard Av.	79.75%	11.70%	8.55%	100.00%
59	Limonite	e/o Archibald Av.	81.41%	11.21%	7.38%	100.00%
60	Limonite	w/o Sumner Av.	81.40%	11.22%	7.38%	100.00%
61	Limonite	w/o Scholar Wy.	81.37%	11.24%	7.39%	100.00%
62	Limonite	w/o Hamner Av.	81.37%	11.24%	7.39%	100.00%
63	Limonite	e/o Hamner Av.	81.34%	11.26%	7.40%	100.00%

[1] Source: Merrill Commerce Center Specific Plan Traffic Impact Analysis, Urban Crossroads, Inc.

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

TABLE 6-6: EXISTING (2019) WITH PHASE A+B VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Euclid Av.	n/o SR-60	81.43%	11.29%	7.28%	100.00%
2	Euclid Av.	n/o SR-60 EB Ramps	79.83%	11.81%	8.36%	100.00%
3	Euclid Av.	n/o Walnut Av.	79.91%	11.77%	8.32%	100.00%
4	Euclid Av.	n/o Riverside Dr.	79.88%	11.76%	8.36%	100.00%
5	Euclid Av.	n/o Chino Av.	79.93%	11.68%	8.39%	100.00%
6	Euclid Av.	n/o Schaefer Av.	80.10%	11.61%	8.29%	100.00%
7	Euclid Av.	n/o Edison Av.	80.23%	11.56%	8.21%	100.00%
8	Euclid Av.	n/o Eucalyptus Av.	79.47%	11.97%	8.57%	100.00%
9	Euclid Av.	n/o Merrill Av.	79.22%	12.12%	8.66%	100.00%
10	Euclid Av.	n/o Kimball Av.	80.61%	11.47%	7.92%	100.00%
11	Euclid Av.	n/o Bickmore Av.	80.12%	11.60%	8.27%	100.00%
12	Euclid Av.	n/o Pine Av.	80.09%	11.61%	8.30%	100.00%
13	Euclid Av.	s/o Pine Av.	80.65%	11.49%	7.86%	100.00%
14	Grove Av.	n/o SR-60	81.56%	11.21%	7.23%	100.00%
15	Grove Av.	n/o SR-60 EB Ramps	81.83%	11.05%	7.12%	100.00%
16	Grove Av.	n/o Walnut Av.	82.13%	10.87%	7.00%	100.00%
17	Grove Av.	n/o Riverside Dr.	82.43%	10.68%	6.89%	100.00%
18	Grove Av.	n/o Chino Av.	83.25%	10.19%	6.56%	100.00%
19	Grove Av.	n/o Schaefer Av.	83.42%	10.08%	6.50%	100.00%
20	Grove Av.	n/o Edison Av.	83.65%	9.94%	6.41%	100.00%
21	Grove Av.	n/o Eucalyptus Av.	87.05%	7.87%	5.07%	100.00%
22	Grove Av.	n/o Street A	89.78%	6.21%	4.00%	100.00%
23	Grove Av.	n/o Merrill Av.	89.78%	6.21%	4.00%	100.00%
24	Archibald Av.	n/o SR-60	81.45%	11.28%	7.27%	100.00%
25	Archibald Av.	n/o SR-60 EB Ramps	81.45%	11.28%	7.27%	100.00%
26	Archibald Av.	n/o Riverside Dr.	80.40%	11.54%	8.06%	100.00%
27	Archibald Av.	n/o Chino Av.	80.56%	11.41%	8.03%	100.00%
28	Archibald Av.	n/o Schaefer Av.	80.49%	11.37%	8.14%	100.00%
29	Archibald Av.	n/o Edison Av.	80.49%	11.37%	8.14%	100.00%
30	Archibald Av.	n/o Eucalyptus Av.	78.06%	12.51%	9.43%	100.00%
31	Archibald Av.	n/o Merrill Av.	78.03%	12.52%	9.44%	100.00%
32	Archibald Av.	n/o Limonite Av.	81.80%	10.87%	7.33%	100.00%
33	Archibald Av.	n/o Schleisman Rd.	81.71%	11.12%	7.17%	100.00%
34	Archibald Av.	s/o Schleisman Rd.	81.76%	11.09%	7.15%	100.00%
35	Edison Av.	w/o Pipeline Av.	82.01%	10.94%	7.05%	100.00%
36	Edison Av.	w/o Ramona Av.	82.12%	10.88%	7.01%	100.00%
37	Edison Av.	w/o Central Av.	82.28%	10.78%	6.94%	100.00%
38	Edison Av.	w/o Mountain Av.	82.23%	10.80%	6.96%	100.00%
39	Edison Av.	w/o San Antonio Av.	82.47%	10.66%	6.87%	100.00%
40	Edison Av.	w/o Euclid Av.	82.72%	10.51%	6.77%	100.00%
41	Edison Av.	e/o Euclid Av.	84.67%	9.32%	6.01%	100.00%
42	Edison Av.	w/o Grove Av.	85.20%	9.00%	5.80%	100.00%
43	Edison Av.	w/o Walker Av.	81.37%	11.33%	7.30%	100.00%
44	Edison Av.	w/o Archibald Av.	85.42%	8.87%	5.71%	100.00%

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
45	Edison Av.	w/o Haven Av.	81.28%	10.90%	7.82%	100.00%
46	Edison Av.	e/o Haven Av.	81.19%	10.97%	7.84%	100.00%
47	Ontario Ranch Rd.	e/o Hamner Av.	81.25%	11.08%	7.67%	100.00%
48	Eucalyptus Av.	w/o Bon View Av.	83.96%	9.75%	6.28%	100.00%
49	Eucalyptus Av.	w/o Walker Av.	81.37%	11.33%	7.30%	100.00%
50	Eucalyptus Av.	e/o Walker Av.	81.37%	11.33%	7.30%	100.00%
51	Eucalyptus Av.	w/o Vineyard Av.	81.37%	11.33%	7.30%	100.00%
52	Eucalyptus Av.	e/o Vineyard Av.	81.37%	11.33%	7.30%	100.00%
53	Merrill Av.	e/o Euclid Av.	73.83%	13.74%	12.43%	100.00%
54	Merrill Av.	w/o Grove Av.	75.01%	13.32%	11.67%	100.00%
55	Merrill Av.	e/o Grove Av.	84.49%	8.41%	7.11%	100.00%
56	Merrill Av.	e/o Walker Av.	81.73%	9.98%	8.29%	100.00%
57	Merrill Av.	w/o Vineyard Av.	80.30%	10.77%	8.93%	100.00%
58	Merrill Av.	e/o Vineyard Av.	77.44%	12.15%	10.41%	100.00%
59	Limonite	e/o Archibald Av.	81.54%	10.94%	7.51%	100.00%
60	Limonite	w/o Sumner Av.	81.53%	10.97%	7.50%	100.00%
61	Limonite	w/o Scholar Wy.	81.43%	11.03%	7.54%	100.00%
62	Limonite	w/o Hamner Av.	81.43%	11.04%	7.54%	100.00%
63	Limonite	e/o Hamner Av.	81.33%	11.11%	7.56%	100.00%

[1] Source: Merrill Commerce Center Specific Plan Traffic Impact Analysis, Urban Crossroads, Inc.

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

TABLE 6-7: EXISTING (2019) WITH PHASE A+B+C VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Euclid Av.	n/o SR-60	81.45%	11.28%	7.27%	100.00%
2	Euclid Av.	n/o SR-60 EB Ramps	79.55%	11.76%	8.69%	100.00%
3	Euclid Av.	n/o Walnut Av.	79.66%	11.70%	8.63%	100.00%
4	Euclid Av.	n/o Riverside Dr.	79.65%	11.67%	8.68%	100.00%
5	Euclid Av.	n/o Chino Av.	79.75%	11.54%	8.71%	100.00%
6	Euclid Av.	n/o Schaefer Av.	79.95%	11.47%	8.58%	100.00%
7	Euclid Av.	n/o Edison Av.	80.11%	11.41%	8.48%	100.00%
8	Euclid Av.	n/o Eucalyptus Av.	79.11%	11.93%	8.96%	100.00%
9	Euclid Av.	n/o Merrill Av.	78.76%	12.15%	9.09%	100.00%
10	Euclid Av.	n/o Kimball Av.	80.53%	11.37%	8.10%	100.00%
11	Euclid Av.	n/o Bickmore Av.	79.97%	11.47%	8.56%	100.00%
12	Euclid Av.	n/o Pine Av.	79.94%	11.47%	8.59%	100.00%
13	Euclid Av.	s/o Pine Av.	80.55%	11.41%	8.04%	100.00%
14	Grove Av.	n/o SR-60	81.63%	11.17%	7.20%	100.00%
15	Grove Av.	n/o SR-60 EB Ramps	81.99%	10.95%	7.06%	100.00%
16	Grove Av.	n/o Walnut Av.	82.38%	10.72%	6.91%	100.00%
17	Grove Av.	n/o Riverside Dr.	82.77%	10.48%	6.75%	100.00%
18	Grove Av.	n/o Chino Av.	83.82%	9.84%	6.34%	100.00%
19	Grove Av.	n/o Schaefer Av.	84.04%	9.71%	6.26%	100.00%
20	Grove Av.	n/o Edison Av.	84.33%	9.53%	6.14%	100.00%
21	Grove Av.	n/o Eucalyptus Av.	88.30%	7.11%	4.58%	100.00%
22	Grove Av.	n/o Street A	84.34%	9.52%	6.14%	100.00%
23	Grove Av.	n/o Merrill Av.	83.98%	9.74%	6.28%	100.00%
24	Archibald Av.	n/o SR-60	81.48%	11.26%	7.26%	100.00%
25	Archibald Av.	n/o SR-60 EB Ramps	81.47%	11.27%	7.26%	100.00%
26	Archibald Av.	n/o Riverside Dr.	80.27%	11.44%	8.29%	100.00%
27	Archibald Av.	n/o Chino Av.	80.51%	11.25%	8.24%	100.00%
28	Archibald Av.	n/o Schaefer Av.	80.47%	11.15%	8.37%	100.00%
29	Archibald Av.	n/o Edison Av.	80.47%	11.15%	8.37%	100.00%
30	Archibald Av.	n/o Eucalyptus Av.	77.40%	12.51%	10.09%	100.00%
31	Archibald Av.	n/o Merrill Av.	77.37%	12.52%	10.11%	100.00%
32	Archibald Av.	n/o Limonite Av.	82.05%	10.63%	7.32%	100.00%
33	Archibald Av.	n/o Schleisman Rd.	81.82%	11.05%	7.12%	100.00%
34	Archibald Av.	s/o Schleisman Rd.	81.89%	11.01%	7.10%	100.00%
35	Edison Av.	w/o Pipeline Av.	82.22%	10.81%	6.97%	100.00%
36	Edison Av.	w/o Ramona Av.	82.37%	10.72%	6.91%	100.00%
37	Edison Av.	w/o Central Av.	82.58%	10.59%	6.83%	100.00%
38	Edison Av.	w/o Mountain Av.	82.52%	10.63%	6.85%	100.00%
39	Edison Av.	w/o San Antonio Av.	82.83%	10.44%	6.73%	100.00%
40	Edison Av.	w/o Euclid Av.	83.15%	10.25%	6.60%	100.00%
41	Edison Av.	e/o Euclid Av.	85.57%	8.78%	5.66%	100.00%
42	Edison Av.	w/o Grove Av.	86.19%	8.40%	5.41%	100.00%
43	Edison Av.	w/o Walker Av.	81.37%	11.33%	7.30%	100.00%
44	Edison Av.	w/o Archibald Av.	86.45%	8.24%	5.31%	100.00%

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
45	Edison Av.	w/o Haven Av.	81.51%	10.55%	7.94%	100.00%
46	Edison Av.	e/o Haven Av.	81.38%	10.65%	7.97%	100.00%
47	Ontario Ranch Rd.	e/o Hamner Av.	81.38%	10.85%	7.77%	100.00%
48	Eucalyptus Av.	w/o Bon View Av.	84.71%	9.30%	5.99%	100.00%
49	Eucalyptus Av.	w/o Walker Av.	95.12%	2.97%	1.91%	100.00%
50	Eucalyptus Av.	e/o Walker Av.	95.29%	2.87%	1.85%	100.00%
51	Eucalyptus Av.	w/o Vineyard Av.	93.32%	4.06%	2.62%	100.00%
52	Eucalyptus Av.	e/o Vineyard Av.	87.13%	7.83%	5.05%	100.00%
53	Merrill Av.	e/o Euclid Av.	72.83%	13.43%	13.74%	100.00%
54	Merrill Av.	w/o Grove Av.	74.16%	13.03%	12.81%	100.00%
55	Merrill Av.	e/o Grove Av.	76.26%	12.24%	11.50%	100.00%
56	Merrill Av.	e/o Walker Av.	76.66%	12.17%	11.17%	100.00%
57	Merrill Av.	w/o Vineyard Av.	76.92%	12.04%	11.03%	100.00%
58	Merrill Av.	e/o Vineyard Av.	76.18%	12.18%	11.64%	100.00%
59	Limonite	e/o Archibald Av.	81.74%	10.69%	7.56%	100.00%
60	Limonite	w/o Sumner Av.	81.72%	10.74%	7.54%	100.00%
61	Limonite	w/o Scholar Wy.	81.59%	10.81%	7.60%	100.00%
62	Limonite	w/o Hamner Av.	81.58%	10.82%	7.60%	100.00%
63	Limonite	e/o Hamner Av.	81.44%	10.93%	7.63%	100.00%

[1] Source: Merrill Commerce Center Specific Plan Traffic Impact Analysis, Urban Crossroads, Inc.

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

TABLE 6-8: OPENING YEAR 2022 WITH PHASE A VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Euclid Av.	n/o SR-60	81.39%	11.32%	7.29%	100.00%
2	Euclid Av.	n/o SR-60 EB Ramps	80.90%	11.47%	7.63%	100.00%
3	Euclid Av.	n/o Walnut Av.	80.93%	11.46%	7.61%	100.00%
4	Euclid Av.	n/o Riverside Dr.	80.93%	11.46%	7.62%	100.00%
5	Euclid Av.	n/o Chino Av.	80.94%	11.43%	7.63%	100.00%
6	Euclid Av.	n/o Schaefer Av.	80.99%	11.41%	7.60%	100.00%
7	Euclid Av.	n/o Edison Av.	81.02%	11.40%	7.58%	100.00%
8	Euclid Av.	n/o Eucalyptus Av.	80.82%	11.51%	7.67%	100.00%
9	Euclid Av.	n/o Merrill Av.	80.75%	11.55%	7.69%	100.00%
10	Euclid Av.	n/o Kimball Av.	81.14%	11.37%	7.49%	100.00%
11	Euclid Av.	n/o Bickmore Av.	81.00%	11.41%	7.59%	100.00%
12	Euclid Av.	n/o Pine Av.	80.99%	11.41%	7.60%	100.00%
13	Euclid Av.	s/o Pine Av.	81.15%	11.38%	7.47%	100.00%
14	Grove Av.	n/o SR-60	81.42%	11.30%	7.28%	100.00%
15	Grove Av.	n/o SR-60 EB Ramps	81.50%	11.25%	7.25%	100.00%
16	Grove Av.	n/o Walnut Av.	81.59%	11.19%	7.21%	100.00%
17	Grove Av.	n/o Riverside Dr.	81.68%	11.14%	7.18%	100.00%
18	Grove Av.	n/o Chino Av.	81.94%	10.98%	7.08%	100.00%
19	Grove Av.	n/o Schaefer Av.	82.00%	10.95%	7.06%	100.00%
20	Grove Av.	n/o Edison Av.	82.07%	10.90%	7.03%	100.00%
21	Grove Av.	n/o Eucalyptus Av.	83.28%	10.17%	6.55%	100.00%
22	Grove Av.	n/o Street A	84.82%	9.23%	5.95%	100.00%
23	Grove Av.	n/o Merrill Av.	84.82%	9.23%	5.95%	100.00%
24	Archibald Av.	n/o SR-60	81.39%	11.32%	7.29%	100.00%
25	Archibald Av.	n/o SR-60 EB Ramps	81.38%	11.32%	7.30%	100.00%
26	Archibald Av.	n/o Riverside Dr.	81.01%	11.41%	7.58%	100.00%
27	Archibald Av.	n/o Chino Av.	81.11%	11.36%	7.53%	100.00%
28	Archibald Av.	n/o Schaefer Av.	81.09%	11.35%	7.57%	100.00%
29	Archibald Av.	n/o Edison Av.	81.09%	11.35%	7.57%	100.00%
30	Archibald Av.	n/o Eucalyptus Av.	80.41%	11.67%	7.93%	100.00%
31	Archibald Av.	n/o Merrill Av.	80.40%	11.67%	7.93%	100.00%
32	Archibald Av.	n/o Limonite Av.	81.48%	11.20%	7.32%	100.00%
33	Archibald Av.	n/o Schleisman Rd.	81.46%	11.27%	7.26%	100.00%
34	Archibald Av.	s/o Schleisman Rd.	81.48%	11.26%	7.26%	100.00%
35	Edison Av.	w/o Pipeline Av.	81.56%	11.22%	7.23%	100.00%
36	Edison Av.	w/o Ramona Av.	81.59%	11.20%	7.21%	100.00%
37	Edison Av.	w/o Central Av.	81.64%	11.17%	7.20%	100.00%
38	Edison Av.	w/o Mountain Av.	81.62%	11.18%	7.20%	100.00%
39	Edison Av.	w/o San Antonio Av.	81.69%	11.13%	7.17%	100.00%
40	Edison Av.	w/o Euclid Av.	81.77%	11.09%	7.15%	100.00%
41	Edison Av.	e/o Euclid Av.	82.42%	10.69%	6.89%	100.00%
42	Edison Av.	w/o Grove Av.	82.62%	10.57%	6.81%	100.00%
43	Edison Av.	w/o Walker Av.	81.37%	11.33%	7.30%	100.00%
44	Edison Av.	w/o Archibald Av.	82.74%	10.50%	6.77%	100.00%

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
45	Edison Av.	w/o Haven Av.	81.32%	11.20%	7.48%	100.00%
46	Edison Av.	e/o Haven Av.	81.29%	11.22%	7.48%	100.00%
47	Ontario Ranch Rd.	e/o Hamner Av.	81.32%	11.26%	7.43%	100.00%
48	Eucalyptus Av.	w/o Bon View Av.	82.13%	10.87%	7.00%	100.00%
49	Eucalyptus Av.	w/o Walker Av.	81.37%	11.33%	7.30%	100.00%
50	Eucalyptus Av.	e/o Walker Av.	81.37%	11.33%	7.30%	100.00%
51	Eucalyptus Av.	w/o Vineyard Av.	81.37%	11.33%	7.30%	100.00%
52	Eucalyptus Av.	e/o Vineyard Av.	81.37%	11.33%	7.30%	100.00%
53	Merrill Av.	e/o Euclid Av.	78.97%	12.08%	8.95%	100.00%
54	Merrill Av.	w/o Grove Av.	79.33%	11.95%	8.71%	100.00%
55	Merrill Av.	e/o Grove Av.	82.27%	10.25%	7.47%	100.00%
56	Merrill Av.	e/o Walker Av.	83.08%	9.99%	6.93%	100.00%
57	Merrill Av.	w/o Vineyard Av.	80.68%	11.21%	8.11%	100.00%
58	Merrill Av.	e/o Vineyard Av.	79.99%	11.65%	8.36%	100.00%
59	Limonite	e/o Archibald Av.	81.40%	11.23%	7.37%	100.00%
60	Limonite	w/o Sumner Av.	81.40%	11.23%	7.37%	100.00%
61	Limonite	w/o Scholar Wy.	81.37%	11.25%	7.38%	100.00%
62	Limonite	w/o Hamner Av.	81.37%	11.25%	7.38%	100.00%
63	Limonite	e/o Hamner Av.	81.34%	11.27%	7.39%	100.00%

[1] Source: Merrill Commerce Center Specific Plan Traffic Impact Analysis, Urban Crossroads, Inc.

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

TABLE 6-9: OPENING YEAR 2025 WITH PHASE A+B VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Euclid Av.	n/o SR-60	81.42%	11.30%	7.28%	100.00%
2	Euclid Av.	n/o SR-60 EB Ramps	80.06%	11.74%	8.20%	100.00%
3	Euclid Av.	n/o Walnut Av.	80.18%	11.69%	8.13%	100.00%
4	Euclid Av.	n/o Riverside Dr.	80.17%	11.68%	8.16%	100.00%
5	Euclid Av.	n/o Chino Av.	80.23%	11.60%	8.17%	100.00%
6	Euclid Av.	n/o Schaefer Av.	80.36%	11.55%	8.09%	100.00%
7	Euclid Av.	n/o Edison Av.	80.46%	11.51%	8.03%	100.00%
8	Euclid Av.	n/o Eucalyptus Av.	79.89%	11.82%	8.28%	100.00%
9	Euclid Av.	n/o Merrill Av.	79.66%	11.96%	8.38%	100.00%
10	Euclid Av.	n/o Kimball Av.	80.76%	11.45%	7.80%	100.00%
11	Euclid Av.	n/o Bickmore Av.	80.42%	11.54%	8.04%	100.00%
12	Euclid Av.	n/o Pine Av.	80.38%	11.55%	8.07%	100.00%
13	Euclid Av.	s/o Pine Av.	80.77%	11.46%	7.76%	100.00%
14	Grove Av.	n/o SR-60	81.54%	11.23%	7.23%	100.00%
15	Grove Av.	n/o SR-60 EB Ramps	81.78%	11.08%	7.14%	100.00%
16	Grove Av.	n/o Walnut Av.	82.03%	10.92%	7.04%	100.00%
17	Grove Av.	n/o Riverside Dr.	82.30%	10.77%	6.94%	100.00%
18	Grove Av.	n/o Chino Av.	82.99%	10.34%	6.67%	100.00%
19	Grove Av.	n/o Schaefer Av.	83.13%	10.26%	6.61%	100.00%
20	Grove Av.	n/o Edison Av.	83.33%	10.14%	6.53%	100.00%
21	Grove Av.	n/o Eucalyptus Av.	85.96%	8.54%	5.50%	100.00%
22	Grove Av.	n/o Street A	88.86%	6.77%	4.37%	100.00%
23	Grove Av.	n/o Merrill Av.	88.86%	6.77%	4.37%	100.00%
24	Archibald Av.	n/o SR-60	81.44%	11.29%	7.27%	100.00%
25	Archibald Av.	n/o SR-60 EB Ramps	81.43%	11.29%	7.28%	100.00%
26	Archibald Av.	n/o Riverside Dr.	80.39%	11.54%	8.06%	100.00%
27	Archibald Av.	n/o Chino Av.	80.69%	11.40%	7.91%	100.00%
28	Archibald Av.	n/o Schaefer Av.	80.65%	11.36%	7.99%	100.00%
29	Archibald Av.	n/o Edison Av.	80.65%	11.36%	7.99%	100.00%
30	Archibald Av.	n/o Eucalyptus Av.	78.74%	12.27%	8.99%	100.00%
31	Archibald Av.	n/o Merrill Av.	78.72%	12.28%	9.01%	100.00%
32	Archibald Av.	n/o Limonite Av.	81.73%	10.95%	7.32%	100.00%
33	Archibald Av.	n/o Schleisman Rd.	81.65%	11.16%	7.19%	100.00%
34	Archibald Av.	s/o Schleisman Rd.	81.70%	11.13%	7.17%	100.00%
35	Edison Av.	w/o Pipeline Av.	81.93%	10.99%	7.08%	100.00%
36	Edison Av.	w/o Ramona Av.	82.02%	10.93%	7.04%	100.00%
37	Edison Av.	w/o Central Av.	82.16%	10.85%	6.99%	100.00%
38	Edison Av.	w/o Mountain Av.	82.12%	10.87%	7.01%	100.00%
39	Edison Av.	w/o San Antonio Av.	82.32%	10.75%	6.93%	100.00%
40	Edison Av.	w/o Euclid Av.	82.51%	10.63%	6.85%	100.00%
41	Edison Av.	e/o Euclid Av.	84.19%	9.61%	6.19%	100.00%
42	Edison Av.	w/o Grove Av.	84.65%	9.34%	6.02%	100.00%
43	Edison Av.	w/o Walker Av.	81.37%	11.33%	7.30%	100.00%
44	Edison Av.	w/o Archibald Av.	84.96%	9.15%	5.89%	100.00%

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
45	Edison Av.	w/o Haven Av.	81.30%	10.97%	7.73%	100.00%
46	Edison Av.	e/o Haven Av.	81.22%	11.02%	7.76%	100.00%
47	Ontario Ranch Rd.	e/o Hamner Av.	81.26%	11.12%	7.62%	100.00%
48	Eucalyptus Av.	w/o Bon View Av.	83.39%	10.10%	6.51%	100.00%
49	Eucalyptus Av.	w/o Walker Av.	81.37%	11.33%	7.30%	100.00%
50	Eucalyptus Av.	e/o Walker Av.	81.37%	11.33%	7.30%	100.00%
51	Eucalyptus Av.	w/o Vineyard Av.	81.37%	11.33%	7.30%	100.00%
52	Eucalyptus Av.	e/o Vineyard Av.	81.37%	11.33%	7.30%	100.00%
53	Merrill Av.	e/o Euclid Av.	75.47%	13.22%	11.32%	100.00%
54	Merrill Av.	w/o Grove Av.	76.25%	12.93%	10.82%	100.00%
55	Merrill Av.	e/o Grove Av.	83.98%	8.88%	7.14%	100.00%
56	Merrill Av.	e/o Walker Av.	81.67%	10.22%	8.11%	100.00%
57	Merrill Av.	w/o Vineyard Av.	80.48%	10.86%	8.66%	100.00%
58	Merrill Av.	e/o Vineyard Av.	78.28%	11.97%	9.75%	100.00%
59	Limonite	e/o Archibald Av.	81.50%	11.03%	7.46%	100.00%
60	Limonite	w/o Sumner Av.	81.49%	11.05%	7.45%	100.00%
61	Limonite	w/o Scholar Wy.	81.41%	11.10%	7.49%	100.00%
62	Limonite	w/o Hamner Av.	81.41%	11.10%	7.49%	100.00%
63	Limonite	e/o Hamner Av.	81.33%	11.16%	7.51%	100.00%

[1] Source: Merrill Commerce Center Specific Plan Traffic Impact Analysis, Urban Crossroads, Inc.

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

TABLE 6-10: OPENING YEAR 2026 WITH PHASE A+B+C VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Euclid Av.	n/o SR-60	81.44%	11.29%	7.27%	100.00%
2	Euclid Av.	n/o SR-60 EB Ramps	79.87%	11.68%	8.45%	100.00%
3	Euclid Av.	n/o Walnut Av.	80.02%	11.62%	8.35%	100.00%
4	Euclid Av.	n/o Riverside Dr.	80.02%	11.60%	8.38%	100.00%
5	Euclid Av.	n/o Chino Av.	80.12%	11.49%	8.39%	100.00%
6	Euclid Av.	n/o Schaefer Av.	80.27%	11.44%	8.29%	100.00%
7	Euclid Av.	n/o Edison Av.	80.39%	11.39%	8.21%	100.00%
8	Euclid Av.	n/o Eucalyptus Av.	79.67%	11.78%	8.55%	100.00%
9	Euclid Av.	n/o Merrill Av.	79.36%	11.96%	8.68%	100.00%
10	Euclid Av.	n/o Kimball Av.	80.71%	11.36%	7.93%	100.00%
11	Euclid Av.	n/o Bickmore Av.	80.33%	11.43%	8.23%	100.00%
12	Euclid Av.	n/o Pine Av.	80.30%	11.44%	8.27%	100.00%
13	Euclid Av.	s/o Pine Av.	80.72%	11.40%	7.89%	100.00%
14	Grove Av.	n/o SR-60	81.64%	11.16%	7.19%	100.00%
15	Grove Av.	n/o SR-60 EB Ramps	81.91%	11.00%	7.09%	100.00%
16	Grove Av.	n/o Walnut Av.	82.24%	10.80%	6.96%	100.00%
17	Grove Av.	n/o Riverside Dr.	82.58%	10.60%	6.83%	100.00%
18	Grove Av.	n/o Chino Av.	83.45%	10.06%	6.49%	100.00%
19	Grove Av.	n/o Schaefer Av.	83.63%	9.96%	6.42%	100.00%
20	Grove Av.	n/o Edison Av.	83.87%	9.81%	6.32%	100.00%
21	Grove Av.	n/o Eucalyptus Av.	86.92%	7.96%	5.13%	100.00%
22	Grove Av.	n/o Street A	83.81%	9.85%	6.35%	100.00%
23	Grove Av.	n/o Merrill Av.	83.50%	10.04%	6.47%	100.00%
24	Archibald Av.	n/o SR-60	81.46%	11.28%	7.27%	100.00%
25	Archibald Av.	n/o SR-60 EB Ramps	81.46%	11.28%	7.27%	100.00%
26	Archibald Av.	n/o Riverside Dr.	80.30%	11.44%	8.26%	100.00%
27	Archibald Av.	n/o Chino Av.	80.67%	11.26%	8.07%	100.00%
28	Archibald Av.	n/o Schaefer Av.	80.65%	11.19%	8.16%	100.00%
29	Archibald Av.	n/o Edison Av.	80.65%	11.19%	8.16%	100.00%
30	Archibald Av.	n/o Eucalyptus Av.	78.30%	12.25%	9.45%	100.00%
31	Archibald Av.	n/o Merrill Av.	78.28%	12.25%	9.47%	100.00%
32	Archibald Av.	n/o Limonite Av.	81.91%	10.77%	7.32%	100.00%
33	Archibald Av.	n/o Schleisman Rd.	81.73%	11.11%	7.16%	100.00%
34	Archibald Av.	s/o Schleisman Rd.	81.80%	11.06%	7.13%	100.00%
35	Edison Av.	w/o Pipeline Av.	82.11%	10.88%	7.01%	100.00%
36	Edison Av.	w/o Ramona Av.	82.23%	10.81%	6.97%	100.00%
37	Edison Av.	w/o Central Av.	82.40%	10.70%	6.90%	100.00%
38	Edison Av.	w/o Mountain Av.	82.35%	10.74%	6.92%	100.00%
39	Edison Av.	w/o San Antonio Av.	82.60%	10.58%	6.82%	100.00%
40	Edison Av.	w/o Euclid Av.	82.84%	10.43%	6.72%	100.00%
41	Edison Av.	e/o Euclid Av.	84.91%	9.17%	5.91%	100.00%
42	Edison Av.	w/o Grove Av.	85.45%	8.85%	5.70%	100.00%
43	Edison Av.	w/o Walker Av.	81.37%	11.33%	7.30%	100.00%
44	Edison Av.	w/o Archibald Av.	85.83%	8.62%	5.55%	100.00%

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
45	Edison Av.	w/o Haven Av.	81.48%	10.69%	7.83%	100.00%
46	Edison Av.	e/o Haven Av.	81.38%	10.76%	7.86%	100.00%
47	Ontario Ranch Rd.	e/o Hamner Av.	81.38%	10.93%	7.70%	100.00%
48	Eucalyptus Av.	w/o Bon View Av.	83.91%	9.78%	6.31%	100.00%
49	Eucalyptus Av.	w/o Walker Av.	93.52%	3.94%	2.54%	100.00%
50	Eucalyptus Av.	e/o Walker Av.	93.79%	3.78%	2.43%	100.00%
51	Eucalyptus Av.	w/o Vineyard Av.	91.58%	5.12%	3.30%	100.00%
52	Eucalyptus Av.	e/o Vineyard Av.	85.70%	8.70%	5.60%	100.00%
53	Merrill Av.	e/o Euclid Av.	74.82%	12.94%	12.24%	100.00%
54	Merrill Av.	w/o Grove Av.	75.68%	12.67%	11.65%	100.00%
55	Merrill Av.	e/o Grove Av.	77.49%	12.02%	10.49%	100.00%
56	Merrill Av.	e/o Walker Av.	77.76%	11.97%	10.27%	100.00%
57	Merrill Av.	w/o Vineyard Av.	77.83%	11.90%	10.27%	100.00%
58	Merrill Av.	e/o Vineyard Av.	77.40%	11.98%	10.62%	100.00%
59	Limonite	e/o Archibald Av.	81.65%	10.85%	7.50%	100.00%
60	Limonite	w/o Sumner Av.	81.63%	10.88%	7.48%	100.00%
61	Limonite	w/o Scholar Wy.	81.53%	10.94%	7.53%	100.00%
62	Limonite	w/o Hamner Av.	81.53%	10.95%	7.53%	100.00%
63	Limonite	e/o Hamner Av.	81.42%	11.02%	7.56%	100.00%

[1] Source: Merrill Commerce Center Specific Plan Traffic Impact Analysis, Urban Crossroads, Inc.
[2] Total of vehicle mix percentage values rounded to the nearest one-hundredth.

TABLE 6-11: HORIZON YEAR 2040 WITH PHASE A+B+C VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Euclid Av.	n/o SR-60	81.43%	11.29%	7.28%	100.00%
2	Euclid Av.	n/o SR-60 EB Ramps	80.11%	11.61%	8.29%	100.00%
3	Euclid Av.	n/o Walnut Av.	80.14%	11.60%	8.26%	100.00%
4	Euclid Av.	n/o Riverside Dr.	80.13%	11.58%	8.29%	100.00%
5	Euclid Av.	n/o Chino Av.	80.29%	11.47%	8.24%	100.00%
6	Euclid Av.	n/o Schaefer Av.	80.36%	11.43%	8.21%	100.00%
7	Euclid Av.	n/o Edison Av.	80.47%	11.39%	8.14%	100.00%
8	Euclid Av.	n/o Eucalyptus Av.	79.82%	11.74%	8.44%	100.00%
9	Euclid Av.	n/o Merrill Av.	79.62%	11.88%	8.50%	100.00%
10	Euclid Av.	n/o Kimball Av.	80.77%	11.36%	7.88%	100.00%
11	Euclid Av.	n/o Bickmore Av.	80.50%	11.42%	8.08%	100.00%
12	Euclid Av.	n/o Pine Av.	80.42%	11.42%	8.15%	100.00%
13	Euclid Av.	s/o Pine Av.	80.77%	11.39%	7.84%	100.00%
14	Grove Av.	n/o SR-60	81.57%	11.21%	7.22%	100.00%
15	Grove Av.	n/o SR-60 EB Ramps	81.77%	11.08%	7.14%	100.00%
16	Grove Av.	n/o Walnut Av.	82.08%	10.90%	7.02%	100.00%
17	Grove Av.	n/o Riverside Dr.	82.37%	10.72%	6.91%	100.00%
18	Grove Av.	n/o Chino Av.	83.28%	10.17%	6.55%	100.00%
19	Grove Av.	n/o Schaefer Av.	83.44%	10.07%	6.49%	100.00%
20	Grove Av.	n/o Edison Av.	83.67%	9.93%	6.40%	100.00%
21	Grove Av.	n/o Eucalyptus Av.	86.08%	8.46%	5.45%	100.00%
22	Grove Av.	n/o Street A	83.01%	10.33%	6.66%	100.00%
23	Grove Av.	n/o Merrill Av.	82.79%	10.46%	6.74%	100.00%
24	Archibald Av.	n/o SR-60	81.44%	11.28%	7.27%	100.00%
25	Archibald Av.	n/o SR-60 EB Ramps	81.44%	11.28%	7.27%	100.00%
26	Archibald Av.	n/o Riverside Dr.	80.40%	11.43%	8.18%	100.00%
27	Archibald Av.	n/o Chino Av.	80.73%	11.27%	8.00%	100.00%
28	Archibald Av.	n/o Schaefer Av.	80.82%	11.22%	7.96%	100.00%
29	Archibald Av.	n/o Edison Av.	80.74%	11.21%	8.06%	100.00%
30	Archibald Av.	n/o Eucalyptus Av.	78.57%	12.17%	9.27%	100.00%
31	Archibald Av.	n/o Merrill Av.	78.55%	12.17%	9.28%	100.00%
32	Archibald Av.	n/o Limonite Av.	81.79%	10.90%	7.31%	100.00%
33	Archibald Av.	n/o Schleisman Rd.	81.73%	11.11%	7.16%	100.00%
34	Archibald Av.	s/o Schleisman Rd.	81.80%	11.07%	7.13%	100.00%
35	Edison Av.	w/o Pipeline Av.	81.98%	10.96%	7.06%	100.00%
36	Edison Av.	w/o Ramona Av.	82.17%	10.84%	6.99%	100.00%
37	Edison Av.	w/o Central Av.	82.31%	10.76%	6.93%	100.00%
38	Edison Av.	w/o Mountain Av.	82.08%	10.90%	7.02%	100.00%
39	Edison Av.	w/o San Antonio Av.	82.25%	10.79%	6.96%	100.00%
40	Edison Av.	w/o Euclid Av.	82.24%	10.80%	6.96%	100.00%
41	Edison Av.	e/o Euclid Av.	82.56%	10.60%	6.83%	100.00%
42	Edison Av.	w/o Grove Av.	82.47%	10.66%	6.87%	100.00%
43	Edison Av.	w/o Walker Av.	81.37%	11.33%	7.30%	100.00%
44	Edison Av.	w/o Archibald Av.	83.06%	10.30%	6.64%	100.00%

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
45	Edison Av.	w/o Haven Av.	81.45%	10.85%	7.70%	100.00%
46	Edison Av.	e/o Haven Av.	81.38%	10.91%	7.71%	100.00%
47	Ontario Ranch Rd.	e/o Hamner Av.	81.31%	11.00%	7.69%	100.00%
48	Eucalyptus Av.	w/o Bon View Av.	83.71%	9.91%	6.38%	100.00%
49	Eucalyptus Av.	w/o Walker Av.	87.67%	7.50%	4.83%	100.00%
50	Eucalyptus Av.	e/o Walker Av.	93.87%	3.73%	2.40%	100.00%
51	Eucalyptus Av.	w/o Vineyard Av.	86.38%	8.28%	5.34%	100.00%
52	Eucalyptus Av.	e/o Vineyard Av.	83.09%	10.28%	6.63%	100.00%
53	Merrill Av.	e/o Euclid Av.	75.31%	12.82%	11.87%	100.00%
54	Merrill Av.	w/o Grove Av.	76.12%	12.57%	11.31%	100.00%
55	Merrill Av.	e/o Grove Av.	77.79%	11.97%	10.25%	100.00%
56	Merrill Av.	e/o Walker Av.	78.04%	11.92%	10.03%	100.00%
57	Merrill Av.	w/o Vineyard Av.	78.10%	11.86%	10.04%	100.00%
58	Merrill Av.	e/o Vineyard Av.	77.70%	11.93%	10.37%	100.00%
59	Limonite	e/o Archibald Av.	81.55%	11.03%	7.43%	100.00%
60	Limonite	w/o Sumner Av.	81.54%	11.05%	7.42%	100.00%
61	Limonite	w/o Scholar Wy.	81.48%	11.05%	7.46%	100.00%
62	Limonite	w/o Hamner Av.	81.50%	11.01%	7.49%	100.00%
63	Limonite	e/o Hamner Av.	81.40%	11.12%	7.47%	100.00%

[1] Source: Merrill Commerce Center Specific Plan Traffic Impact Analysis, Urban Crossroads, Inc.
[2] Total of vehicle mix percentage values rounded to the nearest one-hundredth.

TABLE 6-12: 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

7 OFF-SITE TRAFFIC NOISE IMPACTS

To assess the off-site transportation CNEL noise level impacts associated with development of the proposed Project, noise contours were developed based on *Merrill Commerce Center Specific Plan 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 conditions:

- Existing (2019)
- Existing plus Project (E+P), with analysis broken down for:
  - Phase A: Planning Areas 4 and 5
  - Phase A + Phase B: where Phase B is Planning Areas 1, 2, 3, and 6
  - Phase A + Phase B + Phase C: where Phase C is Planning Areas 1A, 3A, 4A, 5A, and 6A
- Opening Year Cumulative (2022) Without Project
- Opening Year Cumulative (2022) With Project (Phase A)
- Opening Year Cumulative (2025) Without Project
- Opening Year Cumulative (2025) With Project (Phase A + Phase B)
- Opening Year Cumulative (2026) Without Project
- Opening Year Cumulative (2026) With Project (Project Buildout – All 3 Phases)
- Horizon Year (2040) Without Project
- Horizon Year (2040) With Project (Project Buildout – All 3 Phases)

7.1 PROJECT TRAFFIC NOISE CONTOURS

Noise contours were used to assess the Project's incremental traffic-related noise impacts at land uses adjacent to roadways conveying Project traffic. The noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway for the 70, 65, and 60 dBA noise levels. The noise contours do not consider the effect of any existing noise barriers or topography that may attenuate ambient noise levels. In addition, because the noise contours reflect modeling of vehicular noise on area roadways, they appropriately do not reflect noise contributions from the surrounding stationary noise sources within the Project study area. Tables 7-1 and 7-12 present a summary of the exterior traffic noise levels for each traffic condition. Appendix 7.1 includes the traffic noise level contours worksheets for each traffic condition.

TABLE 7-1: EXISTING (2019) 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	Euclid Av.	n/o SR-60	Commercial/Residential	80.7	431	929	2002
2	Euclid Av.	n/o SR-60 EB Ramps	Freeway	81.5	495	1066	2296
3	Euclid Av.	n/o Walnut Av.	Commercial	81.6	499	1074	2315
4	Euclid Av.	n/o Riverside Dr.	Commercial/Residential	81.3	477	1028	2214
5	Euclid Av.	n/o Chino Av.	Commercial/Residential	80.8	439	947	2039
6	Euclid Av.	n/o Schaefer Av.	Residential	81.1	462	995	2145
7	Euclid Av.	n/o Edison Av.	Office	81.4	480	1034	2227
8	Euclid Av.	n/o Eucalyptus Av.	Industrial	81.0	453	976	2103
9	Euclid Av.	n/o Merrill Av.	Commercial/Office	82.8	600	1293	2785
10	Euclid Av.	n/o Kimball Av.	Open Space/Public	83.0	621	1337	2881
11	Euclid Av.	n/o Bickmore Av.	Commercial/Industrial	81.1	463	998	2149
12	Euclid Av.	n/o Pine Av.	Commercial/Industrial	81.0	455	981	2113
13	Euclid Av.	s/o Pine Av.	Open Space	83.6	680	1466	3158
14	Grove Av.	n/o SR-60	Commercial	79.6	261	563	1213
15	Grove Av.	n/o SR-60 EB Ramps	Freeway	78.7	229	494	1064
16	Grove Av.	n/o Walnut Av.	Commercial/Residential	77.8	198	427	920
17	Grove Av.	n/o Riverside Dr.	Residential	76.2	156	337	726
18	Grove Av.	n/o Chino Av.	Residential	76.3	131	281	606
19	Grove Av.	n/o Schaefer Av.	Residential	75.8	122	264	568
20	Grove Av.	n/o Edison Av.	Commercial/Residential	75.3	113	243	524
21	Grove Av.	n/o Eucalyptus Av.	Commercial/Residential	75.2	112	241	519
22	Grove Av.	n/o Street A	Commercial/Residential	73.7	89	191	411
23	Grove Av.	n/o Merrill Av.	Business Park	73.7	89	191	411
24	Archibald Av.	n/o SR-60	Commercial	79.5	259	557	1200
25	Archibald Av.	n/o SR-60 EB Ramps	Freeway	79.6	264	568	1224
26	Archibald Av.	n/o Riverside Dr.	Commercial/Residential	79.6	262	565	1216
27	Archibald Av.	n/o Chino Av.	Commercial/Residential	79.2	245	527	1135
28	Archibald Av.	n/o Schaefer Av.	Residential	79.1	242	520	1121
29	Archibald Av.	n/o Edison Av.	Residential	79.1	242	520	1121
30	Archibald Av.	n/o Eucalyptus Av.	Commercial/Residential	80.0	278	600	1292
31	Archibald Av.	n/o Merrill Av.	Commercial/Residential	80.0	277	597	1285
32	Archibald Av.	n/o Limonite Av.	Business Park/Residential	80.1	284	612	1318
33	Archibald Av.	n/o Schleisman Rd.	Residential	74.5	221	475	1024
34	Archibald Av.	s/o Schleisman Rd.	Residential	73.9	201	434	935
35	Edison Av.	w/o Pipeline Av.	Commercial	79.3	248	535	1153
36	Edison Av.	w/o Ramona Av.	Commercial/Industrial	78.6	223	481	1036
37	Edison Av.	w/o Central Av.	Industrial	77.7	195	419	904
38	Edison Av.	w/o Mountain Av.	Industrial/Open Space	78.3	215	463	998
39	Edison Av.	w/o San Antonio Av.	Residential/Open Space	77.6	192	414	892
40	Edison Av.	w/o Euclid Av.	Commercial/Business Park	76.6	166	358	772
41	Edison Av.	e/o Euclid Av.	Mixed-Use/Residential	77.7	272	586	1263
42	Edison Av.	w/o Grove Av.	Commercial/Residential	76.9	241	519	1118
43	Edison Av.	w/o Walker Av.	Commercial/Residential	78.1	292	628	1354

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
44	Edison Av.	w/o Archibald Av.	Residential	78.2	298	641	1382
45	Edison Av.	w/o Haven Av.	School/Residential	80.0	392	845	1821
46	Edison Av.	e/o Haven Av.	Mixed-Use/Residential	80.2	402	865	1864
47	Ontario Ranch Rd.	e/o Hamner Av.	Commercial	77.7	247	531	1144
48	Eucalyptus Av.	w/o Bon View Av.	Residential	69.6	RW	90	193
49	Eucalyptus Av.	w/o Walker Av.	Business Park/Residential	66.2	RW	53	114
50	Eucalyptus Av.	e/o Walker Av.	Business Park/Residential	66.5	RW	56	120
51	Eucalyptus Av.	w/o Vineyard Av.	Mixed-Use	66.5	RW	56	120
52	Eucalyptus Av.	e/o Vineyard Av.	Mixed-Use	66.5	RW	56	120
53	Merrill Av.	e/o Euclid Av.	Commercial	75.9	110	236	509
54	Merrill Av.	w/o Grove Av.	Business Park	76.7	123	265	570
55	Merrill Av.	e/o Grove Av.	Business Park	76.6	121	260	560
56	Merrill Av.	e/o Walker Av.	Business Park	77.0	129	278	600
57	Merrill Av.	w/o Vineyard Av.	Business Park	77.1	130	280	604
58	Merrill Av.	e/o Vineyard Av.	Business Park	77.2	133	287	618
59	Limonite	e/o Archibald Av.	Business Park	74.4	149	321	692
60	Limonite	w/o Sumner Av.	Residential	74.8	158	340	733
61	Limonite	w/o Scholar Wy.	Residential	74.7	156	336	723
62	Limonite	w/o Hamner Av.	Commercial/Residential	74.8	159	342	737
63	Limonite	e/o Hamner Av.	Commercial	75.1	167	359	773

[1] Sources: Land Use Maps of the City of Chino, Ontario, and Eastvale, and aerial imagery.

[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 represent a paved and/or fully constructed roadway under the given scenario.

TABLE 7-2: EXISTING (2019) WITH PHASE A 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	Euclid Av.	n/o SR-60	Commercial/Residential	80.7	431	929	2002
2	Euclid Av.	n/o SR-60 EB Ramps	Freeway	81.7	510	1098	2365
3	Euclid Av.	n/o Walnut Av.	Commercial	81.8	514	1107	2384
4	Euclid Av.	n/o Riverside Dr.	Commercial/Residential	81.5	492	1061	2285
5	Euclid Av.	n/o Chino Av.	Commercial/Residential	81.0	455	981	2114
6	Euclid Av.	n/o Schaefer Av.	Residential	81.3	478	1029	2218
7	Euclid Av.	n/o Edison Av.	Office	81.6	495	1067	2299
8	Euclid Av.	n/o Eucalyptus Av.	Industrial	81.2	468	1009	2174
9	Euclid Av.	n/o Merrill Av.	Commercial/Office	83.0	618	1332	2870
10	Euclid Av.	n/o Kimball Av.	Open Space/Public	83.2	633	1365	2940
11	Euclid Av.	n/o Bickmore Av.	Commercial/Industrial	81.3	478	1029	2218
12	Euclid Av.	n/o Pine Av.	Commercial/Industrial	81.2	470	1013	2182
13	Euclid Av.	s/o Pine Av.	Open Space	83.7	693	1492	3215
14	Grove Av.	n/o SR-60	Commercial	79.6	261	563	1213
15	Grove Av.	n/o SR-60 EB Ramps	Freeway	78.7	230	494	1065
16	Grove Av.	n/o Walnut Av.	Commercial/Residential	77.8	198	428	921
17	Grove Av.	n/o Riverside Dr.	Residential	76.3	157	338	728
18	Grove Av.	n/o Chino Av.	Residential	76.3	131	283	609
19	Grove Av.	n/o Schaefer Av.	Residential	75.9	123	265	571
20	Grove Av.	n/o Edison Av.	Commercial/Residential	75.3	113	245	527
21	Grove Av.	n/o Eucalyptus Av.	Commercial/Residential	75.4	114	245	529
22	Grove Av.	n/o Street A	Commercial/Residential	73.9	92	197	425
23	Grove Av.	n/o Merrill Av.	Business Park	73.9	92	197	425
24	Archibald Av.	n/o SR-60	Commercial	79.5	259	557	1200
25	Archibald Av.	n/o SR-60 EB Ramps	Freeway	79.6	264	568	1225
26	Archibald Av.	n/o Riverside Dr.	Commercial/Residential	79.8	269	579	1247
27	Archibald Av.	n/o Chino Av.	Commercial/Residential	79.3	252	542	1167
28	Archibald Av.	n/o Schaefer Av.	Residential	79.3	250	538	1160
29	Archibald Av.	n/o Edison Av.	Residential	79.3	250	538	1160
30	Archibald Av.	n/o Eucalyptus Av.	Commercial/Residential	80.3	292	630	1357
31	Archibald Av.	n/o Merrill Av.	Commercial/Residential	80.3	291	627	1351
32	Archibald Av.	n/o Limonite Av.	Business Park/Residential	80.2	288	621	1339
33	Archibald Av.	n/o Schleisman Rd.	Residential	74.5	221	475	1024
34	Archibald Av.	s/o Schleisman Rd.	Residential	73.9	202	434	935
35	Edison Av.	w/o Pipeline Av.	Commercial	79.3	249	536	1155
36	Edison Av.	w/o Ramona Av.	Commercial/Industrial	78.6	224	482	1038
37	Edison Av.	w/o Central Av.	Industrial	77.7	195	420	905
38	Edison Av.	w/o Mountain Av.	Industrial/Open Space	78.3	215	464	1000
39	Edison Av.	w/o San Antonio Av.	Residential/Open Space	77.6	193	415	894
40	Edison Av.	w/o Euclid Av.	Commercial/Business Park	76.7	167	359	774
41	Edison Av.	e/o Euclid Av.	Mixed-Use/Residential	77.7	274	591	1274
42	Edison Av.	w/o Grove Av.	Commercial/Residential	76.9	243	524	1130
43	Edison Av.	w/o Walker Av.	Commercial/Residential	78.1	292	628	1354

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
44	Edison Av.	w/o Archibald Av.	Residential	78.3	301	649	1398
45	Edison Av.	w/o Haven Av.	School/Residential	80.3	407	877	1890
46	Edison Av.	e/o Haven Av.	Mixed-Use/Residential	80.4	416	896	1931
47	Ontario Ranch Rd.	e/o Hamner Av.	Commercial	77.8	252	544	1172
48	Eucalyptus Av.	w/o Bon View Av.	Residential	69.7	RW	90	195
49	Eucalyptus Av.	w/o Walker Av.	Business Park/Residential	66.2	RW	53	114
50	Eucalyptus Av.	e/o Walker Av.	Business Park/Residential	66.5	RW	56	120
51	Eucalyptus Av.	w/o Vineyard Av.	Mixed-Use	66.5	RW	56	120
52	Eucalyptus Av.	e/o Vineyard Av.	Mixed-Use	66.5	RW	56	120
53	Merrill Av.	e/o Euclid Av.	Commercial	76.9	127	274	591
54	Merrill Av.	w/o Grove Av.	Business Park	77.5	140	301	648
55	Merrill Av.	e/o Grove Av.	Business Park	77.6	141	303	653
56	Merrill Av.	e/o Walker Av.	Business Park	77.7	143	307	662
57	Merrill Av.	w/o Vineyard Av.	Business Park	77.9	148	318	685
58	Merrill Av.	e/o Vineyard Av.	Business Park	78.0	150	323	695
59	Limonite	e/o Archibald Av.	Business Park	74.5	152	328	708
60	Limonite	w/o Sumner Av.	Residential	74.9	161	347	748
61	Limonite	w/o Scholar Wy.	Residential	74.8	159	342	738
62	Limonite	w/o Hamner Av.	Commercial/Residential	74.9	162	349	752
63	Limonite	e/o Hamner Av.	Commercial	75.2	170	365	787

[1] Sources: Land Use Maps of the City of Chino, Ontario, and Eastvale, and aerial imagery.

[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 represent a paved and/or fully constructed roadway under the given scenario.

TABLE 7-3: EXISTING (2019) WITH PHASE A+B 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	Euclid Av.	n/o SR-60	Commercial/Residential	80.7	431	929	2002
2	Euclid Av.	n/o SR-60 EB Ramps	Freeway	82.1	540	1164	2507
3	Euclid Av.	n/o Walnut Av.	Commercial	82.2	544	1173	2526
4	Euclid Av.	n/o Riverside Dr.	Commercial/Residential	81.9	524	1129	2431
5	Euclid Av.	n/o Chino Av.	Commercial/Residential	81.5	489	1053	2268
6	Euclid Av.	n/o Schaefer Av.	Residential	81.8	510	1099	2369
7	Euclid Av.	n/o Edison Av.	Office	82.0	527	1136	2448
8	Euclid Av.	n/o Eucalyptus Av.	Industrial	81.6	500	1077	2321
9	Euclid Av.	n/o Merrill Av.	Commercial/Office	83.4	656	1413	3045
10	Euclid Av.	n/o Kimball Av.	Open Space/Public	83.4	660	1423	3065
11	Euclid Av.	n/o Bickmore Av.	Commercial/Industrial	81.7	508	1095	2360
12	Euclid Av.	n/o Pine Av.	Commercial/Industrial	81.6	501	1079	2325
13	Euclid Av.	s/o Pine Av.	Open Space	84.0	718	1547	3334
14	Grove Av.	n/o SR-60	Commercial	79.6	262	564	1214
15	Grove Av.	n/o SR-60 EB Ramps	Freeway	78.8	230	496	1068
16	Grove Av.	n/o Walnut Av.	Commercial/Residential	77.8	199	429	925
17	Grove Av.	n/o Riverside Dr.	Residential	76.3	158	339	731
18	Grove Av.	n/o Chino Av.	Residential	76.4	133	286	615
19	Grove Av.	n/o Schaefer Av.	Residential	75.9	124	268	578
20	Grove Av.	n/o Edison Av.	Commercial/Residential	75.4	115	248	534
21	Grove Av.	n/o Eucalyptus Av.	Commercial/Residential	75.6	118	255	550
22	Grove Av.	n/o Street A	Commercial/Residential	74.4	98	212	456
23	Grove Av.	n/o Merrill Av.	Business Park	74.4	98	212	456
24	Archibald Av.	n/o SR-60	Commercial	79.5	259	557	1201
25	Archibald Av.	n/o SR-60 EB Ramps	Freeway	79.7	264	569	1225
26	Archibald Av.	n/o Riverside Dr.	Commercial/Residential	80.1	282	608	1310
27	Archibald Av.	n/o Chino Av.	Commercial/Residential	79.7	266	573	1234
28	Archibald Av.	n/o Schaefer Av.	Residential	79.7	267	575	1239
29	Archibald Av.	n/o Edison Av.	Residential	79.7	267	575	1239
30	Archibald Av.	n/o Eucalyptus Av.	Commercial/Residential	80.9	321	692	1491
31	Archibald Av.	n/o Merrill Av.	Commercial/Residential	80.9	320	689	1485
32	Archibald Av.	n/o Limonite Av.	Business Park/Residential	80.4	298	641	1382
33	Archibald Av.	n/o Schleisman Rd.	Residential	74.5	221	476	1026
34	Archibald Av.	s/o Schleisman Rd.	Residential	74.0	202	435	937
35	Edison Av.	w/o Pipeline Av.	Commercial	79.3	250	538	1158
36	Edison Av.	w/o Ramona Av.	Commercial/Industrial	78.6	224	483	1041
37	Edison Av.	w/o Central Av.	Industrial	77.7	196	422	909
38	Edison Av.	w/o Mountain Av.	Industrial/Open Space	78.4	216	466	1004
39	Edison Av.	w/o San Antonio Av.	Residential/Open Space	77.6	194	417	899
40	Edison Av.	w/o Euclid Av.	Commercial/Business Park	76.7	168	362	779
41	Edison Av.	e/o Euclid Av.	Mixed-Use/Residential	77.8	280	603	1299
42	Edison Av.	w/o Grove Av.	Commercial/Residential	77.1	249	537	1156
43	Edison Av.	w/o Walker Av.	Commercial/Residential	78.1	292	628	1354

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
44	Edison Av.	w/o Archibald Av.	Residential	78.5	309	665	1433
45	Edison Av.	w/o Haven Av.	School/Residential	80.8	438	943	2031
46	Edison Av.	e/o Haven Av.	Mixed-Use/Residential	80.9	446	961	2071
47	Ontario Ranch Rd.	e/o Hamner Av.	Commercial	78.1	265	570	1229
48	Eucalyptus Av.	w/o Bon View Av.	Residential	69.8	RW	91	197
49	Eucalyptus Av.	w/o Walker Av.	Business Park/Residential	66.2	RW	53	114
50	Eucalyptus Av.	e/o Walker Av.	Business Park/Residential	66.5	RW	56	120
51	Eucalyptus Av.	w/o Vineyard Av.	Mixed-Use	66.5	RW	56	120
52	Eucalyptus Av.	e/o Vineyard Av.	Mixed-Use	66.5	RW	56	120
53	Merrill Av.	e/o Euclid Av.	Commercial	78.4	161	347	747
54	Merrill Av.	w/o Grove Av.	Business Park	78.9	172	371	799
55	Merrill Av.	e/o Grove Av.	Business Park	78.8	170	366	789
56	Merrill Av.	e/o Walker Av.	Business Park	78.9	174	374	805
57	Merrill Av.	w/o Vineyard Av.	Business Park	78.9	173	372	801
58	Merrill Av.	e/o Vineyard Av.	Business Park	79.3	182	393	847
59	Limonite	e/o Archibald Av.	Business Park	74.8	159	343	739
60	Limonite	w/o Sumner Av.	Residential	75.2	168	361	778
61	Limonite	w/o Scholar Wy.	Residential	75.1	165	357	768
62	Limonite	w/o Hamner Av.	Commercial/Residential	75.2	168	363	782
63	Limonite	e/o Hamner Av.	Commercial	75.5	176	379	816

[1] Sources: Land Use Maps of the City of Chino, Ontario, and Eastvale, and aerial imagery.

[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 represent a paved and/or fully constructed roadway under the given scenario.

TABLE 7-4: EXISTING (2019) WITH PHASE A+B+C 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	Euclid Av.	n/o SR-60	Commercial/Residential	80.7	431	929	2003
2	Euclid Av.	n/o SR-60 EB Ramps	Freeway	82.3	552	1190	2564
3	Euclid Av.	n/o Walnut Av.	Commercial	82.3	557	1199	2583
4	Euclid Av.	n/o Riverside Dr.	Commercial/Residential	82.1	536	1156	2490
5	Euclid Av.	n/o Chino Av.	Commercial/Residential	81.6	502	1081	2329
6	Euclid Av.	n/o Schaefer Av.	Residential	81.9	523	1127	2429
7	Euclid Av.	n/o Edison Av.	Office	82.1	540	1164	2507
8	Euclid Av.	n/o Eucalyptus Av.	Industrial	81.8	513	1104	2379
9	Euclid Av.	n/o Merrill Av.	Commercial/Office	83.5	671	1445	3112
10	Euclid Av.	n/o Kimball Av.	Open Space/Public	83.5	671	1446	3115
11	Euclid Av.	n/o Bickmore Av.	Commercial/Industrial	81.9	520	1121	2415
12	Euclid Av.	n/o Pine Av.	Commercial/Industrial	81.8	513	1105	2381
13	Euclid Av.	s/o Pine Av.	Open Space	84.1	728	1569	3381
14	Grove Av.	n/o SR-60	Commercial	79.6	262	564	1215
15	Grove Av.	n/o SR-60 EB Ramps	Freeway	78.8	230	496	1069
16	Grove Av.	n/o Walnut Av.	Commercial/Residential	77.8	200	430	926
17	Grove Av.	n/o Riverside Dr.	Residential	76.3	158	340	733
18	Grove Av.	n/o Chino Av.	Residential	76.4	133	287	619
19	Grove Av.	n/o Schaefer Av.	Residential	76.0	125	270	581
20	Grove Av.	n/o Edison Av.	Commercial/Residential	75.5	116	249	537
21	Grove Av.	n/o Eucalyptus Av.	Commercial/Residential	75.7	121	260	560
22	Grove Av.	n/o Street A	Commercial/Residential	73.9	91	196	422
23	Grove Av.	n/o Merrill Av.	Business Park	73.9	91	195	420
24	Archibald Av.	n/o SR-60	Commercial	79.5	259	557	1201
25	Archibald Av.	n/o SR-60 EB Ramps	Freeway	79.7	264	569	1225
26	Archibald Av.	n/o Riverside Dr.	Commercial/Residential	80.2	288	620	1335
27	Archibald Av.	n/o Chino Av.	Commercial/Residential	79.8	272	585	1261
28	Archibald Av.	n/o Schaefer Av.	Residential	79.9	274	590	1271
29	Archibald Av.	n/o Edison Av.	Residential	79.9	274	590	1271
30	Archibald Av.	n/o Eucalyptus Av.	Commercial/Residential	81.1	332	716	1542
31	Archibald Av.	n/o Merrill Av.	Commercial/Residential	81.1	331	713	1536
32	Archibald Av.	n/o Limonite Av.	Business Park/Residential	80.5	302	650	1400
33	Archibald Av.	n/o Schleisman Rd.	Residential	74.6	221	477	1027
34	Archibald Av.	s/o Schleisman Rd.	Residential	74.0	202	436	938
35	Edison Av.	w/o Pipeline Av.	Commercial	79.3	250	538	1160
36	Edison Av.	w/o Ramona Av.	Commercial/Industrial	78.6	225	484	1043
37	Edison Av.	w/o Central Av.	Industrial	77.7	196	423	911
38	Edison Av.	w/o Mountain Av.	Industrial/Open Space	78.4	217	467	1006
39	Edison Av.	w/o San Antonio Av.	Residential/Open Space	77.6	194	418	901
40	Edison Av.	w/o Euclid Av.	Commercial/Business Park	76.7	168	363	782
41	Edison Av.	e/o Euclid Av.	Mixed-Use/Residential	77.9	283	609	1311
42	Edison Av.	w/o Grove Av.	Commercial/Residential	77.2	252	543	1169
43	Edison Av.	w/o Walker Av.	Commercial/Residential	78.1	292	628	1354

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
44	Edison Av.	w/o Archibald Av.	Residential	78.6	312	673	1450
45	Edison Av.	w/o Haven Av.	School/Residential	80.9	450	969	2088
46	Edison Av.	e/o Haven Av.	Mixed-Use/Residential	81.1	458	987	2127
47	Ontario Ranch Rd.	e/o Hamner Av.	Commercial	78.3	270	581	1252
48	Eucalyptus Av.	w/o Bon View Av.	Residential	69.8	RW	92	198
49	Eucalyptus Av.	w/o Walker Av.	Business Park/Residential	67.8	RW	68	147
50	Eucalyptus Av.	e/o Walker Av.	Business Park/Residential	68.3	RW	73	156
51	Eucalyptus Av.	w/o Vineyard Av.	Mixed-Use	67.7	RW	66	143
52	Eucalyptus Av.	e/o Vineyard Av.	Mixed-Use	66.9	RW	58	126
53	Merrill Av.	e/o Euclid Av.	Commercial	78.9	174	374	805
54	Merrill Av.	w/o Grove Av.	Business Park	79.3	184	397	855
55	Merrill Av.	e/o Grove Av.	Business Park	78.9	172	370	798
56	Merrill Av.	e/o Walker Av.	Business Park	79.1	179	386	831
57	Merrill Av.	w/o Vineyard Av.	Business Park	79.2	180	388	835
58	Merrill Av.	e/o Vineyard Av.	Business Park	79.7	194	418	900
59	Limonite	e/o Archibald Av.	Business Park	74.9	162	349	752
60	Limonite	w/o Sumner Av.	Residential	75.3	170	367	791
61	Limonite	w/o Scholar Wy.	Residential	75.2	168	362	781
62	Limonite	w/o Hamner Av.	Commercial/Residential	75.3	171	369	794
63	Limonite	e/o Hamner Av.	Commercial	75.6	178	385	828

[1] Sources: Land Use Maps of the City of Chino, Ontario, and Eastvale, and aerial imagery.

[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 represent a paved and/or fully constructed roadway under the given scenario.

TABLE 7-5: OPENING YEAR 2025 WITHOUT PROJECT 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	Euclid Av.	n/o SR-60	Commercial/Residential	80.9	450	969	2088
2	Euclid Av.	n/o SR-60 EB Ramps	Freeway	82.0	526	1133	2442
3	Euclid Av.	n/o Walnut Av.	Commercial	82.1	540	1164	2508
4	Euclid Av.	n/o Riverside Dr.	Commercial/Residential	81.9	519	1118	2408
5	Euclid Av.	n/o Chino Av.	Commercial/Residential	81.4	482	1039	2239
6	Euclid Av.	n/o Schaefer Av.	Residential	81.7	506	1091	2349
7	Euclid Av.	n/o Edison Av.	Office	81.9	525	1131	2437
8	Euclid Av.	n/o Eucalyptus Av.	Industrial	81.6	501	1079	2324
9	Euclid Av.	n/o Merrill Av.	Commercial/Office	83.4	656	1412	3043
10	Euclid Av.	n/o Kimball Av.	Open Space/Public	83.6	674	1452	3128
11	Euclid Av.	n/o Bickmore Av.	Commercial/Industrial	81.8	517	1114	2399
12	Euclid Av.	n/o Pine Av.	Commercial/Industrial	81.7	506	1089	2347
13	Euclid Av.	s/o Pine Av.	Open Space	84.1	733	1579	3402
14	Grove Av.	n/o SR-60	Commercial	79.9	272	587	1264
15	Grove Av.	n/o SR-60 EB Ramps	Freeway	79.0	239	516	1111
16	Grove Av.	n/o Walnut Av.	Commercial/Residential	78.1	207	447	962
17	Grove Av.	n/o Riverside Dr.	Residential	76.6	164	354	762
18	Grove Av.	n/o Chino Av.	Residential	76.6	138	298	642
19	Grove Av.	n/o Schaefer Av.	Residential	76.2	130	280	603
20	Grove Av.	n/o Edison Av.	Commercial/Residential	75.7	120	258	557
21	Grove Av.	n/o Eucalyptus Av.	Commercial/Residential	76.0	125	270	582
22	Grove Av.	n/o Street A	Commercial/Residential	74.2	95	206	443
23	Grove Av.	n/o Merrill Av.	Business Park	74.2	95	206	443
24	Archibald Av.	n/o SR-60	Commercial	79.8	270	582	1253
25	Archibald Av.	n/o SR-60 EB Ramps	Freeway	81.0	325	701	1511
26	Archibald Av.	n/o Riverside Dr.	Commercial/Residential	79.2	246	530	1143
27	Archibald Av.	n/o Chino Av.	Commercial/Residential	79.6	262	565	1218
28	Archibald Av.	n/o Schaefer Av.	Residential	79.6	261	563	1213
29	Archibald Av.	n/o Edison Av.	Residential	79.6	261	563	1213
30	Archibald Av.	n/o Eucalyptus Av.	Commercial/Residential	80.6	304	656	1413
31	Archibald Av.	n/o Merrill Av.	Commercial/Residential	80.5	303	653	1406
32	Archibald Av.	n/o Limonite Av.	Business Park/Residential	80.6	306	660	1423
33	Archibald Av.	n/o Schleisman Rd.	Residential	75.0	237	510	1099
34	Archibald Av.	s/o Schleisman Rd.	Residential	74.3	213	458	988
35	Edison Av.	w/o Pipeline Av.	Commercial	79.6	260	560	1207
36	Edison Av.	w/o Ramona Av.	Commercial/Industrial	78.9	234	504	1086
37	Edison Av.	w/o Central Av.	Industrial	78.0	205	442	952
38	Edison Av.	w/o Mountain Av.	Industrial/Open Space	78.7	227	488	1052
39	Edison Av.	w/o San Antonio Av.	Residential/Open Space	78.0	203	438	944
40	Edison Av.	w/o Euclid Av.	Commercial/Business Park	77.1	177	382	823
41	Edison Av.	e/o Euclid Av.	Mixed-Use/Residential	78.1	291	627	1350
42	Edison Av.	w/o Grove Av.	Commercial/Residential	77.3	258	556	1198
43	Edison Av.	w/o Walker Av.	Commercial/Residential	78.5	307	662	1427

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
44	Edison Av.	w/o Archibald Av.	Residential	78.6	314	676	1457
45	Edison Av.	w/o Haven Av.	School/Residential	80.5	421	908	1956
46	Edison Av.	e/o Haven Av.	Mixed-Use/Residential	80.6	430	927	1997
47	Ontario Ranch Rd.	e/o Hamner Av.	Commercial	78.0	261	563	1213
48	Eucalyptus Av.	w/o Bon View Av.	Residential	70.4	47	100	216
49	Eucalyptus Av.	w/o Walker Av.	Business Park/Residential	67.1	RW	61	131
50	Eucalyptus Av.	e/o Walker Av.	Business Park/Residential	67.4	RW	64	137
51	Eucalyptus Av.	w/o Vineyard Av.	Mixed-Use	67.4	RW	64	137
52	Eucalyptus Av.	e/o Vineyard Av.	Mixed-Use	67.4	RW	64	137
53	Merrill Av.	e/o Euclid Av.	Commercial	76.7	123	265	570
54	Merrill Av.	w/o Grove Av.	Business Park	77.3	135	292	628
55	Merrill Av.	e/o Grove Av.	Business Park	77.3	135	292	629
56	Merrill Av.	e/o Walker Av.	Business Park	77.7	144	311	669
57	Merrill Av.	w/o Vineyard Av.	Business Park	77.7	143	307	662
58	Merrill Av.	e/o Vineyard Av.	Business Park	78.0	150	322	694
59	Limonite	e/o Archibald Av.	Business Park	75.1	166	358	772
60	Limonite	w/o Sumner Av.	Residential	75.4	175	377	812
61	Limonite	w/o Scholar Wy.	Residential	75.3	173	372	801
62	Limonite	w/o Hamner Av.	Commercial/Residential	75.5	176	378	815
63	Limonite	e/o Hamner Av.	Commercial	75.7	182	393	846

[1] Sources: Land Use Maps of the City of Chino, Ontario, and Eastvale, and aerial imagery.

[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 represent a paved and/or fully constructed roadway under the given scenario.

TABLE 7-6: OPENING YEAR 2022 WITH PHASE A 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	Euclid Av.	n/o SR-60	Commercial/Residential	80.9	450	969	2088
2	Euclid Av.	n/o SR-60 EB Ramps	Freeway	82.1	541	1165	2509
3	Euclid Av.	n/o Walnut Av.	Commercial	82.3	555	1195	2574
4	Euclid Av.	n/o Riverside Dr.	Commercial/Residential	82.0	533	1149	2476
5	Euclid Av.	n/o Chino Av.	Commercial/Residential	81.6	498	1072	2311
6	Euclid Av.	n/o Schaefer Av.	Residential	81.9	521	1123	2419
7	Euclid Av.	n/o Edison Av.	Office	82.1	540	1163	2506
8	Euclid Av.	n/o Eucalyptus Av.	Industrial	81.8	515	1110	2392
9	Euclid Av.	n/o Merrill Av.	Commercial/Office	83.6	673	1450	3124
10	Euclid Av.	n/o Kimball Av.	Open Space/Public	83.7	686	1479	3186
11	Euclid Av.	n/o Bickmore Av.	Commercial/Industrial	82.0	531	1144	2464
12	Euclid Av.	n/o Pine Av.	Commercial/Industrial	81.9	520	1120	2412
13	Euclid Av.	s/o Pine Av.	Open Space	84.2	745	1605	3457
14	Grove Av.	n/o SR-60	Commercial	79.9	273	587	1265
15	Grove Av.	n/o SR-60 EB Ramps	Freeway	79.0	240	516	1112
16	Grove Av.	n/o Walnut Av.	Commercial/Residential	78.1	208	447	963
17	Grove Av.	n/o Riverside Dr.	Residential	76.6	165	355	764
18	Grove Av.	n/o Chino Av.	Residential	76.7	139	299	645
19	Grove Av.	n/o Schaefer Av.	Residential	76.2	130	281	606
20	Grove Av.	n/o Edison Av.	Commercial/Residential	75.7	121	260	560
21	Grove Av.	n/o Eucalyptus Av.	Commercial/Residential	76.1	127	274	591
22	Grove Av.	n/o Street A	Commercial/Residential	74.4	98	212	457
23	Grove Av.	n/o Merrill Av.	Business Park	74.4	98	212	457
24	Archibald Av.	n/o SR-60	Commercial	79.8	270	582	1253
25	Archibald Av.	n/o SR-60 EB Ramps	Freeway	81.0	326	701	1511
26	Archibald Av.	n/o Riverside Dr.	Commercial/Residential	79.4	253	545	1174
27	Archibald Av.	n/o Chino Av.	Commercial/Residential	79.8	269	580	1249
28	Archibald Av.	n/o Schaefer Av.	Residential	79.8	269	580	1250
29	Archibald Av.	n/o Edison Av.	Residential	79.8	269	580	1250
30	Archibald Av.	n/o Eucalyptus Av.	Commercial/Residential	80.9	318	685	1476
31	Archibald Av.	n/o Merrill Av.	Commercial/Residential	80.8	317	682	1469
32	Archibald Av.	n/o Limonite Av.	Business Park/Residential	80.7	311	670	1442
33	Archibald Av.	n/o Schleisman Rd.	Residential	75.0	237	511	1100
34	Archibald Av.	s/o Schleisman Rd.	Residential	74.3	213	459	988
35	Edison Av.	w/o Pipeline Av.	Commercial	79.6	260	561	1208
36	Edison Av.	w/o Ramona Av.	Commercial/Industrial	78.9	234	505	1088
37	Edison Av.	w/o Central Av.	Industrial	78.0	205	443	954
38	Edison Av.	w/o Mountain Av.	Industrial/Open Space	78.7	227	489	1053
39	Edison Av.	w/o San Antonio Av.	Residential/Open Space	78.0	204	439	946
40	Edison Av.	w/o Euclid Av.	Commercial/Business Park	77.1	178	383	825
41	Edison Av.	e/o Euclid Av.	Mixed-Use/Residential	78.1	293	632	1361
42	Edison Av.	w/o Grove Av.	Commercial/Residential	77.4	261	562	1210
43	Edison Av.	w/o Walker Av.	Commercial/Residential	78.5	307	662	1427

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
44	Edison Av.	w/o Archibald Av.	Residential	78.7	317	683	1472
45	Edison Av.	w/o Haven Av.	School/Residential	80.7	436	939	2022
46	Edison Av.	e/o Haven Av.	Mixed-Use/Residential	80.9	444	957	2062
47	Ontario Ranch Rd.	e/o Hamner Av.	Commercial	78.2	267	576	1240
48	Eucalyptus Av.	w/o Bon View Av.	Residential	70.4	47	101	217
49	Eucalyptus Av.	w/o Walker Av.	Business Park/Residential	67.1	RW	61	131
50	Eucalyptus Av.	e/o Walker Av.	Business Park/Residential	67.4	RW	64	137
51	Eucalyptus Av.	w/o Vineyard Av.	Mixed-Use	67.4	RW	64	137
52	Eucalyptus Av.	e/o Vineyard Av.	Mixed-Use	67.4	RW	64	137
53	Merrill Av.	e/o Euclid Av.	Commercial	77.5	140	301	648
54	Merrill Av.	w/o Grove Av.	Business Park	78.1	151	326	703
55	Merrill Av.	e/o Grove Av.	Business Park	78.2	154	333	717
56	Merrill Av.	e/o Walker Av.	Business Park	78.3	157	338	728
57	Merrill Av.	w/o Vineyard Av.	Business Park	78.4	159	344	740
58	Merrill Av.	e/o Vineyard Av.	Business Park	78.6	165	356	767
59	Limonite	e/o Archibald Av.	Business Park	75.2	169	365	786
60	Limonite	w/o Sumner Av.	Residential	75.5	178	383	826
61	Limonite	w/o Scholar Wy.	Residential	75.5	176	378	815
62	Limonite	w/o Hamner Av.	Commercial/Residential	75.6	179	385	829
63	Limonite	e/o Hamner Av.	Commercial	75.8	185	399	859

[1] Sources: Land Use Maps of the City of Chino, Ontario, and Eastvale, and aerial imagery.

[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 represent a paved and/or fully constructed roadway under the given scenario.

TABLE 7-7: OPENING YEAR 2025 WITHOUT PROJECT 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	Euclid Av.	n/o SR-60	Commercial/Residential	81.2	469	1010	2176
2	Euclid Av.	n/o SR-60 EB Ramps	Freeway	82.3	555	1196	2576
3	Euclid Av.	n/o Walnut Av.	Commercial	82.5	576	1242	2676
4	Euclid Av.	n/o Riverside Dr.	Commercial/Residential	82.3	554	1195	2574
5	Euclid Av.	n/o Chino Av.	Commercial/Residential	81.9	519	1117	2407
6	Euclid Av.	n/o Schaefer Av.	Residential	82.2	543	1171	2523
7	Euclid Av.	n/o Edison Av.	Office	82.4	563	1214	2615
8	Euclid Av.	n/o Eucalyptus Av.	Industrial	82.1	540	1164	2507
9	Euclid Av.	n/o Merrill Av.	Commercial/Office	83.8	703	1514	3261
10	Euclid Av.	n/o Kimball Av.	Open Space/Public	84.0	720	1551	3342
11	Euclid Av.	n/o Bickmore Av.	Commercial/Industrial	82.4	561	1208	2603
12	Euclid Av.	n/o Pine Av.	Commercial/Industrial	82.2	547	1179	2539
13	Euclid Av.	s/o Pine Av.	Open Space	84.5	779	1679	3617
14	Grove Av.	n/o SR-60	Commercial	80.1	284	611	1317
15	Grove Av.	n/o SR-60 EB Ramps	Freeway	79.3	250	538	1158
16	Grove Av.	n/o Walnut Av.	Commercial/Residential	78.4	216	466	1004
17	Grove Av.	n/o Riverside Dr.	Residential	76.9	172	370	798
18	Grove Av.	n/o Chino Av.	Residential	77.0	146	313	675
19	Grove Av.	n/o Schaefer Av.	Residential	76.6	137	295	635
20	Grove Av.	n/o Edison Av.	Commercial/Residential	76.0	127	273	587
21	Grove Av.	n/o Eucalyptus Av.	Commercial/Residential	76.5	136	294	633
22	Grove Av.	n/o Street A	Commercial/Residential	74.6	101	219	471
23	Grove Av.	n/o Merrill Av.	Business Park	74.6	101	219	471
24	Archibald Av.	n/o SR-60	Commercial	80.1	281	606	1307
25	Archibald Av.	n/o SR-60 EB Ramps	Freeway	80.3	292	630	1357
26	Archibald Av.	n/o Riverside Dr.	Commercial/Residential	79.6	262	564	1215
27	Archibald Av.	n/o Chino Av.	Commercial/Residential	80.0	278	600	1292
28	Archibald Av.	n/o Schaefer Av.	Residential	80.0	278	600	1292
29	Archibald Av.	n/o Edison Av.	Residential	80.0	278	600	1292
30	Archibald Av.	n/o Eucalyptus Av.	Commercial/Residential	81.0	327	704	1516
31	Archibald Av.	n/o Merrill Av.	Commercial/Residential	81.0	325	700	1509
32	Archibald Av.	n/o Limonite Av.	Business Park/Residential	81.0	326	703	1514
33	Archibald Av.	n/o Schleisman Rd.	Residential	75.4	251	542	1167
34	Archibald Av.	s/o Schleisman Rd.	Residential	74.6	224	482	1038
35	Edison Av.	w/o Pipeline Av.	Commercial	79.8	271	585	1260
36	Edison Av.	w/o Ramona Av.	Commercial/Industrial	79.2	245	527	1135
37	Edison Av.	w/o Central Av.	Industrial	78.3	215	463	998
38	Edison Av.	w/o Mountain Av.	Industrial/Open Space	79.0	238	512	1103
39	Edison Av.	w/o San Antonio Av.	Residential/Open Space	78.3	214	461	993
40	Edison Av.	w/o Euclid Av.	Commercial/Business Park	77.4	187	403	869
41	Edison Av.	e/o Euclid Av.	Mixed-Use/Residential	78.5	308	663	1429
42	Edison Av.	w/o Grove Av.	Commercial/Residential	77.7	274	590	1270
43	Edison Av.	w/o Walker Av.	Commercial/Residential	78.8	323	695	1497

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
44	Edison Av.	w/o Archibald Av.	Residential	78.9	329	709	1528
45	Edison Av.	w/o Haven Av.	School/Residential	80.9	447	964	2076
46	Edison Av.	e/o Haven Av.	Mixed-Use/Residential	81.0	456	983	2117
47	Ontario Ranch Rd.	e/o Hamner Av.	Commercial	78.4	275	593	1278
48	Eucalyptus Av.	w/o Bon View Av.	Residential	70.9	50	109	234
49	Eucalyptus Av.	w/o Walker Av.	Business Park/Residential	67.8	RW	67	145
50	Eucalyptus Av.	e/o Walker Av.	Business Park/Residential	68.0	RW	70	151
51	Eucalyptus Av.	w/o Vineyard Av.	Mixed-Use	68.0	RW	70	151
52	Eucalyptus Av.	e/o Vineyard Av.	Mixed-Use	68.0	RW	70	151
53	Merrill Av.	e/o Euclid Av.	Commercial	77.2	134	288	620
54	Merrill Av.	w/o Grove Av.	Business Park	77.8	146	314	677
55	Merrill Av.	e/o Grove Av.	Business Park	77.9	147	317	684
56	Merrill Av.	e/o Walker Av.	Business Park	78.3	156	337	726
57	Merrill Av.	w/o Vineyard Av.	Business Park	78.1	153	330	711
58	Merrill Av.	e/o Vineyard Av.	Business Park	78.5	163	351	756
59	Limonite	e/o Archibald Av.	Business Park	75.6	180	388	837
60	Limonite	w/o Sumner Av.	Residential	75.9	189	407	877
61	Limonite	w/o Scholar Wy.	Residential	75.8	187	402	866
62	Limonite	w/o Hamner Av.	Commercial/Residential	76.0	190	408	880
63	Limonite	e/o Hamner Av.	Commercial	76.2	195	421	907

[1] Sources: Land Use Maps of the City of Chino, Ontario, and Eastvale, and aerial imagery.

[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 represent a paved and/or fully constructed roadway under the given scenario.

TABLE 7-8: OPENING YEAR 2025 WITH PHASE A+B 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	Euclid Av.	n/o SR-60	Commercial/Residential	81.2	469	1010	2176
2	Euclid Av.	n/o SR-60 EB Ramps	Freeway	82.8	598	1289	2777
3	Euclid Av.	n/o Walnut Av.	Commercial	83.0	619	1334	2873
4	Euclid Av.	n/o Riverside Dr.	Commercial/Residential	82.8	598	1288	2776
5	Euclid Av.	n/o Chino Av.	Commercial/Residential	82.4	564	1215	2618
6	Euclid Av.	n/o Schaefer Av.	Residential	82.7	588	1267	2730
7	Euclid Av.	n/o Edison Av.	Office	82.9	608	1309	2820
8	Euclid Av.	n/o Eucalyptus Av.	Industrial	82.6	584	1257	2709
9	Euclid Av.	n/o Merrill Av.	Commercial/Office	84.3	755	1626	3503
10	Euclid Av.	n/o Kimball Av.	Open Space/Public	84.3	757	1631	3514
11	Euclid Av.	n/o Bickmore Av.	Commercial/Industrial	82.8	602	1298	2795
12	Euclid Av.	n/o Pine Av.	Commercial/Industrial	82.7	589	1269	2734
13	Euclid Av.	s/o Pine Av.	Open Space	84.8	815	1755	3782
14	Grove Av.	n/o SR-60	Commercial	80.1	284	612	1319
15	Grove Av.	n/o SR-60 EB Ramps	Freeway	79.3	250	539	1162
16	Grove Av.	n/o Walnut Av.	Commercial/Residential	78.4	217	468	1009
17	Grove Av.	n/o Riverside Dr.	Residential	76.9	173	373	803
18	Grove Av.	n/o Chino Av.	Residential	77.0	147	317	684
19	Grove Av.	n/o Schaefer Av.	Residential	76.6	139	299	644
20	Grove Av.	n/o Edison Av.	Commercial/Residential	76.2	129	277	597
21	Grove Av.	n/o Eucalyptus Av.	Commercial/Residential	76.8	142	306	660
22	Grove Av.	n/o Street A	Commercial/Residential	75.2	110	238	513
23	Grove Av.	n/o Merrill Av.	Business Park	75.2	110	238	513
24	Archibald Av.	n/o SR-60	Commercial	80.1	282	607	1307
25	Archibald Av.	n/o SR-60 EB Ramps	Freeway	80.3	292	630	1357
26	Archibald Av.	n/o Riverside Dr.	Commercial/Residential	80.1	282	608	1309
27	Archibald Av.	n/o Chino Av.	Commercial/Residential	80.5	298	643	1385
28	Archibald Av.	n/o Schaefer Av.	Residential	80.5	302	651	1403
29	Archibald Av.	n/o Edison Av.	Residential	80.5	302	651	1403
30	Archibald Av.	n/o Eucalyptus Av.	Commercial/Residential	81.8	367	790	1701
31	Archibald Av.	n/o Merrill Av.	Commercial/Residential	81.8	365	787	1695
32	Archibald Av.	n/o Limonite Av.	Business Park/Residential	81.3	339	731	1574
33	Archibald Av.	n/o Schleisman Rd.	Residential	75.4	252	543	1169
34	Archibald Av.	s/o Schleisman Rd.	Residential	74.6	224	483	1040
35	Edison Av.	w/o Pipeline Av.	Commercial	79.9	273	587	1265
36	Edison Av.	w/o Ramona Av.	Commercial/Industrial	79.2	246	529	1140
37	Edison Av.	w/o Central Av.	Industrial	78.4	216	466	1004
38	Edison Av.	w/o Mountain Av.	Industrial/Open Space	79.0	239	515	1109
39	Edison Av.	w/o San Antonio Av.	Residential/Open Space	78.3	215	464	999
40	Edison Av.	w/o Euclid Av.	Commercial/Business Park	77.5	189	407	876
41	Edison Av.	e/o Euclid Av.	Mixed-Use/Residential	78.6	315	679	1463
42	Edison Av.	w/o Grove Av.	Commercial/Residential	77.9	281	606	1306
43	Edison Av.	w/o Walker Av.	Commercial/Residential	78.8	323	695	1497

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
44	Edison Av.	w/o Archibald Av.	Residential	79.1	340	732	1577
45	Edison Av.	w/o Haven Av.	School/Residential	81.5	490	1056	2274
46	Edison Av.	e/o Haven Av.	Mixed-Use/Residential	81.6	498	1073	2312
47	Ontario Ranch Rd.	e/o Hamner Av.	Commercial	78.8	293	631	1359
48	Eucalyptus Av.	w/o Bon View Av.	Residential	71.0	51	110	237
49	Eucalyptus Av.	w/o Walker Av.	Business Park/Residential	67.8	RW	67	145
50	Eucalyptus Av.	e/o Walker Av.	Business Park/Residential	68.0	RW	70	151
51	Eucalyptus Av.	w/o Vineyard Av.	Mixed-Use	68.0	RW	70	151
52	Eucalyptus Av.	e/o Vineyard Av.	Mixed-Use	68.0	RW	70	151
53	Merrill Av.	e/o Euclid Av.	Commercial	79.2	181	390	841
54	Merrill Av.	w/o Grove Av.	Business Park	79.6	192	414	891
55	Merrill Av.	e/o Grove Av.	Business Park	79.6	193	416	895
56	Merrill Av.	e/o Walker Av.	Business Park	79.8	197	425	916
57	Merrill Av.	w/o Vineyard Av.	Business Park	79.6	193	416	896
58	Merrill Av.	e/o Vineyard Av.	Business Park	80.1	208	449	966
59	Limonite	e/o Archibald Av.	Business Park	75.9	189	408	879
60	Limonite	w/o Sumner Av.	Residential	76.2	198	426	919
61	Limonite	w/o Scholar Wy.	Residential	76.2	195	421	907
62	Limonite	w/o Hamner Av.	Commercial/Residential	76.3	198	428	921
63	Limonite	e/o Hamner Av.	Commercial	76.4	204	440	947

[1] Sources: Land Use Maps of the City of Chino, Ontario, and Eastvale, and aerial imagery.

[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 represent a paved and/or fully constructed roadway under the given scenario.

TABLE 7-9: OPENING YEAR 2026 WITHOUT PROJECT 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	Euclid Av.	n/o SR-60	Commercial/Residential	81.3	475	1024	2206
2	Euclid Av.	n/o SR-60 EB Ramps	Freeway	82.4	565	1217	2622
3	Euclid Av.	n/o Walnut Av.	Commercial	82.7	588	1268	2731
4	Euclid Av.	n/o Riverside Dr.	Commercial/Residential	82.4	566	1220	2629
5	Euclid Av.	n/o Chino Av.	Commercial/Residential	82.0	531	1143	2463
6	Euclid Av.	n/o Schaefer Av.	Residential	82.3	556	1198	2580
7	Euclid Av.	n/o Edison Av.	Office	82.5	576	1241	2674
8	Euclid Av.	n/o Eucalyptus Av.	Industrial	82.3	553	1192	2568
9	Euclid Av.	n/o Merrill Av.	Commercial/Office	84.0	718	1548	3334
10	Euclid Av.	n/o Kimball Av.	Open Space/Public	84.1	735	1584	3413
11	Euclid Av.	n/o Bickmore Av.	Commercial/Industrial	82.5	575	1240	2671
12	Euclid Av.	n/o Pine Av.	Commercial/Industrial	82.4	561	1208	2603
13	Euclid Av.	s/o Pine Av.	Open Space	84.6	795	1712	3689
14	Grove Av.	n/o SR-60	Commercial	79.4	253	545	1175
15	Grove Av.	n/o SR-60 EB Ramps	Freeway	79.4	253	545	1175
16	Grove Av.	n/o Walnut Av.	Commercial/Residential	78.4	219	473	1019
17	Grove Av.	n/o Riverside Dr.	Residential	77.0	174	376	810
18	Grove Av.	n/o Chino Av.	Residential	77.1	148	319	687
19	Grove Av.	n/o Schaefer Av.	Residential	76.7	139	300	646
20	Grove Av.	n/o Edison Av.	Commercial/Residential	76.2	129	277	598
21	Grove Av.	n/o Eucalyptus Av.	Commercial/Residential	76.7	140	301	649
22	Grove Av.	n/o Street A	Commercial/Residential	74.7	103	223	480
23	Grove Av.	n/o Merrill Av.	Business Park	74.7	103	223	480
24	Archibald Av.	n/o SR-60	Commercial	80.4	297	640	1379
25	Archibald Av.	n/o SR-60 EB Ramps	Freeway	80.4	297	640	1379
26	Archibald Av.	n/o Riverside Dr.	Commercial/Residential	79.7	267	575	1239
27	Archibald Av.	n/o Chino Av.	Commercial/Residential	80.1	284	611	1317
28	Archibald Av.	n/o Schaefer Av.	Residential	80.1	284	612	1319
29	Archibald Av.	n/o Edison Av.	Residential	80.1	284	612	1319
30	Archibald Av.	n/o Eucalyptus Av.	Commercial/Residential	81.2	334	720	1550
31	Archibald Av.	n/o Merrill Av.	Commercial/Residential	81.2	332	716	1543
32	Archibald Av.	n/o Limonite Av.	Business Park/Residential	81.2	333	717	1545
33	Archibald Av.	n/o Schleisman Rd.	Residential	75.5	256	552	1189
34	Archibald Av.	s/o Schleisman Rd.	Residential	74.7	227	490	1055
35	Edison Av.	w/o Pipeline Av.	Commercial	79.9	275	593	1278
36	Edison Av.	w/o Ramona Av.	Commercial/Industrial	79.3	248	535	1152
37	Edison Av.	w/o Central Av.	Industrial	78.4	218	471	1014
38	Edison Av.	w/o Mountain Av.	Industrial/Open Space	79.1	241	520	1120
39	Edison Av.	w/o San Antonio Av.	Residential/Open Space	78.4	217	468	1009
40	Edison Av.	w/o Euclid Av.	Commercial/Business Park	77.5	191	411	885
41	Edison Av.	e/o Euclid Av.	Mixed-Use/Residential	78.6	314	676	1456
42	Edison Av.	w/o Grove Av.	Commercial/Residential	77.8	279	601	1294
43	Edison Av.	w/o Walker Av.	Commercial/Residential	78.9	328	706	1521

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
44	Edison Av.	w/o Archibald Av.	Residential	79.0	334	721	1552
45	Edison Av.	w/o Haven Av.	School/Residential	81.0	456	982	2117
46	Edison Av.	e/o Haven Av.	Mixed-Use/Residential	81.1	465	1001	2157
47	Ontario Ranch Rd.	e/o Hamner Av.	Commercial	78.5	280	603	1300
48	Eucalyptus Av.	w/o Bon View Av.	Residential	71.1	52	112	240
49	Eucalyptus Av.	w/o Walker Av.	Business Park/Residential	68.0	RW	69	149
50	Eucalyptus Av.	e/o Walker Av.	Business Park/Residential	68.2	RW	72	156
51	Eucalyptus Av.	w/o Vineyard Av.	Mixed-Use	68.2	RW	72	156
52	Eucalyptus Av.	e/o Vineyard Av.	Mixed-Use	68.2	RW	72	156
53	Merrill Av.	e/o Euclid Av.	Commercial	77.4	137	295	636
54	Merrill Av.	w/o Grove Av.	Business Park	78.0	149	322	693
55	Merrill Av.	e/o Grove Av.	Business Park	78.0	151	326	702
56	Merrill Av.	e/o Walker Av.	Business Park	78.4	160	346	745
57	Merrill Av.	w/o Vineyard Av.	Business Park	78.3	157	338	728
58	Merrill Av.	e/o Vineyard Av.	Business Park	78.7	167	360	776
59	Limonite	e/o Archibald Av.	Business Park	75.8	185	398	858
60	Limonite	w/o Sumner Av.	Residential	76.1	194	417	899
61	Limonite	w/o Scholar Wy.	Residential	76.0	191	412	887
62	Limonite	w/o Hamner Av.	Commercial/Residential	76.1	194	418	901
63	Limonite	e/o Hamner Av.	Commercial	76.3	200	431	928

[1] Sources: Land Use Maps of the City of Chino, Ontario, and Eastvale, and aerial imagery.

[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 represent a paved and/or fully constructed roadway under the given scenario.

TABLE 7-10: OPENING YEAR 2026 WITH PHASE A+B+C 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	Euclid Av.	n/o SR-60	Commercial/Residential	81.3	475	1024	2207
2	Euclid Av.	n/o SR-60 EB Ramps	Freeway	83.0	619	1334	2874
3	Euclid Av.	n/o Walnut Av.	Commercial	83.2	642	1383	2980
4	Euclid Av.	n/o Riverside Dr.	Commercial/Residential	83.0	621	1338	2883
5	Euclid Av.	n/o Chino Av.	Commercial/Residential	82.7	588	1266	2728
6	Euclid Av.	n/o Schaefer Av.	Residential	82.9	612	1319	2841
7	Euclid Av.	n/o Edison Av.	Office	83.1	632	1361	2932
8	Euclid Av.	n/o Eucalyptus Av.	Industrial	82.9	608	1309	2820
9	Euclid Av.	n/o Merrill Av.	Commercial/Office	84.5	783	1687	3635
10	Euclid Av.	n/o Kimball Av.	Open Space/Public	84.5	782	1685	3629
11	Euclid Av.	n/o Bickmore Av.	Commercial/Industrial	83.1	627	1351	2911
12	Euclid Av.	n/o Pine Av.	Commercial/Industrial	83.0	613	1321	2847
13	Euclid Av.	s/o Pine Av.	Open Space	85.0	839	1808	3896
14	Grove Av.	n/o SR-60	Commercial	79.4	254	546	1177
15	Grove Av.	n/o SR-60 EB Ramps	Freeway	79.4	254	547	1179
16	Grove Av.	n/o Walnut Av.	Commercial/Residential	78.5	221	476	1025
17	Grove Av.	n/o Riverside Dr.	Residential	77.0	176	379	816
18	Grove Av.	n/o Chino Av.	Residential	77.2	150	324	698
19	Grove Av.	n/o Schaefer Av.	Residential	76.8	142	305	658
20	Grove Av.	n/o Edison Av.	Commercial/Residential	76.3	131	283	610
21	Grove Av.	n/o Eucalyptus Av.	Commercial/Residential	77.1	148	318	686
22	Grove Av.	n/o Street A	Commercial/Residential	74.9	106	227	490
23	Grove Av.	n/o Merrill Av.	Business Park	74.9	105	227	489
24	Archibald Av.	n/o SR-60	Commercial	80.4	297	640	1380
25	Archibald Av.	n/o SR-60 EB Ramps	Freeway	80.4	297	640	1380
26	Archibald Av.	n/o Riverside Dr.	Commercial/Residential	80.3	292	630	1357
27	Archibald Av.	n/o Chino Av.	Commercial/Residential	80.7	309	666	1434
28	Archibald Av.	n/o Schaefer Av.	Residential	80.8	314	677	1458
29	Archibald Av.	n/o Edison Av.	Residential	80.8	314	677	1458
30	Archibald Av.	n/o Eucalyptus Av.	Commercial/Residential	82.1	384	827	1781
31	Archibald Av.	n/o Merrill Av.	Commercial/Residential	82.1	382	824	1774
32	Archibald Av.	n/o Limonite Av.	Business Park/Residential	81.5	349	752	1621
33	Archibald Av.	n/o Schleisman Rd.	Residential	75.5	257	554	1193
34	Archibald Av.	s/o Schleisman Rd.	Residential	74.7	228	491	1058
35	Edison Av.	w/o Pipeline Av.	Commercial	80.0	277	596	1285
36	Edison Av.	w/o Ramona Av.	Commercial/Industrial	79.3	250	538	1159
37	Edison Av.	w/o Central Av.	Industrial	78.5	220	474	1021
38	Edison Av.	w/o Mountain Av.	Industrial/Open Space	79.1	243	523	1128
39	Edison Av.	w/o San Antonio Av.	Residential/Open Space	78.4	219	473	1018
40	Edison Av.	w/o Euclid Av.	Commercial/Business Park	77.6	193	415	894
41	Edison Av.	e/o Euclid Av.	Mixed-Use/Residential	78.8	323	697	1501
42	Edison Av.	w/o Grove Av.	Commercial/Residential	78.1	289	623	1343
43	Edison Av.	w/o Walker Av.	Commercial/Residential	78.9	328	706	1521

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
44	Edison Av.	w/o Archibald Av.	Residential	79.3	348	751	1617
45	Edison Av.	w/o Haven Av.	School/Residential	81.7	510	1098	2366
46	Edison Av.	e/o Haven Av.	Mixed-Use/Residential	81.8	518	1115	2403
47	Ontario Ranch Rd.	e/o Hamner Av.	Commercial	79.0	302	651	1402
48	Eucalyptus Av.	w/o Bon View Av.	Residential	71.2	53	113	244
49	Eucalyptus Av.	w/o Walker Av.	Business Park/Residential	69.1	RW	83	179
50	Eucalyptus Av.	e/o Walker Av.	Business Park/Residential	69.5	RW	87	188
51	Eucalyptus Av.	w/o Vineyard Av.	Mixed-Use	69.0	RW	82	176
52	Eucalyptus Av.	e/o Vineyard Av.	Mixed-Use	68.4	RW	75	161
53	Merrill Av.	e/o Euclid Av.	Commercial	79.7	196	422	909
54	Merrill Av.	w/o Grove Av.	Business Park	80.1	207	445	958
55	Merrill Av.	e/o Grove Av.	Business Park	79.8	198	427	920
56	Merrill Av.	e/o Walker Av.	Business Park	80.1	206	444	957
57	Merrill Av.	w/o Vineyard Av.	Business Park	80.0	203	438	943
58	Merrill Av.	e/o Vineyard Av.	Business Park	80.6	223	480	1034
59	Limonite	e/o Archibald Av.	Business Park	76.2	196	423	912
60	Limonite	w/o Sumner Av.	Residential	76.5	205	442	952
61	Limonite	w/o Scholar Wy.	Residential	76.4	202	436	940
62	Limonite	w/o Hamner Av.	Commercial/Residential	76.5	205	443	954
63	Limonite	e/o Hamner Av.	Commercial	76.6	211	454	978

[1] Sources: Land Use Maps of the City of Chino, Ontario, and Eastvale, and aerial imagery.

[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 represent a paved and/or fully constructed roadway under the given scenario.

TABLE 7-11: HORIZON YEAR 2040 WITHOUT PROJECT 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	Euclid Av.	n/o SR-60	Commercial/Residential	81.7	506	1091	2350
2	Euclid Av.	n/o SR-60 EB Ramps	Freeway	83.0	617	1330	2865
3	Euclid Av.	n/o Walnut Av.	Commercial	83.1	627	1351	2911
4	Euclid Av.	n/o Riverside Dr.	Commercial/Residential	82.8	604	1300	2802
5	Euclid Av.	n/o Chino Av.	Commercial/Residential	82.7	591	1273	2744
6	Euclid Av.	n/o Schaefer Av.	Residential	82.7	592	1276	2749
7	Euclid Av.	n/o Edison Av.	Office	83.0	614	1323	2849
8	Euclid Av.	n/o Eucalyptus Av.	Industrial	82.7	590	1270	2737
9	Euclid Av.	n/o Merrill Av.	Commercial/Office	84.6	789	1700	3662
10	Euclid Av.	n/o Kimball Av.	Open Space/Public	84.5	784	1688	3637
11	Euclid Av.	n/o Bickmore Av.	Commercial/Industrial	83.4	653	1406	3029
12	Euclid Av.	n/o Pine Av.	Commercial/Industrial	82.9	613	1320	2844
13	Euclid Av.	s/o Pine Av.	Open Space	85.1	847	1825	3931
14	Grove Av.	n/o SR-60	Commercial	80.6	308	663	1428
15	Grove Av.	n/o SR-60 EB Ramps	Freeway	80.6	308	663	1428
16	Grove Av.	n/o Walnut Av.	Commercial/Residential	79.4	253	546	1176
17	Grove Av.	n/o Riverside Dr.	Residential	77.8	199	430	926
18	Grove Av.	n/o Chino Av.	Residential	77.5	158	340	732
19	Grove Av.	n/o Schaefer Av.	Residential	77.1	148	319	688
20	Grove Av.	n/o Edison Av.	Commercial/Residential	76.6	137	296	637
21	Grove Av.	n/o Eucalyptus Av.	Commercial/Residential	77.7	162	350	754
22	Grove Av.	n/o Street A	Commercial/Residential	76.7	139	299	645
23	Grove Av.	n/o Merrill Av.	Business Park	76.7	139	299	645
24	Archibald Av.	n/o SR-60	Commercial	81.0	325	701	1511
25	Archibald Av.	n/o SR-60 EB Ramps	Freeway	81.0	325	701	1511
26	Archibald Av.	n/o Riverside Dr.	Commercial/Residential	80.2	285	615	1324
27	Archibald Av.	n/o Chino Av.	Commercial/Residential	80.5	302	651	1403
28	Archibald Av.	n/o Schaefer Av.	Residential	81.4	346	745	1605
29	Archibald Av.	n/o Edison Av.	Residential	80.7	312	672	1448
30	Archibald Av.	n/o Eucalyptus Av.	Commercial/Residential	81.6	356	767	1652
31	Archibald Av.	n/o Merrill Av.	Commercial/Residential	81.6	354	763	1645
32	Archibald Av.	n/o Limonite Av.	Business Park/Residential	82.4	402	866	1866
33	Archibald Av.	n/o Schleisman Rd.	Residential	75.5	258	555	1196
34	Archibald Av.	s/o Schleisman Rd.	Residential	74.8	230	495	1067
35	Edison Av.	w/o Pipeline Av.	Commercial	80.7	312	672	1448
36	Edison Av.	w/o Ramona Av.	Commercial/Industrial	79.6	261	561	1209
37	Edison Av.	w/o Central Av.	Industrial	78.8	233	501	1080
38	Edison Av.	w/o Mountain Av.	Industrial/Open Space	80.5	300	646	1392
39	Edison Av.	w/o San Antonio Av.	Residential/Open Space	79.9	275	592	1275
40	Edison Av.	w/o Euclid Av.	Commercial/Business Park	80.0	277	596	1285
41	Edison Av.	e/o Euclid Av.	Mixed-Use/Residential	83.9	713	1537	3311
42	Edison Av.	w/o Grove Av.	Commercial/Residential	84.3	757	1631	3513
43	Edison Av.	w/o Walker Av.	Commercial/Residential	83.5	667	1438	3098

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
44	Edison Av.	w/o Archibald Av.	Residential	84.0	721	1552	3345
45	Edison Av.	w/o Haven Av.	School/Residential	82.4	564	1216	2620
46	Edison Av.	e/o Haven Av.	Mixed-Use/Residential	82.6	585	1260	2714
47	Ontario Ranch Rd.	e/o Hamner Av.	Commercial	78.9	298	643	1385
48	Eucalyptus Av.	w/o Bon View Av.	Residential	71.5	55	119	256
49	Eucalyptus Av.	w/o Walker Av.	Business Park/Residential	73.6	76	165	355
50	Eucalyptus Av.	e/o Walker Av.	Business Park/Residential	68.2	RW	71	154
51	Eucalyptus Av.	w/o Vineyard Av.	Mixed-Use	73.4	74	160	345
52	Eucalyptus Av.	e/o Vineyard Av.	Mixed-Use	73.0	69	150	322
53	Merrill Av.	e/o Euclid Av.	Commercial	77.8	146	315	678
54	Merrill Av.	w/o Grove Av.	Business Park	78.4	159	343	739
55	Merrill Av.	e/o Grove Av.	Business Park	78.5	161	347	748
56	Merrill Av.	e/o Walker Av.	Business Park	78.8	171	368	794
57	Merrill Av.	w/o Vineyard Av.	Business Park	78.7	167	360	775
58	Merrill Av.	e/o Vineyard Av.	Business Park	79.1	178	384	827
59	Limonite	e/o Archibald Av.	Business Park	77.9	256	551	1187
60	Limonite	w/o Sumner Av.	Residential	78.2	266	573	1235
61	Limonite	w/o Scholar Wy.	Residential	77.6	243	524	1128
62	Limonite	w/o Hamner Av.	Commercial/Residential	76.9	219	471	1016
63	Limonite	e/o Hamner Av.	Commercial	78.1	264	569	1227

[1] Sources: Land Use Maps of the City of Chino, Ontario, and Eastvale, and aerial imagery.

[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 represent a paved and/or fully constructed roadway under the given scenario.

TABLE 7-12: HORIZON YEAR 2040 WITH PHASE A+B+C 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	Euclid Av.	n/o SR-60	Commercial/Residential	81.7	507	1091	2351
2	Euclid Av.	n/o SR-60 EB Ramps	Freeway	83.5	670	1443	3108
3	Euclid Av.	n/o Walnut Av.	Commercial	83.6	679	1463	3152
4	Euclid Av.	n/o Riverside Dr.	Commercial/Residential	83.4	657	1415	3048
5	Euclid Av.	n/o Chino Av.	Commercial/Residential	83.3	646	1391	2996
6	Euclid Av.	n/o Schaefer Av.	Residential	83.3	647	1394	3003
7	Euclid Av.	n/o Edison Av.	Office	83.5	668	1439	3100
8	Euclid Av.	n/o Eucalyptus Av.	Industrial	83.3	642	1384	2982
9	Euclid Av.	n/o Merrill Av.	Commercial/Office	85.1	851	1833	3950
10	Euclid Av.	n/o Kimball Av.	Open Space/Public	84.9	829	1786	3847
11	Euclid Av.	n/o Bickmore Av.	Commercial/Industrial	83.8	701	1511	3256
12	Euclid Av.	n/o Pine Av.	Commercial/Industrial	83.5	663	1428	3077
13	Euclid Av.	s/o Pine Av.	Open Space	85.4	890	1918	4131
14	Grove Av.	n/o SR-60	Commercial	80.7	308	664	1430
15	Grove Av.	n/o SR-60 EB Ramps	Freeway	80.7	308	665	1432
16	Grove Av.	n/o Walnut Av.	Commercial/Residential	79.4	255	548	1182
17	Grove Av.	n/o Riverside Dr.	Residential	77.9	201	433	932
18	Grove Av.	n/o Chino Av.	Residential	77.6	160	345	743
19	Grove Av.	n/o Schaefer Av.	Residential	77.2	151	325	700
20	Grove Av.	n/o Edison Av.	Commercial/Residential	76.7	140	301	649
21	Grove Av.	n/o Eucalyptus Av.	Commercial/Residential	78.0	170	366	788
22	Grove Av.	n/o Street A	Commercial/Residential	76.7	141	303	653
23	Grove Av.	n/o Merrill Av.	Business Park	76.7	141	303	652
24	Archibald Av.	n/o SR-60	Commercial	81.0	326	702	1511
25	Archibald Av.	n/o SR-60 EB Ramps	Freeway	81.0	326	702	1511
26	Archibald Av.	n/o Riverside Dr.	Commercial/Residential	80.7	310	668	1439
27	Archibald Av.	n/o Chino Av.	Commercial/Residential	81.0	327	704	1517
28	Archibald Av.	n/o Schaefer Av.	Residential	81.9	373	804	1732
29	Archibald Av.	n/o Edison Av.	Residential	81.3	341	734	1581
30	Archibald Av.	n/o Eucalyptus Av.	Commercial/Residential	82.4	404	871	1876
31	Archibald Av.	n/o Merrill Av.	Commercial/Residential	82.4	403	868	1869
32	Archibald Av.	n/o Limonite Av.	Business Park/Residential	82.6	417	898	1935
33	Archibald Av.	n/o Schleisman Rd.	Residential	75.6	258	557	1199
34	Archibald Av.	s/o Schleisman Rd.	Residential	74.8	231	497	1070
35	Edison Av.	w/o Pipeline Av.	Commercial	80.8	313	675	1454
36	Edison Av.	w/o Ramona Av.	Commercial/Industrial	79.6	262	564	1216
37	Edison Av.	w/o Central Av.	Industrial	78.9	234	504	1087
38	Edison Av.	w/o Mountain Av.	Industrial/Open Space	80.5	301	649	1399
39	Edison Av.	w/o San Antonio Av.	Residential/Open Space	79.9	276	595	1282
40	Edison Av.	w/o Euclid Av.	Commercial/Business Park	80.0	278	600	1293
41	Edison Av.	e/o Euclid Av.	Mixed-Use/Residential	84.0	720	1551	3341
42	Edison Av.	w/o Grove Av.	Commercial/Residential	84.4	763	1644	3542
43	Edison Av.	w/o Walker Av.	Commercial/Residential	83.5	667	1438	3098

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
44	Edison Av.	w/o Archibald Av.	Residential	84.1	730	1573	3389
45	Edison Av.	w/o Haven Av.	School/Residential	82.9	613	1321	2846
46	Edison Av.	e/o Haven Av.	Mixed-Use/Residential	83.2	632	1362	2935
47	Ontario Ranch Rd.	e/o Hamner Av.	Commercial	79.4	320	688	1483
48	Eucalyptus Av.	w/o Bon View Av.	Residential	71.6	56	121	260
49	Eucalyptus Av.	w/o Walker Av.	Business Park/Residential	74.0	81	174	375
50	Eucalyptus Av.	e/o Walker Av.	Business Park/Residential	69.4	RW	87	187
51	Eucalyptus Av.	w/o Vineyard Av.	Mixed-Use	73.7	77	166	359
52	Eucalyptus Av.	e/o Vineyard Av.	Mixed-Use	73.0	70	151	326
53	Merrill Av.	e/o Euclid Av.	Commercial	80.0	204	438	945
54	Merrill Av.	w/o Grove Av.	Business Park	80.3	215	463	997
55	Merrill Av.	e/o Grove Av.	Business Park	80.1	207	446	960
56	Merrill Av.	e/o Walker Av.	Business Park	80.3	215	464	1000
57	Merrill Av.	w/o Vineyard Av.	Business Park	80.2	212	457	985
58	Merrill Av.	e/o Vineyard Av.	Business Park	80.8	232	501	1078
59	Limonite	e/o Archibald Av.	Business Park	78.2	266	573	1233
60	Limonite	w/o Sumner Av.	Residential	78.4	276	594	1280
61	Limonite	w/o Scholar Wy.	Residential	77.8	253	545	1175
62	Limonite	w/o Hamner Av.	Commercial/Residential	77.2	229	494	1065
63	Limonite	e/o Hamner Av.	Commercial	78.4	274	590	1271

[1] Sources: Land Use Maps of the City of Chino, Ontario, and Eastvale, and aerial imagery.

[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 represent a paved and/or fully constructed roadway under the given scenario.

7.2 EXISTING (2019) PHASE A TRAFFIC NOISE LEVEL CONTRIBUTIONS

An analysis of existing traffic noise levels plus traffic noise generated by the proposed Project Phase A has been included in this report for informational purposes. However, the analysis of existing traffic noise levels plus traffic noise generated by the proposed Project scenario will not actually occur since the Project would not be fully constructed and operational until Year 2026. Table 7-1 presents the Existing without Project conditions CNEL noise levels. The without Project exterior noise levels are expected to range from 66.2 to 83.6 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-2 shows that the Existing with Project Phase A conditions will range from 66.2 to 83.7 dBA CNEL. As shown on Table 7-13 with Project Phase A conditions will generate a noise level increase of up to 1.0 dBA CNEL on the study area roadway segments.

7.3 EXISTING (2019) PHASE A+B TRAFFIC NOISE LEVEL CONTRIBUTIONS

An analysis of existing traffic noise levels plus traffic noise generated by the proposed Project Phase A+B has been included in this report for informational purposes. However, the analysis of existing traffic noise levels plus traffic noise generated by the proposed Project scenario will not actually occur since the Project would not be fully constructed and operational until Year 2026. Table 7-3 shows the Existing with Project Phase A+B conditions will range from 66.2 to 84.0 dBA CNEL. As shown on Table 7-14 the Project Phase A+B will generate a noise level increase of up to 2.5 dBA CNEL on the study area roadway segments.

7.4 EXISTING (2019) PHASE A+B+C TRAFFIC NOISE LEVEL CONTRIBUTIONS

An analysis of existing traffic noise levels plus traffic noise generated by the proposed Project Phase A+B+C has been included in this report for informational purposes. However, the analysis of existing traffic noise levels plus traffic noise generated by the proposed Project scenario will not actually occur since the Project would not be fully constructed and operational until Year 2026. Table 7-4 shows the Existing with Project Phase A+B+C conditions will range from 66.9 to 84.1 dBA CNEL. As shown on Table 7-15 the Project Phase A+B+C will generate a noise level increase of up to 3.0 dBA CNEL on the study area roadway segments.

7.5 OPENING YEAR 2022 PHASE A TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-5 presents the Opening Year 2022 without Project conditions CNEL noise levels which are expected to range from 67.1 to 84.1 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-6 shows the Opening Year 2022 with Project Phase A conditions will range from 67.1 to 84.2 dBA CNEL. As shown on Table 7-16 the Project Phase A will generate a noise level increase of up to 0.9 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 2022 with Project Phase A conditions at the land uses adjacent to roadways conveying Project traffic.

7.6 OPENING YEAR 2025 PHASE A+B TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-7 presents the Opening Year 2025 without Project conditions CNEL noise levels which are expected to range from 67.8 to 84.5 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-8 shows the Opening Year 2025 with Project Phase A+B conditions will range from 67.8 to 84.8 dBA CNEL. As shown on Table 7-17 the Project Phase A+B will generate a noise level increase of up to 2.0 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 2025 with Project Phase A+B conditions at the land uses adjacent to roadways conveying Project traffic.

7.7 OPENING YEAR 2026 PHASE A+B+C TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-9 presents the Opening Year 2026 without Project conditions CNEL noise levels which are expected to range from 68.0 to 84.6 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-10 shows the Opening Year 2026 with Project Phase A+B+C conditions will range from 68.4 to 85.0 dBA CNEL. As shown on Table 7-18 the Project Phase A+B+C will generate a noise level increase of up to 2.3 dBA CNEL on the study area roadway segments. Based on the significance criteria in Section 4, the Project-related noise level increases are considered *less than significant* under Opening Year 2026 with Project Phase A+B+C conditions at the land uses adjacent to roadways conveying Project traffic.

7.8 HORIZON YEAR 2040 PHASE A+B+C TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-11 presents the Horizon Year 2040 without Project conditions CNEL noise levels are expected to range from 68.2 to 85.1 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-12 shows the Horizon Year 2040 with Project Phase A+B+C conditions will range from 69.4 to 85.4 dBA CNEL. As shown on Table 7-19 the Project Phase A+B+C will generate a noise level increase of up to 2.2 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 Project Phase A+B+C conditions at the land uses adjacent to roadways conveying Project traffic.

TABLE 7-13: EXISTING (2019) PHASE A PROJECT-RELATED TRAFFIC NOISE IMPACTS

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold	Threshold Exceeded?
				No Project	With Ph. A	Project Addition			
1	Euclid Av.	n/o SR-60	Commercial/Residential	80.7	80.7	0.0	Yes	1.5	No
2	Euclid Av.	n/o SR-60 EB Ramps	Freeway	81.5	81.7	0.2	No	3.0	No
3	Euclid Av.	n/o Walnut Av.	Commercial	81.6	81.8	0.2	No	3.0	No
4	Euclid Av.	n/o Riverside Dr.	Commercial/Residential	81.3	81.5	0.2	Yes	1.5	No
5	Euclid Av.	n/o Chino Av.	Commercial/Residential	80.8	81.0	0.2	Yes	1.5	No
6	Euclid Av.	n/o Schaefer Av.	Residential	81.1	81.3	0.2	Yes	1.5	No
7	Euclid Av.	n/o Edison Av.	Office	81.4	81.6	0.2	No	3.0	No
8	Euclid Av.	n/o Eucalyptus Av.	Industrial	81.0	81.2	0.2	No	3.0	No
9	Euclid Av.	n/o Merrill Av.	Commercial/Office	82.8	83.0	0.2	No	3.0	No
10	Euclid Av.	n/o Kimball Av.	Open Space/Public	83.0	83.2	0.1	Yes	1.5	No
11	Euclid Av.	n/o Bickmore Av.	Commercial/Industrial	81.1	81.3	0.2	No	3.0	No
12	Euclid Av.	n/o Pine Av.	Commercial/Industrial	81.0	81.2	0.2	No	3.0	No
13	Euclid Av.	s/o Pine Av.	Open Space	83.6	83.7	0.1	Yes	1.5	No
14	Grove Av.	n/o SR-60	Commercial	79.6	79.6	0.0	No	3.0	No
15	Grove Av.	n/o SR-60 EB Ramps	Freeway	78.7	78.7	0.0	No	3.0	No
16	Grove Av.	n/o Walnut Av.	Commercial/Residential	77.8	77.8	0.0	Yes	1.5	No
17	Grove Av.	n/o Riverside Dr.	Residential	76.2	76.3	0.0	Yes	1.5	No
18	Grove Av.	n/o Chino Av.	Residential	76.3	76.3	0.0	Yes	1.5	No
19	Grove Av.	n/o Schaefer Av.	Residential	75.8	75.9	0.0	Yes	1.5	No
20	Grove Av.	n/o Edison Av.	Commercial/Residential	75.3	75.3	0.0	Yes	1.5	No
21	Grove Av.	n/o Eucalyptus Av.	Commercial/Residential	75.2	75.4	0.1	Yes	1.5	No
22	Grove Av.	n/o Street A	Commercial/Residential	73.7	73.9	0.2	Yes	1.5	No
23	Grove Av.	n/o Merrill Av.	Business Park	73.7	73.9	0.2	No	3.0	No
24	Archibald Av.	n/o SR-60	Commercial	79.5	79.5	0.0	No	3.0	No
25	Archibald Av.	n/o SR-60 EB Ramps	Freeway	79.6	79.6	0.0	No	3.0	No
26	Archibald Av.	n/o Riverside Dr.	Commercial/Residential	79.6	79.8	0.2	Yes	1.5	No
27	Archibald Av.	n/o Chino Av.	Commercial/Residential	79.2	79.3	0.2	Yes	1.5	No

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold	Threshold Exceeded?
				No Project	With Ph. A	Project Addition			
28	Archibald Av.	n/o Schaefer Av.	Residential	79.1	79.3	0.2	Yes	1.5	No
29	Archibald Av.	n/o Edison Av.	Residential	79.1	79.3	0.2	Yes	1.5	No
30	Archibald Av.	n/o Eucalyptus Av.	Commercial/Residential	80.0	80.3	0.3	Yes	1.5	No
31	Archibald Av.	n/o Merrill Av.	Commercial/Residential	80.0	80.3	0.3	Yes	1.5	No
32	Archibald Av.	n/o Limonite Av.	Business Park/Residential	80.1	80.2	0.1	Yes	1.5	No
33	Archibald Av.	n/o Schleisman Rd.	Residential	74.5	74.5	0.0	Yes	1.5	No
34	Archibald Av.	s/o Schleisman Rd.	Residential	73.9	73.9	0.0	Yes	1.5	No
35	Edison Av.	w/o Pipeline Av.	Commercial	79.3	79.3	0.0	No	3.0	No
36	Edison Av.	w/o Ramona Av.	Commercial/Industrial	78.6	78.6	0.0	No	3.0	No
37	Edison Av.	w/o Central Av.	Industrial	77.7	77.7	0.0	No	3.0	No
38	Edison Av.	w/o Mountain Av.	Industrial/Open Space	78.3	78.3	0.0	Yes	1.5	No
39	Edison Av.	w/o San Antonio Av.	Residential/Open Space	77.6	77.6	0.0	Yes	1.5	No
40	Edison Av.	w/o Euclid Av.	Commercial/Business Park	76.6	76.7	0.0	No	3.0	No
41	Edison Av.	e/o Euclid Av.	Mixed-Use/Residential	77.7	77.7	0.1	Yes	1.5	No
42	Edison Av.	w/o Grove Av.	Commercial/Residential	76.9	76.9	0.1	Yes	1.5	No
43	Edison Av.	w/o Walker Av.	Commercial/Residential	78.1	78.1	0.0	Yes	1.5	No
44	Edison Av.	w/o Archibald Av.	Residential	78.2	78.3	0.1	Yes	1.5	No
45	Edison Av.	w/o Haven Av.	School/Residential	80.0	80.3	0.2	Yes	1.5	No
46	Edison Av.	e/o Haven Av.	Mixed-Use/Residential	80.2	80.4	0.2	Yes	1.5	No
47	Ontario Ranch Rd.	e/o Hamner Av.	Commercial	77.7	77.8	0.2	No	3.0	No
48	Eucalyptus Av.	w/o Bon View Av.	Residential	69.6	69.7	0.0	Yes	1.5	No
49	Eucalyptus Av.	w/o Walker Av.	Business Park/Residential	66.2	66.2	0.0	Yes	1.5	No
50	Eucalyptus Av.	e/o Walker Av.	Business Park/Residential	66.5	66.5	0.0	Yes	1.5	No
51	Eucalyptus Av.	w/o Vineyard Av.	Mixed-Use	66.5	66.5	0.0	Yes	1.5	No
52	Eucalyptus Av.	e/o Vineyard Av.	Mixed-Use	66.5	66.5	0.0	Yes	1.5	No
53	Merrill Av.	e/o Euclid Av.	Commercial	75.9	76.9	1.0	No	3.0	No
54	Merrill Av.	w/o Grove Av.	Business Park	76.7	77.5	0.8	No	3.0	No
55	Merrill Av.	e/o Grove Av.	Business Park	76.6	77.6	1.0	No	3.0	No
56	Merrill Av.	e/o Walker Av.	Business Park	77.0	77.7	0.6	No	3.0	No

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold	Threshold Exceeded?
				No Project	With Ph. A	Project Addition			
57	Merrill Av.	w/o Vineyard Av.	Business Park	77.1	77.9	0.8	No	3.0	No
58	Merrill Av.	e/o Vineyard Av.	Business Park	77.2	78.0	0.8	No	3.0	No
59	Limonite	e/o Archibald Av.	Business Park	74.4	74.5	0.1	No	3.0	No
60	Limonite	w/o Sumner Av.	Residential	74.8	74.9	0.1	Yes	1.5	No
61	Limonite	w/o Scholar Wy.	Residential	74.7	74.8	0.1	Yes	1.5	No
62	Limonite	w/o Hamner Av.	Commercial/Residential	74.8	74.9	0.1	Yes	1.5	No
63	Limonite	e/o Hamner Av.	Commercial	75.1	75.2	0.1	No	3.0	No

[1] Sources: Land Use Maps of the City of Chino, Ontario, and Eastvale, and aerial imagery.

[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. Values rounded to the nearest one-tenth.

"n/a" = Roadway segment does not represent a paved and/or fully constructed roadway under the given scenario.

TABLE 7-14: EXISTING (2019) PHASE A+B PROJECT-RELATED TRAFFIC NOISE IMPACTS

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold	Threshold Exceeded?[2]
				No Project	With Ph. A+B	Project Addition			
1	Euclid Av.	n/o SR-60	Commercial/Residential	80.7	80.7	0.0	Yes	1.5	No
2	Euclid Av.	n/o SR-60 EB Ramps	Freeway	81.5	82.1	0.6	No	3.0	No
3	Euclid Av.	n/o Walnut Av.	Commercial	81.6	82.2	0.6	No	3.0	No
4	Euclid Av.	n/o Riverside Dr.	Commercial/Residential	81.3	81.9	0.6	Yes	1.5	No
5	Euclid Av.	n/o Chino Av.	Commercial/Residential	80.8	81.5	0.7	Yes	1.5	No
6	Euclid Av.	n/o Schaefer Av.	Residential	81.1	81.8	0.6	Yes	1.5	No
7	Euclid Av.	n/o Edison Av.	Office	81.4	82.0	0.6	No	3.0	No
8	Euclid Av.	n/o Eucalyptus Av.	Industrial	81.0	81.6	0.6	No	3.0	No
9	Euclid Av.	n/o Merrill Av.	Commercial/Office	82.8	83.4	0.6	No	3.0	No
10	Euclid Av.	n/o Kimball Av.	Open Space/Public	83.0	83.4	0.4	Yes	1.5	No
11	Euclid Av.	n/o Bickmore Av.	Commercial/Industrial	81.1	81.7	0.6	No	3.0	No
12	Euclid Av.	n/o Pine Av.	Commercial/Industrial	81.0	81.6	0.6	No	3.0	No
13	Euclid Av.	s/o Pine Av.	Open Space	83.6	84.0	0.4	Yes	1.5	No
14	Grove Av.	n/o SR-60	Commercial	79.6	79.6	0.0	No	3.0	No
15	Grove Av.	n/o SR-60 EB Ramps	Freeway	78.7	78.8	0.0	No	3.0	No
16	Grove Av.	n/o Walnut Av.	Commercial/Residential	77.8	77.8	0.0	Yes	1.5	No
17	Grove Av.	n/o Riverside Dr.	Residential	76.2	76.3	0.0	Yes	1.5	No
18	Grove Av.	n/o Chino Av.	Residential	76.3	76.4	0.1	Yes	1.5	No
19	Grove Av.	n/o Schaefer Av.	Residential	75.8	75.9	0.1	Yes	1.5	No
20	Grove Av.	n/o Edison Av.	Commercial/Residential	75.3	75.4	0.1	Yes	1.5	No
21	Grove Av.	n/o Eucalyptus Av.	Commercial/Residential	75.2	75.6	0.4	Yes	1.5	No
22	Grove Av.	n/o Street A	Commercial/Residential	73.7	74.4	0.7	Yes	1.5	No
23	Grove Av.	n/o Merrill Av.	Business Park	73.7	74.4	0.7	No	3.0	No
24	Archibald Av.	n/o SR-60	Commercial	79.5	79.5	0.0	No	3.0	No
25	Archibald Av.	n/o SR-60 EB Ramps	Freeway	79.6	79.7	0.0	No	3.0	No
26	Archibald Av.	n/o Riverside Dr.	Commercial/Residential	79.6	80.1	0.5	Yes	1.5	No
27	Archibald Av.	n/o Chino Av.	Commercial/Residential	79.2	79.7	0.5	Yes	1.5	No

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold	Threshold Exceeded?[2]
				No Project	With Ph. A+B	Project Addition			
28	Archibald Av.	n/o Schaefer Av.	Residential	79.1	79.7	0.7	Yes	1.5	No
29	Archibald Av.	n/o Edison Av.	Residential	79.1	79.7	0.7	Yes	1.5	No
30	Archibald Av.	n/o Eucalyptus Av.	Commercial/Residential	80.0	80.9	0.9	Yes	1.5	No
31	Archibald Av.	n/o Merrill Av.	Commercial/Residential	80.0	80.9	0.9	Yes	1.5	No
32	Archibald Av.	n/o Limonite Av.	Business Park/Residential	80.1	80.4	0.3	Yes	1.5	No
33	Archibald Av.	n/o Schleisman Rd.	Residential	74.5	74.5	0.0	Yes	1.5	No
34	Archibald Av.	s/o Schleisman Rd.	Residential	73.9	74.0	0.0	Yes	1.5	No
35	Edison Av.	w/o Pipeline Av.	Commercial	79.3	79.3	0.0	No	3.0	No
36	Edison Av.	w/o Ramona Av.	Commercial/Industrial	78.6	78.6	0.0	No	3.0	No
37	Edison Av.	w/o Central Av.	Industrial	77.7	77.7	0.0	No	3.0	No
38	Edison Av.	w/o Mountain Av.	Industrial/Open Space	78.3	78.4	0.0	Yes	1.5	No
39	Edison Av.	w/o San Antonio Av.	Residential/Open Space	77.6	77.6	0.1	Yes	1.5	No
40	Edison Av.	w/o Euclid Av.	Commercial/Business Park	76.6	76.7	0.1	No	3.0	No
41	Edison Av.	e/o Euclid Av.	Mixed-Use/Residential	77.7	77.8	0.2	Yes	1.5	No
42	Edison Av.	w/o Grove Av.	Commercial/Residential	76.9	77.1	0.2	Yes	1.5	No
43	Edison Av.	w/o Walker Av.	Commercial/Residential	78.1	78.1	0.0	Yes	1.5	No
44	Edison Av.	w/o Archibald Av.	Residential	78.2	78.5	0.2	Yes	1.5	No
45	Edison Av.	w/o Haven Av.	School/Residential	80.0	80.8	0.7	Yes	1.5	No
46	Edison Av.	e/o Haven Av.	Mixed-Use/Residential	80.2	80.9	0.7	Yes	1.5	No
47	Ontario Ranch Rd.	e/o Hamner Av.	Commercial	77.7	78.1	0.5	No	3.0	No
48	Eucalyptus Av.	w/o Bon View Av.	Residential	69.6	69.8	0.1	Yes	1.5	No
49	Eucalyptus Av.	w/o Walker Av.	Business Park/Residential	66.2	66.2	0.0	Yes	1.5	No
50	Eucalyptus Av.	e/o Walker Av.	Business Park/Residential	66.5	66.5	0.0	Yes	1.5	No
51	Eucalyptus Av.	w/o Vineyard Av.	Mixed-Use	66.5	66.5	0.0	Yes	1.5	No
52	Eucalyptus Av.	e/o Vineyard Av.	Mixed-Use	66.5	66.5	0.0	Yes	1.5	No
53	Merrill Av.	e/o Euclid Av.	Commercial	75.9	78.4	2.5	No	3.0	No
54	Merrill Av.	w/o Grove Av.	Business Park	76.7	78.9	2.2	No	3.0	No
55	Merrill Av.	e/o Grove Av.	Business Park	76.6	78.8	2.2	No	3.0	No
56	Merrill Av.	e/o Walker Av.	Business Park	77.0	78.9	1.9	No	3.0	No

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold	Threshold Exceeded?[2]
				No Project	With Ph. A+B	Project Addition			
57	Merrill Av.	w/o Vineyard Av.	Business Park	77.1	78.9	1.8	No	3.0	No
58	Merrill Av.	e/o Vineyard Av.	Business Park	77.2	79.3	2.0	No	3.0	No
59	Limonite	e/o Archibald Av.	Business Park	74.4	74.8	0.4	No	3.0	No
60	Limonite	w/o Sumner Av.	Residential	74.8	75.2	0.4	Yes	1.5	No
61	Limonite	w/o Scholar Wy.	Residential	74.7	75.1	0.4	Yes	1.5	No
62	Limonite	w/o Hamner Av.	Commercial/Residential	74.8	75.2	0.4	Yes	1.5	No
63	Limonite	e/o Hamner Av.	Commercial	75.1	75.5	0.4	No	3.0	No

[1] Sources: Land Use Maps of the City of Chino, Ontario, and Eastvale, and aerial imagery.

[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. Values rounded to the nearest one-tenth.

"n/a" = Roadway segment does not represent a paved and/or fully constructed roadway under the given scenario.

TABLE 7-15: EXISTING (2019) PHASE A+B+C PROJECT-RELATED TRAFFIC NOISE IMPACTS

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold	Threshold Exceeded?[2]
				No Project	With Ph. A+B+C	Project Addition			
1	Euclid Av.	n/o SR-60	Commercial/Residential	80.7	80.7	0.0	Yes	1.5	No
2	Euclid Av.	n/o SR-60 EB Ramps	Freeway	81.5	82.3	0.7	No	3.0	No
3	Euclid Av.	n/o Walnut Av.	Commercial	81.6	82.3	0.7	No	3.0	No
4	Euclid Av.	n/o Riverside Dr.	Commercial/Residential	81.3	82.1	0.8	Yes	1.5	No
5	Euclid Av.	n/o Chino Av.	Commercial/Residential	80.8	81.6	0.9	Yes	1.5	No
6	Euclid Av.	n/o Schaefer Av.	Residential	81.1	81.9	0.8	Yes	1.5	No
7	Euclid Av.	n/o Edison Av.	Office	81.4	82.1	0.8	No	3.0	No
8	Euclid Av.	n/o Eucalyptus Av.	Industrial	81.0	81.8	0.8	No	3.0	No
9	Euclid Av.	n/o Merrill Av.	Commercial/Office	82.8	83.5	0.7	No	3.0	No
10	Euclid Av.	n/o Kimball Av.	Open Space/Public	83.0	83.5	0.5	Yes	1.5	No
11	Euclid Av.	n/o Bickmore Av.	Commercial/Industrial	81.1	81.9	0.8	No	3.0	No
12	Euclid Av.	n/o Pine Av.	Commercial/Industrial	81.0	81.8	0.8	No	3.0	No
13	Euclid Av.	s/o Pine Av.	Open Space	83.6	84.1	0.4	Yes	1.5	No
14	Grove Av.	n/o SR-60	Commercial	79.6	79.6	0.0	No	3.0	No
15	Grove Av.	n/o SR-60 EB Ramps	Freeway	78.7	78.8	0.0	No	3.0	No
16	Grove Av.	n/o Walnut Av.	Commercial/Residential	77.8	77.8	0.0	Yes	1.5	No
17	Grove Av.	n/o Riverside Dr.	Residential	76.2	76.3	0.1	Yes	1.5	No
18	Grove Av.	n/o Chino Av.	Residential	76.3	76.4	0.1	Yes	1.5	No
19	Grove Av.	n/o Schaefer Av.	Residential	75.8	76.0	0.1	Yes	1.5	No
20	Grove Av.	n/o Edison Av.	Commercial/Residential	75.3	75.5	0.2	Yes	1.5	No
21	Grove Av.	n/o Eucalyptus Av.	Commercial/Residential	75.2	75.7	0.5	Yes	1.5	No
22	Grove Av.	n/o Street A	Commercial/Residential	73.7	73.9	0.2	Yes	1.5	No
23	Grove Av.	n/o Merrill Av.	Business Park	73.7	73.9	0.1	No	3.0	No
24	Archibald Av.	n/o SR-60	Commercial	79.5	79.5	0.0	No	3.0	No
25	Archibald Av.	n/o SR-60 EB Ramps	Freeway	79.6	79.7	0.0	No	3.0	No
26	Archibald Av.	n/o Riverside Dr.	Commercial/Residential	79.6	80.2	0.6	Yes	1.5	No
27	Archibald Av.	n/o Chino Av.	Commercial/Residential	79.2	79.8	0.7	Yes	1.5	No

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold	Threshold Exceeded?[2]
				No Project	With Ph. A+B+C	Project Addition			
28	Archibald Av.	n/o Schaefer Av.	Residential	79.1	79.9	0.8	Yes	1.5	No
29	Archibald Av.	n/o Edison Av.	Residential	79.1	79.9	0.8	Yes	1.5	No
30	Archibald Av.	n/o Eucalyptus Av.	Commercial/Residential	80.0	81.1	1.2	Yes	1.5	No
31	Archibald Av.	n/o Merrill Av.	Commercial/Residential	80.0	81.1	1.2	Yes	1.5	No
32	Archibald Av.	n/o Limonite Av.	Business Park/Residential	80.1	80.5	0.4	Yes	1.5	No
33	Archibald Av.	n/o Schleisman Rd.	Residential	74.5	74.6	0.0	Yes	1.5	No
34	Archibald Av.	s/o Schleisman Rd.	Residential	73.9	74.0	0.0	Yes	1.5	No
35	Edison Av.	w/o Pipeline Av.	Commercial	79.3	79.3	0.0	No	3.0	No
36	Edison Av.	w/o Ramona Av.	Commercial/Industrial	78.6	78.6	0.0	No	3.0	No
37	Edison Av.	w/o Central Av.	Industrial	77.7	77.7	0.1	No	3.0	No
38	Edison Av.	w/o Mountain Av.	Industrial/Open Space	78.3	78.4	0.1	Yes	1.5	No
39	Edison Av.	w/o San Antonio Av.	Residential/Open Space	77.6	77.6	0.1	Yes	1.5	No
40	Edison Av.	w/o Euclid Av.	Commercial/Business Park	76.6	76.7	0.1	No	3.0	No
41	Edison Av.	e/o Euclid Av.	Mixed-Use/Residential	77.7	77.9	0.2	Yes	1.5	No
42	Edison Av.	w/o Grove Av.	Commercial/Residential	76.9	77.2	0.3	Yes	1.5	No
43	Edison Av.	w/o Walker Av.	Commercial/Residential	78.1	78.1	0.0	Yes	1.5	No
44	Edison Av.	w/o Archibald Av.	Residential	78.2	78.6	0.3	Yes	1.5	No
45	Edison Av.	w/o Haven Av.	School/Residential	80.0	80.9	0.9	Yes	1.5	No
46	Edison Av.	e/o Haven Av.	Mixed-Use/Residential	80.2	81.1	0.9	Yes	1.5	No
47	Ontario Ranch Rd.	e/o Hamner Av.	Commercial	77.7	78.3	0.6	No	3.0	No
48	Eucalyptus Av.	w/o Bon View Av.	Residential	69.6	69.8	0.2	Yes	1.5	No
49	Eucalyptus Av.	w/o Walker Av.	Business Park/Residential	66.2	67.8	1.7	Yes	1.5	Yes
50	Eucalyptus Av.	e/o Walker Av.	Business Park/Residential	66.5	68.3	1.7	Yes	1.5	Yes
51	Eucalyptus Av.	w/o Vineyard Av.	Mixed-Use	66.5	67.7	1.1	Yes	1.5	No
52	Eucalyptus Av.	e/o Vineyard Av.	Mixed-Use	66.5	66.9	0.3	Yes	1.5	No
53	Merrill Av.	e/o Euclid Av.	Commercial	75.9	78.9	3.0	No	3.0	No
54	Merrill Av.	w/o Grove Av.	Business Park	76.7	79.3	2.6	No	3.0	No
55	Merrill Av.	e/o Grove Av.	Business Park	76.6	78.9	2.3	No	3.0	No
56	Merrill Av.	e/o Walker Av.	Business Park	77.0	79.1	2.1	No	3.0	No

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold	Threshold Exceeded?[2]
				No Project	With Ph. A+B+C	Project Addition			
57	Merrill Av.	w/o Vineyard Av.	Business Park	77.1	79.2	2.1	No	3.0	No
58	Merrill Av.	e/o Vineyard Av.	Business Park	77.2	79.7	2.4	No	3.0	No
59	Limonite	e/o Archibald Av.	Business Park	74.4	74.9	0.5	No	3.0	No
60	Limonite	w/o Sumner Av.	Residential	74.8	75.3	0.5	Yes	1.5	No
61	Limonite	w/o Scholar Wy.	Residential	74.7	75.2	0.5	Yes	1.5	No
62	Limonite	w/o Hamner Av.	Commercial/Residential	74.8	75.3	0.5	Yes	1.5	No
63	Limonite	e/o Hamner Av.	Commercial	75.1	75.6	0.5	No	3.0	No

[1] Sources: Land Use Maps of the City of Chino, Ontario, and Eastvale, and aerial imagery.

[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. Values rounded to the nearest one-tenth.

"n/a" = Roadway segment does not represent a paved and/or fully constructed roadway under the given scenario.

TABLE 7-16: OPENING YEAR 2022 PHASE A PROJECT-RELATED TRAFFIC NOISE IMPACTS

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold	Threshold Exceeded?[2]
				No Project	With Ph. A	Project Addition			
1	Euclid Av.	n/o SR-60	Commercial/Residential	80.9	80.9	0.0	Yes	1.5	No
2	Euclid Av.	n/o SR-60 EB Ramps	Freeway	82.0	82.1	0.2	No	3.0	No
3	Euclid Av.	n/o Walnut Av.	Commercial	82.1	82.3	0.2	No	3.0	No
4	Euclid Av.	n/o Riverside Dr.	Commercial/Residential	81.9	82.0	0.2	Yes	1.5	No
5	Euclid Av.	n/o Chino Av.	Commercial/Residential	81.4	81.6	0.2	Yes	1.5	No
6	Euclid Av.	n/o Schaefer Av.	Residential	81.7	81.9	0.2	Yes	1.5	No
7	Euclid Av.	n/o Edison Av.	Office	81.9	82.1	0.2	No	3.0	No
8	Euclid Av.	n/o Eucalyptus Av.	Industrial	81.6	81.8	0.2	No	3.0	No
9	Euclid Av.	n/o Merrill Av.	Commercial/Office	83.4	83.6	0.2	No	3.0	No
10	Euclid Av.	n/o Kimball Av.	Open Space/Public	83.6	83.7	0.1	Yes	1.5	No
11	Euclid Av.	n/o Bickmore Av.	Commercial/Industrial	81.8	82.0	0.2	No	3.0	No
12	Euclid Av.	n/o Pine Av.	Commercial/Industrial	81.7	81.9	0.2	No	3.0	No
13	Euclid Av.	s/o Pine Av.	Open Space	84.1	84.2	0.1	Yes	1.5	No
14	Grove Av.	n/o SR-60	Commercial	79.9	79.9	0.0	No	3.0	No
15	Grove Av.	n/o SR-60 EB Ramps	Freeway	79.0	79.0	0.0	No	3.0	No
16	Grove Av.	n/o Walnut Av.	Commercial/Residential	78.1	78.1	0.0	Yes	1.5	No
17	Grove Av.	n/o Riverside Dr.	Residential	76.6	76.6	0.0	Yes	1.5	No
18	Grove Av.	n/o Chino Av.	Residential	76.6	76.7	0.0	Yes	1.5	No
19	Grove Av.	n/o Schaefer Av.	Residential	76.2	76.2	0.0	Yes	1.5	No
20	Grove Av.	n/o Edison Av.	Commercial/Residential	75.7	75.7	0.0	Yes	1.5	No
21	Grove Av.	n/o Eucalyptus Av.	Commercial/Residential	76.0	76.1	0.1	Yes	1.5	No
22	Grove Av.	n/o Street A	Commercial/Residential	74.2	74.4	0.2	Yes	1.5	No
23	Grove Av.	n/o Merrill Av.	Business Park	74.2	74.4	0.2	No	3.0	No
24	Archibald Av.	n/o SR-60	Commercial	79.8	79.8	0.0	No	3.0	No
25	Archibald Av.	n/o SR-60 EB Ramps	Freeway	81.0	81.0	0.0	No	3.0	No
26	Archibald Av.	n/o Riverside Dr.	Commercial/Residential	79.2	79.4	0.2	Yes	1.5	No
27	Archibald Av.	n/o Chino Av.	Commercial/Residential	79.6	79.8	0.2	Yes	1.5	No

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold	Threshold Exceeded?[2]
				No Project	With Ph. A	Project Addition			
28	Archibald Av.	n/o Schaefer Av.	Residential	79.6	79.8	0.2	Yes	1.5	No
29	Archibald Av.	n/o Edison Av.	Residential	79.6	79.8	0.2	Yes	1.5	No
30	Archibald Av.	n/o Eucalyptus Av.	Commercial/Residential	80.6	80.9	0.3	Yes	1.5	No
31	Archibald Av.	n/o Merrill Av.	Commercial/Residential	80.5	80.8	0.3	Yes	1.5	No
32	Archibald Av.	n/o Limonite Av.	Business Park/Residential	80.6	80.7	0.1	Yes	1.5	No
33	Archibald Av.	n/o Schleisman Rd.	Residential	75.0	75.0	0.0	Yes	1.5	No
34	Archibald Av.	s/o Schleisman Rd.	Residential	74.3	74.3	0.0	Yes	1.5	No
35	Edison Av.	w/o Pipeline Av.	Commercial	79.6	79.6	0.0	No	3.0	No
36	Edison Av.	w/o Ramona Av.	Commercial/Industrial	78.9	78.9	0.0	No	3.0	No
37	Edison Av.	w/o Central Av.	Industrial	78.0	78.0	0.0	No	3.0	No
38	Edison Av.	w/o Mountain Av.	Industrial/Open Space	78.7	78.7	0.0	Yes	1.5	No
39	Edison Av.	w/o San Antonio Av.	Residential/Open Space	78.0	78.0	0.0	Yes	1.5	No
40	Edison Av.	w/o Euclid Av.	Commercial/Business Park	77.1	77.1	0.0	No	3.0	No
41	Edison Av.	e/o Euclid Av.	Mixed-Use/Residential	78.1	78.1	0.1	Yes	1.5	No
42	Edison Av.	w/o Grove Av.	Commercial/Residential	77.3	77.4	0.1	Yes	1.5	No
43	Edison Av.	w/o Walker Av.	Commercial/Residential	78.5	78.5	0.0	Yes	1.5	No
44	Edison Av.	w/o Archibald Av.	Residential	78.6	78.7	0.1	Yes	1.5	No
45	Edison Av.	w/o Haven Av.	School/Residential	80.5	80.7	0.2	Yes	1.5	No
46	Edison Av.	e/o Haven Av.	Mixed-Use/Residential	80.6	80.9	0.2	Yes	1.5	No
47	Ontario Ranch Rd.	e/o Hamner Av.	Commercial	78.0	78.2	0.1	No	3.0	No
48	Eucalyptus Av.	w/o Bon View Av.	Residential	70.4	70.4	0.0	Yes	1.5	No
49	Eucalyptus Av.	w/o Walker Av.	Business Park/Residential	67.1	67.1	0.0	Yes	1.5	No
50	Eucalyptus Av.	e/o Walker Av.	Business Park/Residential	67.4	67.4	0.0	Yes	1.5	No
51	Eucalyptus Av.	w/o Vineyard Av.	Mixed-Use	67.4	67.4	0.0	Yes	1.5	No
52	Eucalyptus Av.	e/o Vineyard Av.	Mixed-Use	67.4	67.4	0.0	Yes	1.5	No
53	Merrill Av.	e/o Euclid Av.	Commercial	76.7	77.5	0.8	No	3.0	No
54	Merrill Av.	w/o Grove Av.	Business Park	77.3	78.1	0.7	No	3.0	No
55	Merrill Av.	e/o Grove Av.	Business Park	77.3	78.2	0.9	No	3.0	No
56	Merrill Av.	e/o Walker Av.	Business Park	77.7	78.3	0.6	No	3.0	No

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold	Threshold Exceeded?[2]
				No Project	With Ph. A	Project Addition			
57	Merrill Av.	w/o Vineyard Av.	Business Park	77.7	78.4	0.7	No	3.0	No
58	Merrill Av.	e/o Vineyard Av.	Business Park	78.0	78.6	0.7	No	3.0	No
59	Limonite	e/o Archibald Av.	Business Park	75.1	75.2	0.1	No	3.0	No
60	Limonite	w/o Sumner Av.	Residential	75.4	75.5	0.1	Yes	1.5	No
61	Limonite	w/o Scholar Wy.	Residential	75.3	75.5	0.1	Yes	1.5	No
62	Limonite	w/o Hamner Av.	Commercial/Residential	75.5	75.6	0.1	Yes	1.5	No
63	Limonite	e/o Hamner Av.	Commercial	75.7	75.8	0.1	No	3.0	No

[1] Sources: Land Use Maps of the City of Chino, Ontario, and Eastvale, and aerial imagery.

[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. Values rounded to the nearest one-tenth.

"n/a" = Roadway segment does not represent a paved and/or fully constructed roadway under the given scenario.

TABLE 7-17: OPENING YEAR 2025 PHASE A+B PROJECT-RELATED TRAFFIC NOISE IMPACTS

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold	Threshold Exceeded?[2]
				No Project	With Ph. A+B	Project Addition			
1	Euclid Av.	n/o SR-60	Commercial/Residential	81.2	81.2	0.0	Yes	1.5	No
2	Euclid Av.	n/o SR-60 EB Ramps	Freeway	82.3	82.8	0.5	No	3.0	No
3	Euclid Av.	n/o Walnut Av.	Commercial	82.5	83.0	0.5	No	3.0	No
4	Euclid Av.	n/o Riverside Dr.	Commercial/Residential	82.3	82.8	0.5	Yes	1.5	No
5	Euclid Av.	n/o Chino Av.	Commercial/Residential	81.9	82.4	0.5	Yes	1.5	No
6	Euclid Av.	n/o Schaefer Av.	Residential	82.2	82.7	0.5	Yes	1.5	No
7	Euclid Av.	n/o Edison Av.	Office	82.4	82.9	0.5	No	3.0	No
8	Euclid Av.	n/o Eucalyptus Av.	Industrial	82.1	82.6	0.5	No	3.0	No
9	Euclid Av.	n/o Merrill Av.	Commercial/Office	83.8	84.3	0.5	No	3.0	No
10	Euclid Av.	n/o Kimball Av.	Open Space/Public	84.0	84.3	0.3	Yes	1.5	No
11	Euclid Av.	n/o Bickmore Av.	Commercial/Industrial	82.4	82.8	0.5	No	3.0	No
12	Euclid Av.	n/o Pine Av.	Commercial/Industrial	82.2	82.7	0.5	No	3.0	No
13	Euclid Av.	s/o Pine Av.	Open Space	84.5	84.8	0.3	Yes	1.5	No
14	Grove Av.	n/o SR-60	Commercial	80.1	80.1	0.0	No	3.0	No
15	Grove Av.	n/o SR-60 EB Ramps	Freeway	79.3	79.3	0.0	No	3.0	No
16	Grove Av.	n/o Walnut Av.	Commercial/Residential	78.4	78.4	0.0	Yes	1.5	No
17	Grove Av.	n/o Riverside Dr.	Residential	76.9	76.9	0.0	Yes	1.5	No
18	Grove Av.	n/o Chino Av.	Residential	77.0	77.0	0.1	Yes	1.5	No
19	Grove Av.	n/o Schaefer Av.	Residential	76.6	76.6	0.1	Yes	1.5	No
20	Grove Av.	n/o Edison Av.	Commercial/Residential	76.0	76.2	0.1	Yes	1.5	No
21	Grove Av.	n/o Eucalyptus Av.	Commercial/Residential	76.5	76.8	0.3	Yes	1.5	No
22	Grove Av.	n/o Street A	Commercial/Residential	74.6	75.2	0.6	Yes	1.5	No
23	Grove Av.	n/o Merrill Av.	Business Park	74.6	75.2	0.6	No	3.0	No
24	Archibald Av.	n/o SR-60	Commercial	80.1	80.1	0.0	No	3.0	No
25	Archibald Av.	n/o SR-60 EB Ramps	Freeway	80.3	80.3	0.0	No	3.0	No
26	Archibald Av.	n/o Riverside Dr.	Commercial/Residential	79.6	80.1	0.5	Yes	1.5	No
27	Archibald Av.	n/o Chino Av.	Commercial/Residential	80.0	80.5	0.5	Yes	1.5	No

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold	Threshold Exceeded?[2]
				No Project	With Ph. A+B	Project Addition			
28	Archibald Av.	n/o Schaefer Av.	Residential	80.0	80.5	0.5	Yes	1.5	No
29	Archibald Av.	n/o Edison Av.	Residential	80.0	80.5	0.5	Yes	1.5	No
30	Archibald Av.	n/o Eucalyptus Av.	Commercial/Residential	81.0	81.8	0.8	Yes	1.5	No
31	Archibald Av.	n/o Merrill Av.	Commercial/Residential	81.0	81.8	0.8	Yes	1.5	No
32	Archibald Av.	n/o Limonite Av.	Business Park/Residential	81.0	81.3	0.3	Yes	1.5	No
33	Archibald Av.	n/o Schleisman Rd.	Residential	75.4	75.4	0.0	Yes	1.5	No
34	Archibald Av.	s/o Schleisman Rd.	Residential	74.6	74.6	0.0	Yes	1.5	No
35	Edison Av.	w/o Pipeline Av.	Commercial	79.8	79.9	0.0	No	3.0	No
36	Edison Av.	w/o Ramona Av.	Commercial/Industrial	79.2	79.2	0.0	No	3.0	No
37	Edison Av.	w/o Central Av.	Industrial	78.3	78.4	0.0	No	3.0	No
38	Edison Av.	w/o Mountain Av.	Industrial/Open Space	79.0	79.0	0.0	Yes	1.5	No
39	Edison Av.	w/o San Antonio Av.	Residential/Open Space	78.3	78.3	0.0	Yes	1.5	No
40	Edison Av.	w/o Euclid Av.	Commercial/Business Park	77.4	77.5	0.1	No	3.0	No
41	Edison Av.	e/o Euclid Av.	Mixed-Use/Residential	78.5	78.6	0.2	Yes	1.5	No
42	Edison Av.	w/o Grove Av.	Commercial/Residential	77.7	77.9	0.2	Yes	1.5	No
43	Edison Av.	w/o Walker Av.	Commercial/Residential	78.8	78.8	0.0	Yes	1.5	No
44	Edison Av.	w/o Archibald Av.	Residential	78.9	79.1	0.2	Yes	1.5	No
45	Edison Av.	w/o Haven Av.	School/Residential	80.9	81.5	0.6	Yes	1.5	No
46	Edison Av.	e/o Haven Av.	Mixed-Use/Residential	81.0	81.6	0.6	Yes	1.5	No
47	Ontario Ranch Rd.	e/o Hamner Av.	Commercial	78.4	78.8	0.4	No	3.0	No
48	Eucalyptus Av.	w/o Bon View Av.	Residential	70.9	71.0	0.1	Yes	1.5	No
49	Eucalyptus Av.	w/o Walker Av.	Business Park/Residential	67.8	67.8	0.0	Yes	1.5	No
50	Eucalyptus Av.	e/o Walker Av.	Business Park/Residential	68.0	68.0	0.0	Yes	1.5	No
51	Eucalyptus Av.	w/o Vineyard Av.	Mixed-Use	68.0	68.0	0.0	Yes	1.5	No
52	Eucalyptus Av.	e/o Vineyard Av.	Mixed-Use	68.0	68.0	0.0	Yes	1.5	No
53	Merrill Av.	e/o Euclid Av.	Commercial	77.2	79.2	2.0	No	3.0	No
54	Merrill Av.	w/o Grove Av.	Business Park	77.8	79.6	1.8	No	3.0	No
55	Merrill Av.	e/o Grove Av.	Business Park	77.9	79.6	1.8	No	3.0	No
56	Merrill Av.	e/o Walker Av.	Business Park	78.3	79.8	1.5	No	3.0	No

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold	Threshold Exceeded?[2]
				No Project	With Ph. A+B	Project Addition			
57	Merrill Av.	w/o Vineyard Av.	Business Park	78.1	79.6	1.5	No	3.0	No
58	Merrill Av.	e/o Vineyard Av.	Business Park	78.5	80.1	1.6	No	3.0	No
59	Limonite	e/o Archibald Av.	Business Park	75.6	75.9	0.3	No	3.0	No
60	Limonite	w/o Sumner Av.	Residential	75.9	76.2	0.3	Yes	1.5	No
61	Limonite	w/o Scholar Wy.	Residential	75.8	76.2	0.3	Yes	1.5	No
62	Limonite	w/o Hamner Av.	Commercial/Residential	76.0	76.3	0.3	Yes	1.5	No
63	Limonite	e/o Hamner Av.	Commercial	76.2	76.4	0.3	No	3.0	No

[1] Sources: Land Use Maps of the City of Chino, Ontario, and Eastvale, and aerial imagery.

[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. Values rounded to the nearest one-tenth.

"n/a" = Roadway segment does not represent a paved and/or fully constructed roadway under the given scenario.

TABLE 7-18: OPENING YEAR 2026 PHASE A+B+C PROJECT-RELATED TRAFFIC NOISE IMPACTS

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold	Threshold Exceeded?[2]
				No Project	With Ph. A+B	Project Addition			
1	Euclid Av.	n/o SR-60	Commercial/Residential	81.3	81.3	0.0	Yes	1.5	No
2	Euclid Av.	n/o SR-60 EB Ramps	Freeway	82.4	83.0	0.6	No	3.0	No
3	Euclid Av.	n/o Walnut Av.	Commercial	82.7	83.2	0.6	No	3.0	No
4	Euclid Av.	n/o Riverside Dr.	Commercial/Residential	82.4	83.0	0.6	Yes	1.5	No
5	Euclid Av.	n/o Chino Av.	Commercial/Residential	82.0	82.7	0.7	Yes	1.5	No
6	Euclid Av.	n/o Schaefer Av.	Residential	82.3	82.9	0.6	Yes	1.5	No
7	Euclid Av.	n/o Edison Av.	Office	82.5	83.1	0.6	No	3.0	No
8	Euclid Av.	n/o Eucalyptus Av.	Industrial	82.3	82.9	0.6	No	3.0	No
9	Euclid Av.	n/o Merrill Av.	Commercial/Office	84.0	84.5	0.6	No	3.0	No
10	Euclid Av.	n/o Kimball Av.	Open Space/Public	84.1	84.5	0.4	Yes	1.5	No
11	Euclid Av.	n/o Bickmore Av.	Commercial/Industrial	82.5	83.1	0.6	No	3.0	No
12	Euclid Av.	n/o Pine Av.	Commercial/Industrial	82.4	83.0	0.6	No	3.0	No
13	Euclid Av.	s/o Pine Av.	Open Space	84.6	85.0	0.4	Yes	1.5	No
14	Grove Av.	n/o SR-60	Commercial	79.4	79.4	0.0	No	3.0	No
15	Grove Av.	n/o SR-60 EB Ramps	Freeway	79.4	79.4	0.0	No	3.0	No
16	Grove Av.	n/o Walnut Av.	Commercial/Residential	78.4	78.5	0.0	Yes	1.5	No
17	Grove Av.	n/o Riverside Dr.	Residential	77.0	77.0	0.1	Yes	1.5	No
18	Grove Av.	n/o Chino Av.	Residential	77.1	77.2	0.1	Yes	1.5	No
19	Grove Av.	n/o Schaefer Av.	Residential	76.7	76.8	0.1	Yes	1.5	No
20	Grove Av.	n/o Edison Av.	Commercial/Residential	76.2	76.3	0.1	Yes	1.5	No
21	Grove Av.	n/o Eucalyptus Av.	Commercial/Residential	76.7	77.1	0.4	Yes	1.5	No
22	Grove Av.	n/o Street A	Commercial/Residential	74.7	74.9	0.1	Yes	1.5	No
23	Grove Av.	n/o Merrill Av.	Business Park	74.7	74.9	0.1	No	3.0	No
24	Archibald Av.	n/o SR-60	Commercial	80.4	80.4	0.0	No	3.0	No
25	Archibald Av.	n/o SR-60 EB Ramps	Freeway	80.4	80.4	0.0	No	3.0	No
26	Archibald Av.	n/o Riverside Dr.	Commercial/Residential	79.7	80.3	0.6	Yes	1.5	No
27	Archibald Av.	n/o Chino Av.	Commercial/Residential	80.1	80.7	0.6	Yes	1.5	No

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold	Threshold Exceeded?[2]
				No Project	With Ph. A+B	Project Addition			
28	Archibald Av.	n/o Schaefer Av.	Residential	80.1	80.8	0.7	Yes	1.5	No
29	Archibald Av.	n/o Edison Av.	Residential	80.1	80.8	0.7	Yes	1.5	No
30	Archibald Av.	n/o Eucalyptus Av.	Commercial/Residential	81.2	82.1	0.9	Yes	1.5	No
31	Archibald Av.	n/o Merrill Av.	Commercial/Residential	81.2	82.1	0.9	Yes	1.5	No
32	Archibald Av.	n/o Limonite Av.	Business Park/Residential	81.2	81.5	0.3	Yes	1.5	No
33	Archibald Av.	n/o Schleisman Rd.	Residential	75.5	75.5	0.0	Yes	1.5	No
34	Archibald Av.	s/o Schleisman Rd.	Residential	74.7	74.7	0.0	Yes	1.5	No
35	Edison Av.	w/o Pipeline Av.	Commercial	79.9	80.0	0.0	No	3.0	No
36	Edison Av.	w/o Ramona Av.	Commercial/Industrial	79.3	79.3	0.0	No	3.0	No
37	Edison Av.	w/o Central Av.	Industrial	78.4	78.5	0.0	No	3.0	No
38	Edison Av.	w/o Mountain Av.	Industrial/Open Space	79.1	79.1	0.0	Yes	1.5	No
39	Edison Av.	w/o San Antonio Av.	Residential/Open Space	78.4	78.4	0.1	Yes	1.5	No
40	Edison Av.	w/o Euclid Av.	Commercial/Business Park	77.5	77.6	0.1	No	3.0	No
41	Edison Av.	e/o Euclid Av.	Mixed-Use/Residential	78.6	78.8	0.2	Yes	1.5	No
42	Edison Av.	w/o Grove Av.	Commercial/Residential	77.8	78.1	0.2	Yes	1.5	No
43	Edison Av.	w/o Walker Av.	Commercial/Residential	78.9	78.9	0.0	Yes	1.5	No
44	Edison Av.	w/o Archibald Av.	Residential	79.0	79.3	0.3	Yes	1.5	No
45	Edison Av.	w/o Haven Av.	School/Residential	81.0	81.7	0.7	Yes	1.5	No
46	Edison Av.	e/o Haven Av.	Mixed-Use/Residential	81.1	81.8	0.7	Yes	1.5	No
47	Ontario Ranch Rd.	e/o Hamner Av.	Commercial	78.5	79.0	0.5	No	3.0	No
48	Eucalyptus Av.	w/o Bon View Av.	Residential	71.1	71.2	0.1	Yes	1.5	No
49	Eucalyptus Av.	w/o Walker Av.	Business Park/Residential	68.0	69.1	1.2	Yes	1.5	No
50	Eucalyptus Av.	e/o Walker Av.	Business Park/Residential	68.2	69.5	1.2	Yes	1.5	No
51	Eucalyptus Av.	w/o Vineyard Av.	Mixed-Use	68.2	69.0	0.8	Yes	1.5	No
52	Eucalyptus Av.	e/o Vineyard Av.	Mixed-Use	68.2	68.4	0.2	Yes	1.5	No
53	Merrill Av.	e/o Euclid Av.	Commercial	77.4	79.7	2.3	No	3.0	No
54	Merrill Av.	w/o Grove Av.	Business Park	78.0	80.1	2.1	No	3.0	No
55	Merrill Av.	e/o Grove Av.	Business Park	78.0	79.8	1.8	No	3.0	No
56	Merrill Av.	e/o Walker Av.	Business Park	78.4	80.1	1.6	No	3.0	No

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold	Threshold Exceeded?[2]
				No Project	With Ph. A+B	Project Addition			
57	Merrill Av.	w/o Vineyard Av.	Business Park	78.3	80.0	1.7	No	3.0	No
58	Merrill Av.	e/o Vineyard Av.	Business Park	78.7	80.6	1.9	No	3.0	No
59	Limonite	e/o Archibald Av.	Business Park	75.8	76.2	0.4	No	3.0	No
60	Limonite	w/o Sumner Av.	Residential	76.1	76.5	0.4	Yes	1.5	No
61	Limonite	w/o Scholar Wy.	Residential	76.0	76.4	0.4	Yes	1.5	No
62	Limonite	w/o Hamner Av.	Commercial/Residential	76.1	76.5	0.4	Yes	1.5	No
63	Limonite	e/o Hamner Av.	Commercial	76.3	76.6	0.3	No	3.0	No

[1] Sources: Land Use Maps of the City of Chino, Ontario, and Eastvale, and aerial imagery.

[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. Values rounded to the nearest one-tenth.

"n/a" = Roadway segment does not represent a paved and/or fully constructed roadway under the given scenario.

TABLE 7-19: HORIZON YEAR 2040 PHASE A+B+C PROJECT-RELATED TRAFFIC NOISE IMPACTS

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold	Threshold Exceeded?[2]
				No Project	With Ph. A+B	Project Addition			
1	Euclid Av.	n/o SR-60	Commercial/Residential	81.7	81.7	0.0	Yes	1.5	No
2	Euclid Av.	n/o SR-60 EB Ramps	Freeway	83.0	83.5	0.5	No	3.0	No
3	Euclid Av.	n/o Walnut Av.	Commercial	83.1	83.6	0.5	No	3.0	No
4	Euclid Av.	n/o Riverside Dr.	Commercial/Residential	82.8	83.4	0.5	Yes	1.5	No
5	Euclid Av.	n/o Chino Av.	Commercial/Residential	82.7	83.3	0.6	Yes	1.5	No
6	Euclid Av.	n/o Schaefer Av.	Residential	82.7	83.3	0.6	Yes	1.5	No
7	Euclid Av.	n/o Edison Av.	Office	83.0	83.5	0.5	No	3.0	No
8	Euclid Av.	n/o Eucalyptus Av.	Industrial	82.7	83.3	0.6	No	3.0	No
9	Euclid Av.	n/o Merrill Av.	Commercial/Office	84.6	85.1	0.5	No	3.0	No
10	Euclid Av.	n/o Kimball Av.	Open Space/Public	84.5	84.9	0.4	Yes	1.5	No
11	Euclid Av.	n/o Bickmore Av.	Commercial/Industrial	83.4	83.8	0.5	No	3.0	No
12	Euclid Av.	n/o Pine Av.	Commercial/Industrial	82.9	83.5	0.5	No	3.0	No
13	Euclid Av.	s/o Pine Av.	Open Space	85.1	85.4	0.3	Yes	1.5	No
14	Grove Av.	n/o SR-60	Commercial	80.6	80.7	0.0	No	3.0	No
15	Grove Av.	n/o SR-60 EB Ramps	Freeway	80.6	80.7	0.0	No	3.0	No
16	Grove Av.	n/o Walnut Av.	Commercial/Residential	79.4	79.4	0.0	Yes	1.5	No
17	Grove Av.	n/o Riverside Dr.	Residential	77.8	77.9	0.0	Yes	1.5	No
18	Grove Av.	n/o Chino Av.	Residential	77.5	77.6	0.1	Yes	1.5	No
19	Grove Av.	n/o Schaefer Av.	Residential	77.1	77.2	0.1	Yes	1.5	No
20	Grove Av.	n/o Edison Av.	Commercial/Residential	76.6	76.7	0.1	Yes	1.5	No
21	Grove Av.	n/o Eucalyptus Av.	Commercial/Residential	77.7	78.0	0.3	Yes	1.5	No
22	Grove Av.	n/o Street A	Commercial/Residential	76.7	76.7	0.1	Yes	1.5	No
23	Grove Av.	n/o Merrill Av.	Business Park	76.7	76.7	0.1	No	3.0	No
24	Archibald Av.	n/o SR-60	Commercial	81.0	81.0	0.0	No	3.0	No
25	Archibald Av.	n/o SR-60 EB Ramps	Freeway	81.0	81.0	0.0	No	3.0	No
26	Archibald Av.	n/o Riverside Dr.	Commercial/Residential	80.2	80.7	0.5	Yes	1.5	No
27	Archibald Av.	n/o Chino Av.	Commercial/Residential	80.5	81.0	0.5	Yes	1.5	No

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold	Threshold Exceeded?[2]
				No Project	With Ph. A+B	Project Addition			
28	Archibald Av.	n/o Schaefer Av.	Residential	81.4	81.9	0.5	Yes	1.5	No
29	Archibald Av.	n/o Edison Av.	Residential	80.7	81.3	0.6	Yes	1.5	No
30	Archibald Av.	n/o Eucalyptus Av.	Commercial/Residential	81.6	82.4	0.8	Yes	1.5	No
31	Archibald Av.	n/o Merrill Av.	Commercial/Residential	81.6	82.4	0.8	Yes	1.5	No
32	Archibald Av.	n/o Limonite Av.	Business Park/Residential	82.4	82.6	0.2	Yes	1.5	No
33	Archibald Av.	n/o Schleisman Rd.	Residential	75.5	75.6	0.0	Yes	1.5	No
34	Archibald Av.	s/o Schleisman Rd.	Residential	74.8	74.8	0.0	Yes	1.5	No
35	Edison Av.	w/o Pipeline Av.	Commercial	80.7	80.8	0.0	No	3.0	No
36	Edison Av.	w/o Ramona Av.	Commercial/Industrial	79.6	79.6	0.0	No	3.0	No
37	Edison Av.	w/o Central Av.	Industrial	78.8	78.9	0.0	No	3.0	No
38	Edison Av.	w/o Mountain Av.	Industrial/Open Space	80.5	80.5	0.0	Yes	1.5	No
39	Edison Av.	w/o San Antonio Av.	Residential/Open Space	79.9	79.9	0.0	Yes	1.5	No
40	Edison Av.	w/o Euclid Av.	Commercial/Business Park	80.0	80.0	0.0	No	3.0	No
41	Edison Av.	e/o Euclid Av.	Mixed-Use/Residential	83.9	84.0	0.1	Yes	1.5	No
42	Edison Av.	w/o Grove Av.	Commercial/Residential	84.3	84.4	0.1	Yes	1.5	No
43	Edison Av.	w/o Walker Av.	Commercial/Residential	83.5	83.5	0.0	Yes	1.5	No
44	Edison Av.	w/o Archibald Av.	Residential	84.0	84.1	0.1	Yes	1.5	No
45	Edison Av.	w/o Haven Av.	School/Residential	82.4	82.9	0.5	Yes	1.5	No
46	Edison Av.	e/o Haven Av.	Mixed-Use/Residential	82.6	83.2	0.5	Yes	1.5	No
47	Ontario Ranch Rd.	e/o Hamner Av.	Commercial	78.9	79.4	0.4	No	3.0	No
48	Eucalyptus Av.	w/o Bon View Av.	Residential	71.5	71.6	0.1	Yes	1.5	No
49	Eucalyptus Av.	w/o Walker Av.	Business Park/Residential	73.6	74.0	0.4	Yes	1.5	No
50	Eucalyptus Av.	e/o Walker Av.	Business Park/Residential	68.2	69.4	1.3	Yes	1.5	No
51	Eucalyptus Av.	w/o Vineyard Av.	Mixed-Use	73.4	73.7	0.3	Yes	1.5	No
52	Eucalyptus Av.	e/o Vineyard Av.	Mixed-Use	73.0	73.0	0.1	Yes	1.5	No
53	Merrill Av.	e/o Euclid Av.	Commercial	77.8	80.0	2.2	No	3.0	No
54	Merrill Av.	w/o Grove Av.	Business Park	78.4	80.3	2.0	No	3.0	No
55	Merrill Av.	e/o Grove Av.	Business Park	78.5	80.1	1.6	No	3.0	No
56	Merrill Av.	e/o Walker Av.	Business Park	78.8	80.3	1.5	No	3.0	No

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold	Threshold Exceeded?[2]
				No Project	With Ph. A+B	Project Addition			
57	Merrill Av.	w/o Vineyard Av.	Business Park	78.7	80.2	1.6	No	3.0	No
58	Merrill Av.	e/o Vineyard Av.	Business Park	79.1	80.8	1.7	No	3.0	No
59	Limonite	e/o Archibald Av.	Business Park	77.9	78.2	0.2	No	3.0	No
60	Limonite	w/o Sumner Av.	Residential	78.2	78.4	0.2	Yes	1.5	No
61	Limonite	w/o Scholar Wy.	Residential	77.6	77.8	0.3	Yes	1.5	No
62	Limonite	w/o Hamner Av.	Commercial/Residential	76.9	77.2	0.3	Yes	1.5	No
63	Limonite	e/o Hamner Av.	Commercial	78.1	78.4	0.2	No	3.0	No

[1] Sources: Land Use Maps of the City of Chino, Ontario, and Eastvale, and aerial imagery.

[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. Values rounded to the nearest one-tenth.

"n/a" = Roadway segment does not represent a paved and/or fully constructed roadway under the given scenario.

8 SENSITIVE RECEIVER LOCATIONS

To assess the potential for long-term operational and short-term construction noise impacts, the following receiver locations as shown on Exhibit 8-A were identified as representative locations for focused analysis. Additional, off-site open space receiver locations are identified to quantify Project operational and construction-related noise levels for information purposes only.

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

Sensitive receivers near the Project site are 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 185 feet north of the Project site, R1 represents an existing residential home serving the Gordon Hay Inc. Dairy in the City of Ontario. A 24-hour noise level measurement was taken near this location, L4, to describe the existing ambient noise environment.

R2: Location R2 represents vacant unoccupied agricultural land located approximately 151 feet north of the Project site in the City of Ontario. A 24-hour noise level measurement was taken near this location, L6, to describe the existing ambient noise environment.

R3: Located approximately 94 feet east of the Project site across Carpenter Avenue, R3 represents vacant land in the City of Ontario. L7 represents the nearest 24-hour noise level measurement taken near this location to describe the existing ambient noise environment.

R4: Location R4 represents the existing residential home located at 9131 Merrill Avenue located approximately 129 feet southeast of the Project site. The 24-hour noise level measurement location L7 is used to describe the existing ambient noise environment.

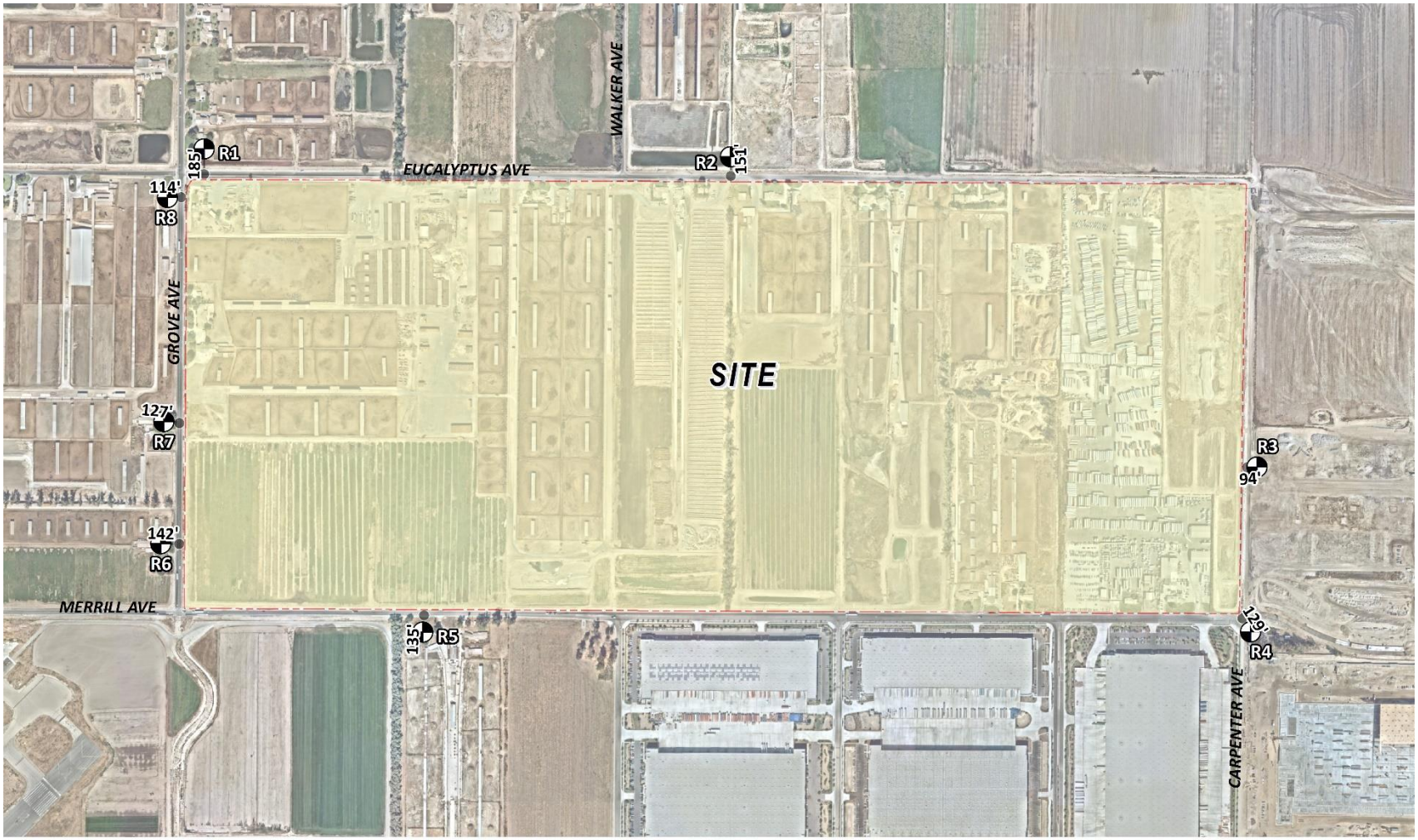
R5: Located approximately 135 feet south of the Project, R5 represents a couple of existing residential homes serving the J&D Star Dairy. A 24-hour noise level measurement was taken near this location, L10, to describe the existing ambient noise environment.

R6: Located approximately 142 feet west of the Project site, R6 represents an existing residential home located at 14848 Grove Avenue. A 24-hour noise level measurement was taken near this location, L9, to describe the existing ambient noise environment.

R7: Location R7 represents the existing residential home located roughly 127 feet west of the Project site across Grove Avenue. A 24-hour noise level measurement was taken near this location, L8, to describe the existing ambient noise environment.

R8: Located approximately 114 feet west of the Project site, R8 represents an existing residential home located at 14544 Grove Avenue. A 24-hour noise level measurement was taken near this location, L8, to describe the existing ambient noise environment.

EXHIBIT 8-A: SENSITIVE RECEIVER LOCATIONS



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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. Exhibit 9-A identifies the receiver locations and noise source locations used to assess the Project-related operational noise levels. Nearby receiving land uses are predominantly agricultural in character with associated residential uses. Over time and consistent with the City of Ontario Policy Plan vision for Ontario Ranch, it is anticipated that vicinity agricultural uses and associated accessory residential uses will transition to urban Specific Plan development(s).

Since detailed site plans are not available to support this Specific Plan Noise Impact Analysis, the operational noise analysis assumes all Project operational activity is occurring continuously near the Project boundaries. This conservative approach overstates reality, since the Project operational activities will occur at different locations throughout the Project site and vary throughout the daytime and nighttime hours.

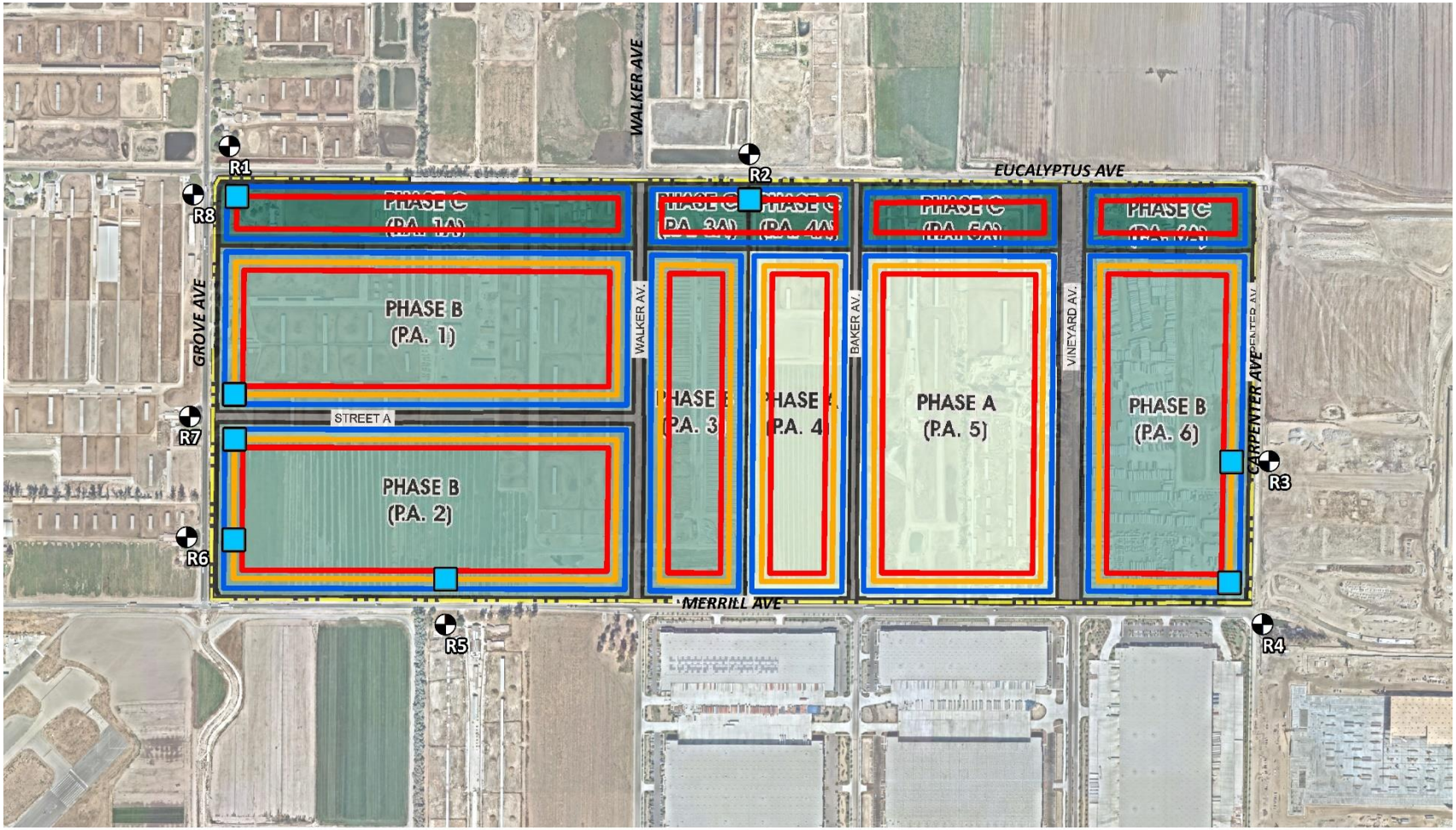
9.1 REFERENCE NOISE LEVELS

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 assume the worst-case noise environment with the cold storage loading dock activities, distribution/warehouse activities, roof-top air conditioning units, and parking lot vehicle movements all operating continuously. These noise level impacts will likely vary throughout the day.

9.1.1 MEASUREMENT PROCEDURES

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

EXHIBIT 9-A: OPERATIONAL NOISE SOURCE AND RECEIVER LOCATIONS



9.1.2 COLD STORAGE LOADING DOCK ACTIVITIES

To describe the cold storage loading dock activities, a reference noise level measurement was collected to represent the truck idling/reefer activity on Wednesday, January 7th, 2015, at the Nature's Best distribution facility located at 16081 Fern Avenue in the City of Chino. During the fourteen-minute truck idling/reefer activity reference noise level measurement, approximately 20 delivery trucks were docked, idling, or parked in the northern loading dock area. The truck idling/reefer activity reference noise level measurement was taken in the center of the loading dock activity area and represents multiple concurrent noise sources resulting in a combined noise level of 65.7 dBA L_{eq} at a uniform distance of 50 feet. Specifically, the truck idling/reefer activity reference noise level measurement represents one truck located approximately 30 feet from the noise level meter with another truck passing by to park roughly 20 feet away, both with their engines idling. Throughout the reference noise level measurement, a separate docked and running reefer truck was located approximately 50 feet east of the measurement location. Additional background noise sources included truck pass-by noise, truck drivers talking to each other next to docked trucks, and air brake release noise when trucks parked.

9.1.3 DISTRIBUTION/WAREHOUSE 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 fifteen-minute period and represents multiple noise sources taken from the center of loading dock activities generating a reference noise level of 59.8 dBA L_{50} 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.

9.1.4 ROOF-TOP AIR CONDITIONING UNITS

To assess the impacts created by the roof-top air conditioning units at the Project buildings, reference noise levels measurements were taken over a four-day total duration at the Santee Walmart on July 27th, 2015. Located at 170 Town Center Parkway in the City of Santee, the noise level measurements describe a mechanical roof-top air conditioning unit on the roof of an existing Walmart store, in addition to background noise levels from additional roof-top units. The reference noise level represents a Lennox SCA120 series 10-ton model packaged air conditioning unit. Using the uniform reference distance of 50 feet, the noise level is 54.4 dBA L_{50}. 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. The roof-top air condition units were observed to operate the most during the daytime hours for a total of 39 minutes per hour. The noise attenuation provided by a parapet wall is not reflected in this reference noise level measurement.

9.1.5 PARKING LOT VEHICLE MOVEMENTS (AUTOS)

To determine the noise levels associated with parking lot vehicle movements, Urban Crossroads collected reference noise level measurements over a 24-hour period on May 17th, 2017 at the parking lot for the Panasonic Avionics Corporation in the City of Lake Forest. The peak hour of activity measured over the 24-hour noise level measurement period occurred between 12:00 p.m. to 1:00 p.m., or the typical lunch hour for employees working in the area. The measured reference noise level at 50 feet from parking lot vehicle movements was measured at 38.5 dBA L_{50}. The parking lot noise levels are mainly due to cars pulling in and out of spaces during peak lunch hour activity and employees talking. Noise associated with parking lot vehicle movements is expected to operate for the entire hour (60 minutes).

TABLE 9-1: REFERENCE NOISE LEVEL MEASUREMENTS

Noise Source	Duration (hh:mm:ss)	Distance From Source (Feet)	Noise Source Height (Feet)	Noise Level (dBA L_{eq})		Noise Level (dBA L_{50})	
				@ Ref. Distance	@ 50 Feet	@ Ref. Distance	@ 50 Feet
Cold Storage Activity[1]	00:14:00	30'	8'	70.1	65.7	69.6	65.2
Distribution/Warehouse Activity[2]	00:15:00	30'	8'	67.2	62.8	64.2	59.8
Roof-Top Air Conditioning Units[3]	96:00:00	5'	5'	77.2	57.2	74.4	54.4
Parking Lot Vehicle Movements[4]	01:00:00	10'	5'	52.2	41.7	49.0	38.5

[1] Reference noise level measurements were collected from the existing operations of the Motivational Fulfillment & Logistics Services distribution facility located at 6810 Bickmore Avenue in the City of Chino.
[2] Reference noise level measurements were collected the Motivational Fulfillment & Logistics Services distribution facility located at 6810 Bickmore Avenue in the City of Chino.
[3] As measured by Urban Crossroads, Inc. at the Santee Walmart located at 170 Town Center Parkway.
[4] As measured by Urban Crossroads, Inc. at the Panasonic Avionics Corporation parking lot in the City of Lake Forest.

9.2 PROJECT OPERATIONAL NOISE LEVELS

Based upon the reference noise levels, it is possible to estimate the Project operational stationary-source noise levels at each of the sensitive receiver locations. The operational noise level calculations shown on Table 9-2 account for the distance attenuation provided due to geometric spreading, when sound from a localized stationary source (i.e., a point source) propagates uniformly outward in a spherical pattern. Hard site conditions are used in the operational noise analysis which result in noise levels that attenuate (or decrease) at a rate of 6 dBA for each doubling of distance from a point source. The basic noise attenuation equation shown below is used to calculate the distance attenuation based on a reference noise level (SPL_1):

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

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

9.2.1 UNMITIGATED PROJECT OPERATIONAL NOISE LEVELS

Table 9-2 indicates that the unmitigated Project operational noise levels associated with the cold storage loading dock activities, distribution/warehouse activities, roof-top air conditioning units, and parking lot vehicle movements are expected to range from 28.3 to 52.0 dBA L_{50} at the noise-sensitive off-site receiver locations. The unmitigated Project operational noise level calculations do not account for any existing or planned noise barriers. The unmitigated operational noise level calculation worksheets are included in Appendix 9.1.

TABLE 9-2: UNMITIGATED PROJECT OPERATIONAL NOISE LEVELS

Receiver Location[1]	Noise Source[2]	Project Operational Noise Levels (dBA)[3]					
		L_{eq} (Hourly)	L_{50} (30 mins)	L_{25} (15 mins)	L_8 (5 mins)	L_2 (1 min)	L_{max} (<1 min)
R1	Distribution/Warehouse Activity	47.1	44.1	47.1	51.7	55.5	59.9
	Air Conditioning Unit (Roof-Top)	41.5	38.7	40.4	41.7	42	42.5
	Parking Lot Vehicle Movements	31.5	28.3	29.3	34.3	40.3	51.2
	Combined Noise Level:	**48.2**	**45.3**	**48.0**	**52.2**	**55.8**	**60.5**
R2	Distribution/Warehouse Activity	48	45	48	52.6	56.4	60.8
	Air Conditioning Unit (Roof-Top)	42.5	39.7	41.4	42.7	43	43.5
	Parking Lot Vehicle Movements	32.3	29.1	30.1	35.1	41.1	52
	Combined Noise Level:	**49.2**	**46.2**	**48.9**	**53.1**	**56.7**	**61.4**
R3	Cold Storage Activities	52.5	52	53.3	54.3	56.1	63
	Air Conditioning Unit (Roof-Top)	44	41.2	42.9	44.2	44.5	45
	Parking Lot Vehicle Movements	33.8	30.6	31.6	36.6	42.6	53.5
	Combined Noise Level:	**53.1**	**52.4**	**53.7**	**54.8**	**56.6**	**63.5**
R4	Distribution/Warehouse Activity	46.5	43.5	46.5	51.1	54.9	59.3
	Air Conditioning Unit (Roof-Top)	41	38.2	39.9	41.2	41.5	42
	Parking Lot Vehicle Movements	31.5	28.3	29.3	34.3	40.3	51.2
	Combined Noise Level:	**47.7**	**44.7**	**47.4**	**51.6**	**55.2**	**60.0**
R5	Cold Storage Activities	50.8	50.3	51.6	52.6	54.4	61.3
	Air Conditioning Unit (Roof-Top)	42.3	39.5	41.2	42.5	42.8	43.3
	Parking Lot Vehicle Movements	32.1	28.9	29.9	34.9	40.9	51.8
	Combined Noise Level:	**51.4**	**50.7**	**52.0**	**53.1**	**54.9**	**61.8**
R6	Cold Storage Activities	50.5	50	51.3	52.3	54.1	61
	Air Conditioning Unit (Roof-Top)	42.1	39.3	41	42.3	42.6	43.1
	Parking Lot Vehicle Movements	31.9	28.7	29.7	34.7	40.7	51.6
	Combined Noise Level:	**51.1**	**50.4**	**51.7**	**52.8**	**54.6**	**61.5**

Receiver Location[1]	Noise Source[2]	Project Operational Noise Levels (dBA)[3]					
		L_{eq} (Hourly)	L_{50} (30 mins)	L_{25} (15 mins)	L_8 (5 mins)	L_2 (1 min)	L_{max} (<1 min)
R7	Cold Storage Activities	50.1	49.6	50.9	51.9	53.7	60.6
	Air Conditioning Unit (Roof-Top)	41.6	38.8	40.5	41.8	42.1	42.6
	Parking Lot Vehicle Movements	32	28.8	29.8	34.8	40.8	51.7
	Combined Noise Level:	**50.7**	**50.0**	**51.3**	**52.4**	**54.2**	**61.2**
R8	Distribution/Warehouse Activity	48.3	45.3	48.3	52.9	56.7	61.1
	Air Conditioning Unit (Roof-Top)	42.7	39.9	41.6	42.9	43.2	43.7
	Parking Lot Vehicle Movements	32.6	29.4	30.4	35.4	41.4	52.3
	Combined Noise Level:	**49.4**	**46.5**	**49.2**	**53.4**	**57.0**	**61.7**

9.2.2 UNMITIGATED PROJECT OPERATIONAL NOISE LEVEL COMPLIANCE WITH APPLICABLE STANDARDS

To evaluate compliance with applicable local noise standards, the Project-only operational noise levels are evaluated against exterior noise level thresholds based on the City of Ontario and City of Chino standards. Table 9-3 shows that Project operational-source noise levels at potentially affected receivers would exceed the City of Ontario nighttime exterior noise level standards. This is a *potentially significant impact.* The Project would not otherwise result in 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.

TABLE 9-3: UNMITIGATED OPERATIONAL NOISE LEVEL COMPLIANCE

Receiver Location[1]	City	Land Use	Noise Level at Receiver Locations (dBA)[2]						Threshold Exceeded?[3]
			L_{eq} (Hourly)	L_{50} (30 mins)	L_{25} (15 mins)	L_8 (5 mins)	L_2 (1 min)	L_{max} (<1 min)	
Daytime	**Ontario**	**Residential Standards**	**65**	**-**	**65**	**-**	**-**	**85**	
Nighttime			**45**	**-**	**45**	**-**	**-**	**65**	
Daytime	**Chino**		**-**	**55**	**60**	**65**	**70**	**75**	**-**
Nighttime			**-**	**50**	**55**	**60**	**65**	**70**	**-**
R1	Ontario	Residential	48.2	-	48.0	-	-	60.5	Yes
R2	Ontario	Agricultural	49.2	-	48.9	-	-	61.4	Yes
R3	Ontario	Residential	53.1	-	53.7	-	-	63.5	Yes
R4	Ontario	Residential	47.7	-	47.4	-	-	60.0	Yes
R5	Chino	Residential	-	50.7	52.0	53.1	54.9	61.8	Yes
R6	Ontario	Residential	51.1	-	51.7	-	-	61.5	Yes
R7	Ontario	Residential	50.7	-	51.3	-	-	61.2	Yes
R8	Ontario	Residential	49.4	-	49.2	-	-	61.7	Yes

[1] See Exhibit 9-A for the receiver and noise source locations.
[2] Estimated unmitigated Project operational noise levels as shown on Table 9-2.
[3] Do the estimated Project operational noise levels meet the operational noise level standards (Table 3-1)?

9.2.1 MITIGATED PROJECT OPERATIONAL NOISE LEVELS

To satisfy the applicable local noise standards the project shall implement the following operational noise mitigation measures.

- Cold storage loading dock activities and distribution/warehouse facilities shall be designed so that truck bays and loading docks are a minimum of 300 feet away from the property line of sensitive receivers, measured from the dock building door. This distance may be reduced if the site design includes berms or other similar features to appropriately shield and buffer the sensitive receivers from the active truck operations areas.
- Cold storage and distribution/warehouse facilities shall be designed to provide adequate on-site parking for commercial trucks and passenger vehicles and on-site queuing for trucks that is away from sensitive receivers. The general queuing and spill-over of trucks onto surrounding public streets shall be prevented. Commercial trucks shall not be parked in the public road right-of-way or nearby residential areas.
- If a public address (PA) system is being used in conjunction with a cold Storage and distribution/warehouse facility operation, the PA system shall be oriented away from sensitive receivers and the volume set at a level not readily audible past the property line.
- Individual development proposals within the Project site shall demonstrate to the satisfaction of the Lead Agency that noise impacts generated by such proposals would not exceed or be substantially different than noise impacts considered and addressed in this Noise Impact Analysis.

Table 9-4 indicates that the mitigated Project operational noise levels associated with the cold storage loading dock activities, distribution/warehouse activities, roof-top air conditioning units, and parking lot vehicle movements are expected to range from 19.5 to 34.4 dBA L_{50} at the noise-sensitive off-site receiver locations. The mitigated Project operational noise level calculations do not account for any existing or planned noise barriers. The mitigated operational noise level calculation worksheets are included in Appendix 9.2.

TABLE 9-4: MITIGATED PROJECT OPERATIONAL NOISE LEVELS

Receiver Location[1]	Noise Source[2]	Project Operational Noise Levels (dBA)[3]					
		L_{eq} (Hourly)	L_{50} (30 mins)	L_{25} (15 mins)	L_8 (5 mins)	L_2 (1 min)	L_{max} (<1 min)
R1	Distribution/Warehouse Activity	22.9	20.1	21.8	23.1	23.4	23.9
	Air Conditioning Unit (Roof-Top)	37	34	37	41.6	45.4	49.8
	Parking Lot Vehicle Movements	22.7	19.5	20.5	25.5	31.5	42.4
	Combined Noise Level:	**37.3**	**34.3**	**37.2**	**41.8**	**45.6**	**50.5**
R2	Distribution/Warehouse Activity	25.5	22.7	24.4	25.7	26	26.5
	Air Conditioning Unit (Roof-Top)	37.4	34.4	37.4	42	45.8	50.2
	Parking Lot Vehicle Movements	25.2	22	23	28	34	44.9
	Combined Noise Level:	**37.9**	**34.9**	**37.8**	**42.3**	**46.1**	**51.3**

Receiver Location[1]	Noise Source[2]	Project Operational Noise Levels (dBA)[3]					
		L_{eq} (Hourly)	L_{50} (30 mins)	L_{25} (15 mins)	L_{8} (5 mins)	L_{2} (1 min)	L_{max} (<1 min)
R3	Cold Storage Activities	29.4	26.6	28.3	29.6	29.9	30.4
	Air Conditioning Unit (Roof-Top)	37.4	34.4	37.4	42	45.8	50.2
	Parking Lot Vehicle Movements	28.9	25.7	26.7	31.7	37.7	48.6
	Combined Noise Level:	**38.5**	**35.5**	**38.2**	**42.6**	**46.5**	**52.5**
R4	Distribution/Warehouse Activity	26.2	23.4	25.1	26.4	26.7	27.2
	Air Conditioning Unit (Roof-Top)	37.2	34.2	37.2	41.8	45.6	50
	Parking Lot Vehicle Movements	24.1	20.9	21.9	26.9	32.9	43.8
	Combined Noise Level:	**37.7**	**34.7**	**37.6**	**42.1**	**45.9**	**51.0**
R5	Cold Storage Activities	26	23.2	24.9	26.2	26.5	27
	Air Conditioning Unit (Roof-Top)	37.4	34.4	37.4	42	45.8	50.2
	Parking Lot Vehicle Movements	26.6	23.4	24.4	29.4	35.4	46.3
	Combined Noise Level:	**38.0**	**35.0**	**37.8**	**42.3**	**46.2**	**51.7**
R6	Cold Storage Activities	24.6	21.8	23.5	24.8	25.1	25.6
	Air Conditioning Unit (Roof-Top)	37.4	34.4	37.4	42	45.8	50.2
	Parking Lot Vehicle Movements	24	20.8	21.8	26.8	32.8	43.7
	Combined Noise Level:	**37.8**	**34.8**	**37.7**	**42.2**	**46.0**	**51.1**
R7	Cold Storage Activities	25.4	22.6	24.3	25.6	25.9	26.4
	Air Conditioning Unit (Roof-Top)	37.4	34.4	37.4	42	45.8	50.2
	Parking Lot Vehicle Movements	27	23.8	24.8	29.8	35.8	46.7
	Combined Noise Level:	**38.0**	**35.0**	**37.8**	**42.3**	**46.3**	**51.8**
R8	Distribution/Warehouse Activity	24.8	22	23.7	25	25.3	25.8
	Air Conditioning Unit (Roof-Top)	37.4	34.4	37.4	42	45.8	50.2
	Parking Lot Vehicle Movements	25.3	22.1	23.1	28.1	34.1	45
	Combined Noise Level:	**37.9**	**34.9**	**37.7**	**42.3**	**46.1**	**51.4**

[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.

9.2.2 MITIGATED PROJECT OPERATIONAL NOISE LEVEL COMPLIANCE WITH APPLICABLE STANDARDS

As indicated at Table 9-5, with incorporation proposed mitigation, Project operational-source noise received at potentially affected receivers would comply with applicable standards. On this basis, as mitigated, the potential for the Project to result in 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 would be *less than significant*.

TABLE 9-5: MITIGATED OPERATIONAL NOISE LEVEL COMPLIANCE

Receiver Location[1]	City	Land Use	Noise Level at Receiver Locations (dBA)[2]						Threshold Exceeded?[3]
			L_{eq} (Hourly)	L_{50} (30 mins)	L_{25} (15 mins)	L_8 (5 mins)	L_2 (1 min)	L_{max} (<1 min)	
Daytime	**Ontario**	**Residential Standards**	**65**	**-**	**65**	**-**	**-**	**85**	
Nighttime			**45**	**-**	**45**	**-**	**-**	**65**	
Daytime	**Chino**		**-**	**55**	**60**	**65**	**70**	**75**	**-**
Nighttime			**-**	**50**	**55**	**60**	**65**	**70**	**-**
R1	Ontario	Residential	37.3	-	37.2	-	-	50.5	No
R2	Ontario	Agricultural	37.9	-	37.8	-	-	51.3	No
R3	Ontario	Residential	38.5	-	38.2	-	-	52.5	No
R4	Ontario	Residential	37.7	-	37.6	-	-	51.0	No
R5	Chino	Residential	-	35.0	37.8	42.3	46.2	51.7	No
R6	Ontario	Residential	37.8	-	37.7	-	-	51.1	No
R7	Ontario	Residential	38.0	-	37.8	-	-	51.8	No
R8	Ontario	Residential	37.9	-	37.7	-	-	51.4	No

[1] See Exhibit 9-A for the receiver and noise source locations.
[2] Estimated mitigated Project operational noise levels as shown on Table 9-4.
[3] Do the estimated Project operational noise levels meet the operational noise level standards (Table 3-1)?

9.3 PROJECT OPERATIONAL NOISE LEVEL CONTRIBUTIONS

To describe the Project operational noise level contributions, the Project operational noise levels are combined with the existing ambient noise levels measurements for the nearby receiver locations potentially impacted by Project operational noise sources. Since the units used to measure noise, decibels (dB), are logarithmic units, the Project-operational and existing ambient noise levels cannot be combined using standard arithmetic equations. (5) Instead, they must be logarithmically added using the following base equation:

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

Where "SPL1," "SPL2," etc. are equal to the sound pressure levels being combined, or in this case, the Project-operational and existing ambient noise levels. The difference between the combined Project and ambient noise levels describe the Project noise level contributions to the existing ambient noise environment. Noise levels that would be experienced at receiver locations when Project-source noise is added to the daytime and nighttime ambient conditions are presented on Tables 9-6 and 9-7, respectively.

As indicated on Tables 9-6 and 9-7, the Project will generate an unmitigated daytime operational noise level increase of up to 1.2 dBA L_{eq} and an unmitigated nighttime operational noise level increase of up to 1.8 dBA L_{eq} at the nearby receiver locations. Since the Project-related operational noise level contributions will satisfy the operational noise level increase significance criteria presented in Table 4-2, the increases at the sensitive receiver locations will be *less than significant*.

TABLE 9-6: PROJECT DAYTIME OPERATIONAL NOISE CONTRIBUTIONS

Receiver Location[1]	Total Project Operational Noise Level (dBA L_{eq})[2]	Measurement Location[3]	Reference Ambient Noise Levels (dBA L_{eq})[4]	Combined Project and Ambient (dBA L_{eq})[5]	Project Increase (dBA L_{eq})[6]	Threshold (dBA L_{eq})	Threshold Exceeded?[7]
R1	48.2	L4	70.6	70.6	0.0	1.5	No
R2	49.2	L6	61.5	61.7	0.2	3.0	No
R3	53.1	L7	58.2	59.4	1.2	5.0	No
R4	47.7	L7	58.2	58.6	0.4	5.0	No
R5	51.4	L10	67.1	67.2	0.1	1.5	No
R6	51.1	L9	75.3	75.3	0.0	1.5	No
R7	50.7	L8	71.5	71.5	0.0	1.5	No
R8	49.4	L8	71.5	71.5	0.0	1.5	No

[1] See Exhibit 9-A for the sensitive receiver locations.
[2] Unmitigated Project operational noise levels as shown on Table 9-2.
[3] Reference noise level measurement locations as shown on Exhibit 5-A.
[4] Observed daytime ambient noise levels as shown on Table 5-1.
[5] Represents the combined ambient conditions plus the Project activities.
[6] The noise level increase expected with the addition of the proposed Project activities.
[7] Significance Criteria as defined in Section 4.

TABLE 9-7: PROJECT NIGHTTIME OPERATIONAL NOISE CONTRIBUTIONS

Receiver Location[1]	Total Project Operational Noise Level (dBA L_{eq})[2]	Measurement Location[3]	Reference Ambient Noise Levels (dBA L_{eq})[4]	Combined Project and Ambient (dBA L_{eq})[5]	Project Increase (dBA L_{eq})[6]	Threshold (dBA L_{eq})	Threshold Exceeded?[7]
R1	48.2	L4	66.9	67.0	0.1	1.5	No
R2	49.2	L6	58.2	58.7	0.5	5.0	No
R3	53.1	L7	56.1	57.9	1.8	5.0	No
R4	47.7	L7	56.1	56.7	0.6	5.0	No
R5	51.4	L10	62.7	63.0	0.3	3.0	No
R6	51.1	L9	72.3	72.3	0.0	1.5	No
R7	50.7	L8	69.6	69.7	0.1	1.5	No
R8	49.4	L8	69.6	69.6	0.0	1.5	No

[1] See Exhibit 9-A for the sensitive receiver locations.
[2] Unmitigated Project operational noise levels as shown on Table 9-2.
[3] Reference noise level measurement locations as shown on Exhibit 5-A.
[4] Observed nighttime ambient noise levels as shown on Table 5-1.
[5] Represents the combined ambient conditions plus the Project activities.
[6] The noise level increase expected with the addition of the proposed Project activities.
[7] Significance Criteria as defined in Section 4.

10 ON-SITE CONSTRUCTION-SOURCE NOISE IMPACTS

This section analyzes potential impacts resulting from the short-term construction activities associated with the development of the Project. Exhibit 10-A shows the construction noise source locations in relation to the nearby sensitive receiver locations (R1 to R8) previously described in Section 8.

10.1 CONSTRUCTION NOISE LEVELS

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

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

This construction noise analysis was prepared using reference noise level measurements taken by Urban Crossroads, Inc. to describe the typical construction activity noise levels for each stage of Project construction. The construction reference noise level measurements represent a list of typical construction activity noise levels. Noise levels generated by heavy construction equipment can range from approximately 68 dBA to 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 *Merrill Commerce Center Specific Plan Air Quality Impact Analysis* prepared by Urban Crossroads, Inc. (25)

10.2 CONSTRUCTION REFERENCE NOISE LEVELS

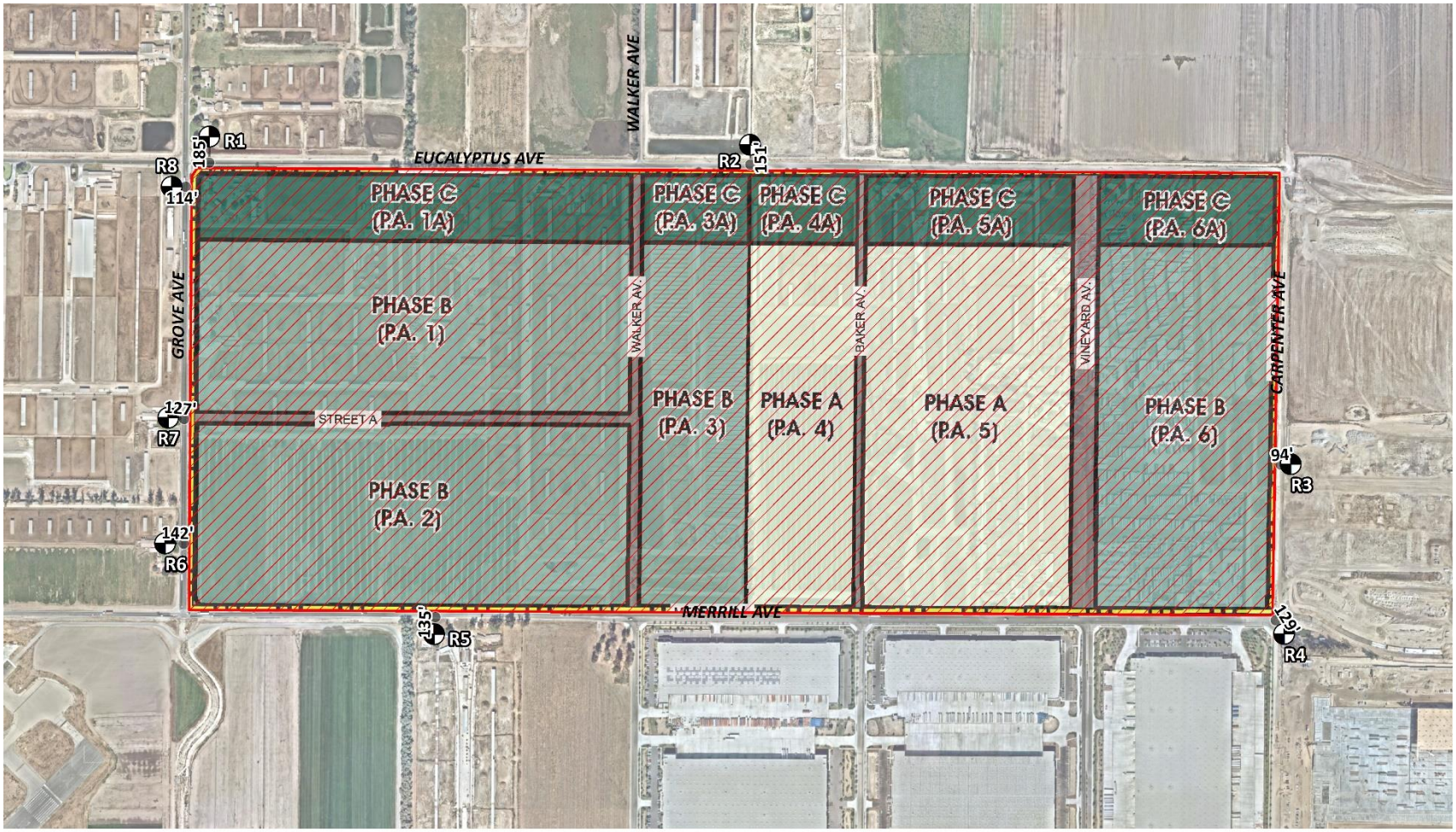
To describe the Project construction noise levels, measurements were collected for similar activities at several construction sites. Table 10-1 provides a summary of the construction reference noise level measurements. Since the reference noise levels were collected at varying distances, all construction 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	Duration (h:mm:ss)	Reference Distance From Source (Feet)	Reference Noise Levels @ Reference Distance (dBA L_{eq})	Reference Noise Levels @ 50 Feet (dBA L_{eq})[6]
1	Truck Pass-Bys & Dozer Activity[1]	0:01:15	30'	63.6	59.2
2	Dozer Activity[1]	0:01:00	30'	68.6	64.2
3	Construction Vehicle Maintenance Activities[2]	0:01:00	30'	71.9	67.5
4	Foundation Trenching[2]	0:01:01	30'	72.6	68.2
5	Rough Grading Activities[2]	0:05:00	30'	77.9	73.5
6	Framing[3]	0:02:00	30'	66.7	62.3
7	Water Truck Pass-By & Backup Alarm[4]	0:00:45	30'	76.3	71.9
8	Scraper, Water Truck, & Dozer Activity[4]	0:30:00	30'	79.7	75.3
9	Concrete Mixer Truck Movements[5]	0:01:00	50'	71.2	71.2
10	Concrete Paver Activities[5]	0:01:00	30'	70.0	65.6
11	Concrete Mixer Pour & Paving Activities[5]	0:01:00	30'	70.3	65.9
12	Concrete Mixer Backup Alarms & Air Brakes[5]	0:00:20	50'	71.6	71.6
13	Concrete Mixer Pour Activities[5]	0:00:20	50'	67.7	67.7
14	Building Demolition	0:00:29	30'	76.1	71.7

[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] As measured by Urban Crossroads, Inc. on 10/30/15 during grading operations at an industrial construction site in the City of Ontario.
[5] 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.
[6] As measured by Urban Crossroads, Inc. on 5/9/2017 during residential building demolition in Newport Beach.
[7] 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: PROJECT SITE CONSTRUCTION ACTIVITY AND RECEIVER LOCATIONS



10.3 CONSTRUCTION NOISE ANALYSIS

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

TABLE 10-2: DEMOLITION 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
Building Demolition	71.7
Water Truck Pass-By & Backup Alarm	71.9
Highest Reference Noise Level at 50 Feet (dBA L_{eq}):	71.9

Receiver Location	Distance to Project Site Construction Activity (Feet)[2]	Distance Attenuation (dBA L_{eq})[3]	Estimated Noise Barrier Attenuation (dBA L_{eq})[4]	Construction Noise Level (dBA L_{eq})
R1	185'	-11.4	0.0	60.5
R2	151'	-9.6	0.0	62.3
R3	94'	-5.5	0.0	66.4
R4	129'	-8.2	0.0	63.7
R5	135'	-8.6	0.0	63.3
R6	142'	-9.1	0.0	62.8
R7	127'	-8.1	0.0	63.8
R8	114'	-7.2	0.0	64.7

[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] Estimated barrier attenuation from existing barriers in the Project study area, if any.

TABLE 10-3: 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 Project Site Construction Activity (Feet)[2]	Distance Attenuation (dBA L_{eq})[3]	Estimated Noise Barrier Attenuation (dBA L_{eq})[4]	Construction Noise Level (dBA L_{eq})
R1	185'	-11.4	0.0	52.8
R2	151'	-9.6	0.0	54.6
R3	94'	-5.5	0.0	58.7
R4	129'	-8.2	0.0	56.0
R5	135'	-8.6	0.0	55.6
R6	142'	-9.1	0.0	55.1
R7	127'	-8.1	0.0	56.1
R8	114'	-7.2	0.0	57.0

[1] Reference construction noise level measurements taken by Urban Crossroads, Inc.
[2] Distance from the nearest point of construction activity to the nearest receiver.
[3] Point (stationary) source drop off rate of 6.0 dBA per doubling of distance.
[4] Estimated barrier attenuation from existing barriers in the Project study area, if any.

TABLE 10-4: 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 Project Site Construction Activity (Feet)[2]	Distance Attenuation (dBA L_{eq})[3]	Estimated Noise Barrier Attenuation (dBA L_{eq})[4]	Construction Noise Level (dBA L_{eq})
R1	185'	-11.4	0.0	62.1
R2	151'	-9.6	0.0	63.9
R3	94'	-5.5	0.0	68.0
R4	129'	-8.2	0.0	65.3
R5	135'	-8.6	0.0	64.9
R6	142'	-9.1	0.0	64.4
R7	127'	-8.1	0.0	65.4
R8	114'	-7.2	0.0	66.3

[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] Estimated barrier attenuation from existing barriers in the Project study area, if any.

TABLE 10-5: 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 Project Site Construction Activity (Feet)[2]	Distance Attenuation (dBA L_{eq})[3]	Estimated Noise Barrier Attenuation (dBA L_{eq})[4]	Construction Noise Level (dBA L_{eq})
R1	185'	-11.4	0.0	56.8
R2	151'	-9.6	0.0	58.6
R3	94'	-5.5	0.0	62.7
R4	129'	-8.2	0.0	60.0
R5	135'	-8.6	0.0	59.6
R6	142'	-9.1	0.0	59.1
R7	127'	-8.1	0.0	60.1
R8	114'	-7.2	0.0	61.0

[1] Reference construction noise level measurements taken by Urban Crossroads, Inc.
[2] Distance from the nearest point of construction activity to the nearest receiver.
[3] Point (stationary) source drop off rate of 6.0 dBA per doubling of distance.
[4] Estimated barrier attenuation from existing barriers in the Project study area, if any.

TABLE 10-6: 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 Project Site Construction Activity (Feet)[2]	Distance Attenuation (dBA L_{eq})[3]	Estimated Noise Barrier Attenuation (dBA L_{eq})[4]	Construction Noise Level (dBA L_{eq})
R1	185'	-11.4	0.0	60.2
R2	151'	-9.6	0.0	62.0
R3	94'	-5.5	0.0	66.1
R4	129'	-8.2	0.0	63.4
R5	135'	-8.6	0.0	63.0
R6	142'	-9.1	0.0	62.5
R7	127'	-8.1	0.0	63.5
R8	114'	-7.2	0.0	64.4

[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] Estimated barrier attenuation from existing barriers in the Project study area, if any.

TABLE 10-7: 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 Project Site Construction Activity (Feet)[2]	Distance Attenuation (dBA L_{eq})[3]	Estimated Noise Barrier Attenuation (dBA L_{eq})[4]	Construction Noise Level (dBA L_{eq})
R1	185'	-11.4	0.0	56.1
R2	151'	-9.6	0.0	57.9
R3	94'	-5.5	0.0	62.0
R4	129'	-8.2	0.0	59.3
R5	135'	-8.6	0.0	58.9
R6	142'	-9.1	0.0	58.4
R7	127'	-8.1	0.0	59.4
R8	114'	-7.2	0.0	60.3

[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] Estimated barrier attenuation from existing barriers in the Project study area, if any.

10.4 CONSTRUCTION NOISE LEVEL COMPLIANCE

The construction noise analysis shows that the highest construction noise levels will occur when construction activities take place at the closest point from primary Project construction activity to each of the nearby receiver locations. As shown on Table 10-8, the unmitigated construction noise levels are expected to range from 52.8 to 68.0 dBA L_{eq} at the nearby receiver locations.

TABLE 10-8: UNMITIGATED CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY

Receiver Location[1]	Construction Noise Levels by Stage (dBA L_{eq})						
	Demolition	Site Preparation	Grading	Building Construction	Paving	Architectural Coating	Highest Construction Noise Level[2]
R1	60.5	52.8	62.1	56.8	60.2	56.1	62.1
R2	62.3	54.6	63.9	58.6	62.0	57.9	63.9
R3	66.4	58.7	68.0	62.7	66.1	62.0	68.0
R4	63.7	56.0	65.3	60.0	63.4	59.3	65.3
R5	63.3	55.6	64.9	59.6	63.0	58.9	64.9
R6	62.8	55.1	64.4	59.1	62.5	58.4	64.4
R7	63.8	56.1	65.4	60.1	63.5	59.4	65.4
R8	64.7	57.0	66.3	61.0	64.4	60.3	66.3

[1] Noise receiver locations are shown on Exhibit 10-A.
[2] Estimated construction noise levels based on the highest reference construction activity for each stage.

Table 10-9 summarizes daytime Project construction-source noise levels at potentially affected receiver locations. As shown on Table 10-9, the highest construction noise levels at nearby receiver locations R1 to R8 are estimated to range from 62.1 to 68.0 dBA L_{eq} and will exceed the City of Chino 65 dBA L_{eq} significance threshold during temporary Project construction activities at 4 of the 8 sensitive receiver locations: R3, R4, R7 and R8. Therefore, the unmitigated noise impact due to daytime Project construction is considered *potentially significant* at receiver locations R3, R4, R7 and R8. All other receiver locations will experience unmitigated *less than significant* noise impacts during construction activities.

To reduce the construction equipment noise level impacts at receiver locations R3, R4, R7 and R8 construction noise mitigation measures are required. Proposed mitigation includes the following:

- Provide a minimum 150-foot buffer distance between large construction equipment (e.g. dozers, graders, scrapers, etc.) and receiver locations R3, R4, R7 and R8, if residences at these locations are occupied and actively used at the time Project demolition and/or grading activities occur.
- If a 150-foot buffer is not achievable, install temporary noise control barriers that provide a minimum noise level attenuation of 10 dBA when Project demolition or grading activities occur within 150 feet of existing residential structures, or other off-site sensitive land uses that are occupied and actively utilized. General noise control barrier design parameters are

presented below, though any solution(s) providing the required 10 dBA noise attenuation is/are acceptable.

- The noise control barrier should present a generally solid face from top to bottom. Unnecessary openings should not be made.
- The noise control barrier shall be maintained and any damage in the barrier or openings between the barrier and the ground shall be promptly repaired.
- The noise control barrier(s) and associated elements shall be removed, and affected portion(s) of the site restored at the conclusion of grading/demolition activities.

- Alternatively, the Applicant may employ construction equipment and construction techniques that would demonstrably ensure that noise levels at potentially affected sensitive receivers would not exceed 65 dBA. A combination of noise-receiver separation, noise barriers and use of noise reducing construction equipment and construction techniques may be employed provided that noise levels at potentially affected receivers does not exceed 65 dBA.

TABLE 10-9: UNMITIGATED CONSTRUCTION-SOURCE NOISE LEVEL COMPLIANCE

Receiver Location[1]	Land Use	Highest Unmitigated Construction Noise Levels (dBA L_{eq})[2]	Threshold (dBA L_{eq})[3]	Threshold Exceeded?[4]
R1	Residential	62.1	65	No
R2	Agricultural	63.9	n/a	No
R3	Residential	68.0	65	**Yes**
R4	Residential	65.3	65	**Yes**
R5	Residential	64.9	65	No
R6	Residential	64.4	65	No
R7	Residential	65.4	65	**Yes**
R8	Residential	66.3	65	**Yes**

[1] Noise receiver locations are shown on Exhibit 10-A
[2] Estimated highest construction noise levels, as shown on Table 10-8.
[3] Construction noise standard as shown on Table 4-2.
[4] Do the estimated Project construction noise levels satisfy the construction noise level threshold?
"n/a" = No construction noise level threshold is identified for the given use, however, construction noise levels are presented for informational purposes.

Table 10-10 shows the mitigated construction noise levels will be reduced to 64.0 dBA L_{eq} at the potentially impacted receiver locations with the attenuation provided by the 150-foot buffer zone for large construction equipment (e.g., dozers, graders, scrapers, etc.). Therefore, since Project construction noise levels will be mitigated to below the 65 dBA L_{eq} City of Chino construction noise level threshold, the noise impact due to Project construction is considered a *less than significant* impact with mitigation.

TABLE 10-10: MITIGATED CONSTRUCTION-SOURCE NOISE LEVEL COMPLIANCE

Receiver Location[1]	Highest Construction Noise Level[2]	150' Buffer Attenuation	Mitigated Peak Activity	Threshold (dBA L_{eq})[3]	Threshold Exceeded?[4]
R3	68.0	-4.0	64.0	65	No
R4	65.3	-1.3	64.0	65	No
R7	65.4	-1.4	64.0	65	No
R8	66.3	-2.3	64.0	65	No

[1] Noise receiver locations are shown on Exhibit 10-A
[2] Estimated highest construction noise levels, as shown on Table 10-8.
[3] Construction noise standard as shown on Table 4-2.
[4] Do the estimated Project construction noise levels satisfy the construction noise level threshold?

10.5 CONSTRUCTION-SOURCE NOISE LEVEL CONTRIBUTIONS

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 10-11.

A temporary noise level increase of 12 dBA 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 use of 12 dB was established in California many years ago and is based on the concept that a 10 dB increase generally is perceived as a doubling of loudness. Although the Caltrans recommendations were specifically developed to assess traffic noise impacts, the 12 dBA L_{eq} substantial noise level increase threshold is used in California to address noise level increases with the potential to exceed existing conditions. (4)

As indicated in Table 10-11, the Project will contribute unmitigated, worst-case construction noise level increases ranging from 0.3 to 10.2 dBA Leq during the daytime hours at the closest sensitive receiver locations. Since the worst-case temporary noise level increases of up to 10.2 dBA Leq during Project construction satisfies the Caltrans substantial 12 dBA Leq noise level increase significance threshold, the unmitigated construction noise level increases are considered *less than significant* temporary noise impacts.

TABLE 10-11: UNMITIGATED CONSTRUCTION-RELATED TEMPORARY NOISE LEVEL INCREASES

Receiver Location[1]	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	62.1	L4	70.6	71.2	0.6	No
R2	63.9	L6	61.5	65.9	4.4	No
R3	68.0	L7	58.2	68.4	10.2	No
R4	65.3	L7	58.2	66.1	7.9	No
R5	64.9	L10	71.4	72.3	0.9	No
R6	64.4	L9	75.3	75.6	0.3	No
R7	65.4	L8	71.5	72.5	1.0	No
R8	66.3	L8	71.5	72.6	1.1	No

[1] Noise receiver locations are shown on Exhibit 8-A.
[2] Peak 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.
- Trucks: Trucks hauling building materials to construction sites can be sources of vibration intrusion if the haul routes pass through residential neighborhoods on streets with bumps or potholes. Repairing the bumps and potholes generally eliminates the problem.

Ground-borne vibration levels resulting from construction activities occurring within the Project site were estimated by data published by the Federal Transit Administration (FTA). Construction activities that would have the potential to generate low levels of ground-borne vibration within the Project site include mobile equipment activities and pile driving, among others. Using the vibration source level of construction equipment provided on Table 6-12 and the construction vibration assessment methodology published by the FTA, it is possible to estimate the Project vibration impacts.

Based on the analysis, construction vibration velocity levels are estimated at 0.012 in/sec PPV, and 0.009 in/sec RMS, as shown on Table 10-12. Based on the results of the analysis, the Project

construction vibration levels will remain below the City of Chino 0.05 in/sec RMS vibration level standard at the nearby sensitive receiver locations.

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. (3) The peak Project-construction vibration levels approaching 0.012 in/sec PPV will remain below the FTA vibration levels for building damage at the residential homes near the Project site. Moreover, the impacts at the site of the closest sensitive receivers are unlikely to be sustained during the entire construction period but will occur rather only during the times that heavy construction equipment is operating adjacent to the Project site perimeter.

TABLE 10-12: UNMITIGATED CONSTRUCTION EQUIPMENT VIBRATION LEVELS

Receiver Location[1]	City	Distance to Const. Activity (Feet)	Receiver Levels (in/sec) PPV[2]					Velocity Levels (in/sec) RMS[3]	Threshold (in/sec) RMS[4]	Threshold Exceeded?[5]
			Small Bulldozer	Jack-hammer	Loaded Trucks	Large Bulldozer	Peak Vibration			
R1	Ontario	185'	0.0001	0.0017	0.0038	0.0044	0.0044	0.003	0.05	No
R2	Ontario	151'	0.0002	0.0024	0.0051	0.0060	0.0060	0.004	0.05	No
R3	Ontario	94'	0.0004	0.0048	0.0104	0.0122	0.0122	0.009	0.05	No
R4	Ontario	129'	0.0003	0.0030	0.0065	0.0076	0.0076	0.005	0.05	No
R5	Chino	135'	0.0002	0.0028	0.0061	0.0071	0.0071	0.005	0.05	No
R6	Ontario	142'	0.0002	0.0026	0.0056	0.0066	0.0066	0.005	0.05	No
R7	Ontario	127'	0.0003	0.0031	0.0066	0.0078	0.0078	0.006	0.05	No
R8	Ontario	114'	0.0003	0.0036	0.0078	0.0091	0.0091	0.006	0.05	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] Vibration levels in PPV are converted to RMS velocity using a 0.71 conversion factor identified in the Caltrans Transportation and Construction Vibration Guidance Manual, September 2013.
[4] Source: Section 9.40.110 of the City of Chino Municipal Code
[5] Does the vibration exceed the maximum acceptable vibration threshold?

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11 OFF-SITE INFRASTRUCTURE-SOURCE NOISE IMPACTS

The development of the Project will require the construction of off-site infrastructure improvements that include water, sewer, drainage and other utility facilities. Proposed utility infrastructure plans and improvements to be implemented by the Project area will include the following services, potable water, sewer, recycled water, storm drains and fiber optics. Each of these services has the potential to generate off-site construction noise level impacts to neighboring noise sensitive land uses. Appendix 11.1 provides the concept plans for each of the planned infrastructure services. A brief summary of the off-site infrastructure projects area summarized below.

- Water: Potable water services to the Specific Plan area would be provided by the City of Ontario (Municipal Utilities Company). A network of domestic water lines would connect to the existing water mains located in Euclid Avenue and Archibald Avenue, and master-planned water facilities to be located north of the intersection of Cucamonga Avenue and Francis Street.
- Sewer: New sewer lines would be installed along portions of Grove Avenue, Walker Avenue, Merrill Avenue, Carpenter Avenue, Remington Avenue, and Moon Place. An interim sewer line would be constructed to provide sewer service to Phase 1 of the Project. This interim sewer line would be properly abandoned once installation of the master sewer plan that would connect to the existing trunk sewer line located at the intersection of Kimball Avenue and Euclid Avenue (as described below) is completed.
- Recycled Water: New recycled water system lines would be installed in portions of Grove Avenue, Eucalyptus Avenue, Walker Avenue, and Merrill Avenue.
- Storm Drain: A network of drainage lines is proposed on- and off-site to accommodate stormwater runoff flows. Storm drain lines will be provided for several segments on Merrill Avenue, Euclid Avenue, Grove Avenue, and Vineyard Avenue. Additional on-site storm drain improvements would include storm water detention/retention/water quality basins, which would capture, treat, and/or gradually release storm water to the public storm drain system
- Fiber Optics: A network of fiber optic lines is proposed on- and off-site with new fiber optic lines proposed on Vineyard Avenue, Grove Avenue, and Eucalyptus Avenue, with point of connection to the existing fiber optic line in Archibald Avenue. Additionally, the Project proposes to install a primary fiber optic line in the segment of Merrill Avenue located between Euclid Avenue and Archibald Avenue.

11.1 INFRASTRUCTURE CONSTRUCTION NOISE SOURCES

Noise generated by the Project infrastructure activities will include a combination of construction equipment that when combined can reach high levels. However, the concept plans for potable water, sewer, recycled water, storm drains and fiber optics all appear to be generally limited to the right-of-way of existing roadway segments. This places the construction activity in the right-of-way of existing roadway segments that already experience off-site traffic noise levels impacts.

11.2 INFRASTRUCTURE CONSTRUCTION NOISE LEVELS

Using the reference construction equipment noise levels shown on Table 10-1, the highest Project infrastructure construction noise levels are estimated at 75.3 dBA L_{eq} 50 feet from the source. A review of the off-site study area roadway segments indicates that the centerline distance to adjacent land uses range from 44 to 110 feet. This translates into unmitigated infrastructure construction noise levels ranging from 68.5 to 76.4 dBA L_{eq} as shown on Table 11-1 at the adjacent land uses near the planned infrastructure routes.

TABLE 11-1: INFRASTRUCTURE CONSTRUCTION NOISE LEVELS

Roadway	Classification[1]	Distance to Adjacent Land Use (Feet)[2]	Infrastructure Construction Noise Level
Archibald Av.	Eastvale-Major Arterial (Expressway) (6)	110'	68.5
Archibald Av.	Ontario-Principal Arterial (6)	60'	73.7
Eucalyptus Av.	Ontario-Collector (4)	44'	76.4
Euclid Av.	Chino-Major Arterial (Expressway) (8)	84'	70.8
Euclid Av.	Ontario-Principal Arterial (8)	84'	70.8
Grove Av.	Ontario-Principal Arterial (4)	50'	75.3
Grove Av.	Ontario-Principal Arterial (6)	60'	73.7
Merrill Av.	Ontario-Collector (4)	44'	76.4
Walker Av.	Ontario-Collector (2)	44'	76.4

[1] Sources: Land Use Maps of the City of Chino, Ontario, and Eastvale, and aerial imagery.
[2] Distance to from centerline to adjacent land use is based upon the right-of-way distances for each roadway classification provided

These unmitigated exterior noise levels exceed the acceptable construction noise level threshold of 65 dBA L_{eq} at the nearby sensitive receiver locations. Therefore, the unmitigated infrastructure construction noise levels are considered *potentially significant*. Though construction noise is temporary, intermittent and of short duration, and will not present any long-term impacts, the planned construction noise and vibration abatement measures outlined in the Executive Summary would reduce the noise level increases produced by the construction equipment to the nearby noise-sensitive land uses. However, the infrastructure construction noise levels may remain as *potentially significant* at individual receiver locations after mitigation.

12 REFERENCES

1. **State of California.** *California Environmental Quality Act, Appendix G.* 2018.
2. **Urban Crossroads, Inc.** *Merrill Commerce Center Specific Plan Traffic Impact Analysis.* December 2019.
3. **U.S. Department of Transportation, Federal Transit Administration.** *Transit Noise and Vibration Impact Assessment.* September 2018.
4. **California Department of Transportation.** *Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects.* May 2011.
5. **California Department of Transportation Environmental Program.** *Technical Noise Supplement - A Technical Supplement to the Traffic Noise Analysis Protocol.* Sacramento, CA : s.n., September 2013.
6. **Environmental Protection Agency Office of Noise Abatement and Control.** *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety.* March 1974. EPA/ONAC 550/9/74-004.
7. **U.S. Department of Transportation, Federal Highway Administration, Office of Environment and Planning, Noise and Air Quality Branch.** *Highway Traffic Noise Analysis and Abatement Policy and Guidance.* December 2011.
8. **U.S. Department of Transportation, Federal Highway Administration.** *Highway Traffic Noise in the United States, Problem and Response.* April 2000. p. 3.
9. **U.S. Environmental Protection Agency Office of Noise Abatement and Control.** *Noise Effects Handbook-A Desk Reference to Health and Welfare Effects of Noise.* October 1979 (revised July 1981). EPA 550/9/82/106.
10. **Office of Planning and Research.** *State of California General Plan Guidelines.* 2018.
11. **State of California.** *2016 California Green Building Standards Code.* January 2017.
12. **City of Ontario.** *The Ontario Plan Safety Section, S4, Noise Hazards.* March 2014.
13. —. *Municipal Code, Title 5, Chapter 29 - Noise.*
14. **City of Chino.** *Municipal Code, Chapter 9.40 - Noise.*
15. **County of San Bernardino.** *Chino Airport Master Plan, Appendix B Environmental Overview.* 2010.
16. **San Bernardino County Airport Land Use Commission.** *Chino Airport Comprehensive Land Use Plan.* November 1991.
17. **City of Ontario.** *Ontario International Airport Land Use Compatibility Plan.* July 2018.
18. **California Court of Appeal.** *Gray v. County of Madera, F053661.* 167 Cal.App.4th 1099; - Cal.Rptr.3d, October 2008.
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20. **County of Riverside.** *General Plan Noise Element.* December 2015.
21. **American National Standards Institute (ANSI).** *Specification for Sound Level Meters ANSI S1.4-2014/IEC 61672-1:2013.*
22. **U.S. Department of Transportation, Federal Highway Administration.** *FHWA Highway Traffic Noise Prediction Model.* December 1978. FHWA-RD-77-108.

23. **California Department of Transportation Environmental Program, Office of Environmental Engineering.** *Use of California Vehicle Noise Reference Energy Mean Emission Levels (Calveno REMELs) in FHWA Highway Traffic Noise Prediction.* September 1995. TAN 95-03.

24. **California Department of Transportation.** *Traffic Noise Attenuation as a Function of Ground and Vegetation Final Report.* June 1995. FHWA/CA/TL-95/23.

25. **Urban Crossroads, Inc.** *Merrill Commerce Specific Plan Air Quality Impact Analysis.* September 2019.

13 CERTIFICATION

The contents of this noise study report represent an accurate depiction of the noise environment and impacts associated with the proposed Merrill Commerce Center Specific Plan 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 ONTARIO MUNICIPAL CODE

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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

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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.

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

	Uses		

(1) If the ambient noise level exceeds the resulting standard, the ambient noise level shall be the standard.

(2) Measurements for compliance are made on the affected property pursuant to § 5-29.15.

(b) It is unlawful for any person at any location within the incorporated area of the City to create noise, or to allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which noise causes the noise level, when measured at any location on any other property, to exceed either of the following:

(1) The noise standard for the applicable zone for any fifteen-minute (15) period; and

(2) A maximum instantaneous (single instance) noise level equal to the value of the noise standard plus twenty (20) dBA for any period of time (measured using A-weighted slow response).

(c) In the event the ambient noise level exceeds the noise standard, the maximum allowable noise level under such category shall be increased to reflect the maximum ambient noise level.

(d) The Noise Zone IV standard shall apply to that portion of residential property falling within one hundred (100) feet of a commercial property or use, if the noise originates from that commercial property or use.

(e) If the measurement location is on a boundary between two (2) different noise zones, the lower noise level standard applicable to the noise zone shall apply.

(§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.05. Interior noise standards.

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

Allowable Interior Noise Level (1)		**Allowed Equivalent Noise Level, Leq.** (2)	
Noise Zone	***Type of Land Use***	***7 a.m. to 10 p.m.***	***10 p.m. to 7 a.m.***
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 properly 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)

APPENDIX 3.2:

CITY OF CHINO MUNICIPAL CODE

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Chapter 9.40 - NOISE*

Sections:

9.40.010 - Definitions.

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

"Agricultural property" means a parcel of real property which is undeveloped for any use other than agricultural purposes.

"Ambient noise level" means the all-encompassing noise level associated with a given environment, being a composite of sounds from all sources, excluding the alleged offensive noise, at the location and approximate time at which a comparison with the alleged offensive noise is to be made.

"A-weighted sound level" means the total sound level meter with a reference pressure of twenty micro-pascals using the A-weighted network (scale) at slow response. The unit of measurement shall be defined as dBA.

"Commercial property" means a parcel of real property which is developed and used as either in or part or in whole for commercial purposes.

"Cumulative period" means an additive period of time composed of individual time segments which may be continuous or interrupted.

"Decibel (dB)" means a unit which denotes the ratio between two quantities which are proportional to power: the number of decibels corresponding to the ratio of two amounts of power is ten times the logarithm to the base ten of this ratio.

"Director of community development" means the director of community development of the city of Chino or his/her duly authorized deputy.

"Dwelling unit" means a single unit providing complete independent living facilities for one or more persons including permanent provisions for living, sleeping, eating, cooking and sanitation.

"Emergency machinery, vehicle, work or alarm" means any machinery, vehicle, work or alarm used, employed, performed or operated in an effort to protect, provide or restore safety conditions in the community or for the citizenry, or work by private or public utilities when restoring utility service.

"Fixed noise source" means a stationary device which creates sounds while fixed or motionless including but not limited to residential, agricultural, industrial and commercial machinery and equipment, pumps, fans, compressors, air conditioners and refrigeration equipment.

"Grading" means any excavating of filling of earth material or any combination thereof conducted at a site to prepare said site for construction or other improvements thereon.

"Hertz (Hz)" means the unit which describes the frequency of a function periodic in time which is the reciprocal of the period.

"Health care institution" means any hospital, convalescent home or other similar facility excluding residential.

"Impulsive noise" means a noise of short duration usually less than one second and of high intensity, with an abrupt onset and rapid decay.

"Industrial property" means a parcel of real property which is developed and used either in part or in whole for manufacturing purposes.

"Intruding noise level" means the total sound level, in decibels, created, caused, maintained or originating from an alleged offensive source at a specified location while the alleged offensive source is in operation.

"Licensed" means the issuance of a formal license or permit by the appropriate jurisdictional authority, or where no permits or licenses are issued, the sanctioning of the activity by the jurisdiction as noted in public record.

"Major roadway" means any street, avenue, boulevard or highway used for motor vehicle traffic which is owned or controlled by a public government entity.

"Mobile noise source" means any noise source other than a fixed noise source.

"Person" means a person, firm, association, co-partnership, joint venture, corporation or any entity, public or private in nature.

"Residential property" means a parcel of real property which is developed and used either in part or in whole for residential purposes, other than transient uses such as hotels and motels, and residential care facilities.

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

"Sound level meter" means an instrument meeting American National Standard Institute's Standard S1.4-1971 or most recent revision thereof for Type 2 sound level meters or an instrument and the associated recording and analyzing equipment which will provide equivalent data.

"Sound pressure level" of a sound, in decibels, means twenty times the logarithm to the base 10 of the ratio of the pressure of the sound to a reference pressure shall be explicitly stated.

"Vibration" means any movement of the earth, ground or other similar surface created by a temporal and spacial oscillation device or equipment located upon, affixed in conjunction with that surface.

(Ord. 95-10 § 1 (part), 1995.)

9.40.020 - Decibel measurement criteria.

Any decibel measurement made pursuant to the provisions of this chapter shall be based on a reference sound pressure of twenty micro-pascals as measured with a sound level meter using the A-weighted network (scale) at slow response.

(Ord. 95-10 § 1 (part), 1995.)

9.40.030 - Designated noise zones.

The properties hereinafter described are assigned to the following noise zones:

Noise Zone I: All single-, double- and multiple-family residential properties.

Noise Zone II: All commercial properties.

Noise Zone III: All manufacturing or industrial properties.

(Ord. 95-10 § 1 (part), 1995.)

9.40.040 - Exterior noise standards.

The following noise standards, unless otherwise specifically indicated, shall apply to all residential property with a designated noise zone:

These criteria are given in terms of allowable noise levels for a given period of time at the residential property boundary. Higher noise levels are permitted during the day (seven a.m. to ten p.m.) than the night (ten p.m. to seven a.m.). The table below shows the acceptable levels at residential land uses during the daytime and nighttime.

City of Chino Exterior Noise Ordinance

Criteria for Residential Properties (Zone 1)

Maximum Time of Exposure	Noise		
Metric	Noise Level Not to Exceed		
		7 am—10 pm	10 pm—7 am
30 min/hr	L50	55 dBA	50 dBA
15 min/hr	L25	60 dBA	55 dBA
5 min/hr	L8.3	65 dBA	60 dBA
1 min/hr	L1.7	70 dBA	65 dBA
Any period of time	Lmax	75 dBA	70 dBA

Each of the noise limits specified here shall be reduced by five dBA for impulse or simple tone noises, or for noises consisting of speech or music; provided, however, that if the ambient noise level exceeds the resulting standard, the ambient shall be the standard.

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

A. The noise standard for a cumulative period of more than thirty minutes in any hour; or
B. The noise standard plus five dBA for a cumulative period of more than fifteen minutes in any hour; or
C. The noise standard plus ten dBA for a cumulative period of more than five minutes in any hour; or
D. The noise standard plus fifteen dBA for a cumulative period of more than one minute in any hour; or
E. The noise standard plus twenty dBA for any period of time.

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

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

If the intruding noise source is continuous and cannot be reasonably discontinued or stopped for a time period whereby the ambient noise level can be determined, the measured noise level obtained while the source is in operation shall be compared directly to the allowable noise level standards as specified respective to the measurement location's designated land use and for the time of the day the noise level is measured.

A. The reasonableness of temporarily discontinuing the noise generation by an intruding noise source shall be determined by the director or his/her duly authorized deputy for the purpose of establishing the existing ambient noise level at the measurement location.

(Ord. 95-10 § 1 (part), 1995.)

9.40.050 - Interior noise standards.

The following noise standard, unless otherwise specifically indicated, shall apply to all residential property within all noise zones:

Each of the noise limits specified above shall be reduced by five dBA for impulse or simple tone noises or for noises consisting of speech or music provided, however, if the ambient noise level exceeds the resulting standard, the ambient shall be the standard.

It is unlawful for any person at any location within the incorporated area of the city to create any noise or to allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such a person which causes the noise level when measured within any other residential dwelling unit in any noise zone to exceed:

A. The noise standard for cumulative period of more than five minutes in any hour; or
B. The noise standard plus 5 dBA for a cumulative period of more than one minute in any hour; or
C. The noise standard plus ten dBA for any period of time.

In the event the ambient noise level exceeds any of the first two noise limit categories above, the noise standard applicable to said category shall be increased to reflect the maximum ambient noise level.

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

If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level can be determined; the same procedures specified in Section 9.40.040(E), shall be deemed proper to enforce the provisions of this section.

(Ord. 95-10 § 1 (part), 1995.)

9.40.060 - Special provisions.

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

A. Activities conducted on public parks, public playgrounds and public or private school grounds including school athletic and school entertainment events that are conducted under the sanction of the school or which a license or permit has been duly issued pursuant to any provision of the city code;
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. Such permits and licenses may restrict noise;

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 thirty minutes in any hour of its being activated;

D. Noise sources associated with or vibration created by construction, repair, remodeling or grading of any real property or during authorized seismic surveys, provided said activities do not take place outside the hours for construction as defined in Section 15.44.030 of this code, and provided the noise standard of sixty-five dBA plus the limits specified in Section 9.40.040(B) as measured on residential property and any vibration created does not endanger the public health, welfare and safety;

E. All mechanical devices, apparatus or equipment associated with agriculture operations provided:

1. Operations do not take place between eight p.m. and seven a.m. on weekdays, including Saturday, or at any time Sunday or a Federal holiday, or
2. Such operations and equipment are utilized for the protection of 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,
4. Noise sources associated with the maintenance of real property, provided said activities take place between the hours of seven a.m. to eight p.m. on any day except Sunday, or between the hours of nine a.m. and eight p.m. on Sunday,
5. Any activity to the extent regulation thereof has been preempted by state or federal law.

NOTE: Preemption may include motor vehicle, aircraft in flight, and railroad noise regulations.

(Ord. 2004-23 § 59, 2004; Ord. 95-10 § 1 (part), 1995.)

9.40.070 - Schools, churches, libraries, health care institutions—Special provisions.

It shall be deemed unlawful for any person to create any noise which causes the noise level at any school, hospital or similar health care institution, church or library while the same is in use, to exceed the noise standards specified in Section 9.40.040 prescribed for the assigned noise zone level, unreasonably interferes with the use of such institutions, or which unreasonably disturbs or annoys patients in a hospital, convalescent home or other similar health care institutions, provided conspicuous signs are displayed in three separate locations within one-tenth-mile of the institution or facility indicating a quiet zone.

(Ord. 95-10 § 1 (part), 1995.)

9.40.080 - Air conditioning and refrigeration—Special provisions.

Until January 1, 1996, the noise standards enumerated in Section 9.40.040 and 9.40.050 shall be increased five dBA where the alleged intruding noise source is an air conditioning or refrigeration system or associated equipment which was installed prior to the effective date of the ordinance codified in this chapter.

(Ord. 95-10 § 1 (part), 1995.)

9.40.090 - Noise sources generated on publicly owned property.

Notwithstanding any other provision of this code and in addition thereto, it is unlawful for any person to permit or cause any noise, sound, music or program to be emitted from any radio, tape player, tape recorder, record player, television outdoors, or any other mode on or in any publicly owned property, park or place when such noise, sound, music or program is audible to a person

of normal hearing sensitivity one hundred feet from said radio, tape player, tape recorder, record player or television.

A. As used herein, "a person of normal hearing sensitivity" means a person who has a hearing threshold level of between zero decibels and twenty-five decibels HL averaged over the frequencies 500, 1,000 and 2,000 Hertz.

B. Notwithstanding any other provision of this code, any person violating this section shall be guilty of an infraction and upon conviction thereof, is punishable by a fine not exceeding fifty dollars, for a first violation; a fine not exceeding one hundred dollars for a second violation of this section within one year; a fine not exceeding two hundred fifty dollars for each additional violation of this section within one year. A person who violates the provisions of this section shall be deemed to be guilty of a separate offense for each day, or portion thereof, during which the violation continues or is repeated.

C. Notwithstanding any other provision of this code, no citation or notice to appear shall be issued or criminal complaint shall be filed for a violation of this section unless the offending party is first given a verbal or written notification of violation by any peace officer, public officer, park ranger or other person charged with enforcing this section and the offending party given an opportunity to correct said violation.

D. This section shall not apply to broadcasting from any aircraft, vehicle or stationary sound amplifying equipment or to the use of radios, tape players, tape recorders, record players or televisions in the course of an assembly or festival for which a license has been issued or a parade for which a permit has been issued pursuant to or any other activity, assembly or function for which a permit or license has been duly issued pursuant to any provision of the city code.

(Ord. 95-10 § 1 (part), 1995.)

9.40.100 - Noise level measurement.

The location selected for measuring exterior noise levels shall be made within the affected residential unit. The measurements shall be made at a point at least four feet from the wall, ceiling or floor nearest the noise source with windows in an open position depending on the normal seasonal ventilation requirements.

(Ord. 95-10 § 1 (part), 1995.)

9.40.110 - Vibration.

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

(Ord. 95-10 § 1 (part), 1995.)

9.40.120 - Proposed developments.

Each department whose duty it is to review and approve new projects or changes to existing projects that result or may result in the creation of noise shall consult with the director prior to any such approval. If at any time the director of community development has reason to believe that a standard, regulation, action, proposed standard, regulation or action of any department respecting noise does not conform to the provisions as specified in this chapter, the director may request such department to consult with them on the advisability of revising such standard or regulation to obtain uniformity.

(Ord. 95-10 § 1 (part), 1995.)

9.40.130 - Variance procedure.

The variance procedure process shall remain as specified in the city's zoning code (Title 20).

(Ord. 95-10 § 1 (part), 1995.)

9.40.140 - Planning commission.

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

A. The magnitude of nuisance caused by the offensive noise;
B. The uses of property within the area of impingement by the noise;
C. The time factors related to study, design, financing and construction of remedial work;
D. The economic factors related to age and useful life of the equipment;
E. The general public interest, welfare and safety.

Any variance granted by the commission shall be by resolution and shall be transmitted to the director of community development for enforcement. Any violation of the terms of said variance shall be unlawful.

The planning commission may require additional acoustical studies based on the individual circumstances of each case. Such studies must be performed by a person qualified in acoustical engineering with the state of California.

Meetings of the planning commission shall be held at the call of the secretary and at such times and locations as the commission shall determine. All such meetings shall be open to the public.

(Ord. 95-10 § 1 (part), 1995.)

9.40.150 - Appeals.

The appeal procedure process shall remain as specified in the city's zoning code (Title 20).

(Ord. 95-10 § 1 (part), 1995.)

9.40.160 - Prima facie violation.

Any noise exceeding the noise level standard as specified in Section 9.40.040 and 9.40.050 or vibration exceeding the standard as specified in Section 9.40.110 of this chapter, shall be deemed to be prima facie evidence of a violation of the provisions of this chapter.

(Ord. 95-10 § 1 (part), 1995.)

9.40.170 - Violations/misdemeanors.

Any persons violating any of the provisions of this chapter shall be deemed guilty of a misdemeanor and upon conviction thereof shall be fined in an amount not to exceed an amount as specified by city council resolution, or be imprisoned in the Jail for a period not to exceed six months or by both such fine and imprisonment. Each day such violation is committed or permitted to

continue shall constitute a separate offense and shall be punishable as such.

(Ord. 95-10 § 1 (part), 1995.)

9.40.180 - Violations/additional remedies— Injunctions.

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 or vibration exceeding the allowable standards as specified in this chapter shall be deemed and is hereby declared to be a public nuisance and may be subject to abatement summarily by a restraining order or injunction issued by a court of competent jurisdiction.

Any violation of this chapter is declared to be a public nuisance and may be abated in accordance with law. The expense of this chapter is declared to be public nuisance and may be by resolution of the city council declared to be a lien against the property on which such nuisance is maintained, and such lien shall be made a personal obligation of the property owner.

(Ord. 95-10 § 1 (part), 1995.)

9.40.190 - Manner of enforcement.

The director is directed to enforce the provisions of this chapter and is authorized and may cite at his/her discretion, any person without a warrant who has reasonable cause to believe that such person has committed a misdemeanor in his/her presence.

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

Violations of this chapter shall be prosecuted in the same manner as other misdemeanor violations pursuant to Chapter 1.12; provided, however, that in the event of an initial violation of the provisions of this chapter, a written notice shall be given the alleged violator which specifies the time by which the condition shall be corrected or an application for variance shall be received by the event the cause of the violation has been removed, the condition abated or fully corrected within the time period specified in the written notice.

In the event the alleged violated cannot be located in order to serve the notice of intention to prosecute, the notice as required herein shall be deemed to be given upon mailing such notice to registered or certified mail to the alleged violator at his last known address or at the place where the violation occurred in which event the specified time period for abating the violation or applying for a variance shall commence at the date of the day following the mailing of such notice. Subsequent violations of the same offense shall result in the immediate filing of a misdemeanor complaint.

(Ord. 95-10 § 1 (part), 1995.)

9.40.200 - Delay in implementation—Fixed noise sources.

None of the provisions of this chapter shall apply to a fixed sound source during the period commencing the effective date of this chapter and terminating one-hundred eighty days thereafter.

(Ord. 95-10 § 1 (part), 1995.)

APPENDIX 5.1:

STUDY AREA PHOTOS

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JN:12005 Study Area Photos

L1 East
33, 59' 51.840000", 117, 37' 45.130000"

L1 North
33, 59' 51.800000", 117, 37' 45.110000"

L1 South
33, 59' 51.680000", 117, 37' 45.110000"

L1 West
33, 59' 51.760000", 117, 37' 45.110000"

L2 East
33, 59' 51.910000", 117, 37' 28.850000"

L2 North
33, 59' 51.880000", 117, 37' 28.850000"

JN:12005 Study Area Photos

L2 South
33, 59' 51.900000", 117, 37' 28.870000"

L2 West
33, 59' 51.820000", 117, 37' 28.900000"

L3 East
33, 59' 33.540000", 117, 37' 9.620000"

L3 North
33, 59' 33.340000", 117, 37' 9.870000"

L3 South
33, 59' 33.540000", 117, 37' 9.920000"

L3 West
33, 59' 33.430000", 117, 37' 8.990000"

JN:12005 Study Area Photos

L4 East
33, 59' 25.420000", 117, 37' 35.960000"

L4 North
33, 59' 25.430000", 117, 37' 35.930000"

L4 South
33, 59' 25.420000", 117, 37' 36.040000"

L4 West
33, 59' 25.460000", 117, 37' 35.960000"

L5 East
33, 59' 25.960000", 117, 37' 14.780000"

L5 North
33, 59' 25.830000", 117, 37' 14.840000"

L5 South
33, 59' 25.910000", 117, 37' 14.890000"

L5 West
33, 59' 25.890000", 117, 37' 14.870000"

L6 East
33, 59' 26.110000", 117, 36' 52.650000"

L6 North
33, 59' 26.090000", 117, 36' 52.700000"

L6 South
33, 59' 26.090000", 117, 36' 52.620000"

L6 West
33, 59' 26.110000", 117, 36' 52.670000"

L7 East
33, 59' 26.070000", 117, 36' 24.770000"

L7 North
33, 59' 26.040000", 117, 36' 24.740000"

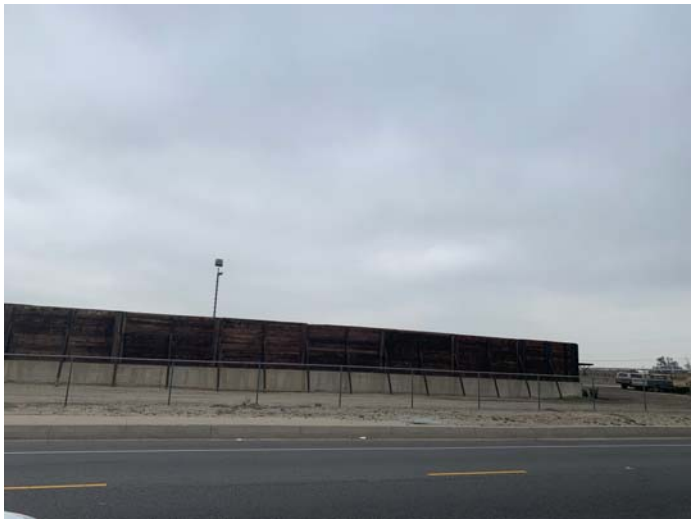
L7 South
33, 59' 25.890000", 117, 36' 24.850000"

L7 West
33, 59' 26.040000", 117, 36' 24.740000"

L8 East
33, 59' 21.930000", 117, 37' 40.740000"

L8 North
33, 59' 21.930000", 117, 37' 40.710000"

L8 South
33, 59' 21.960000", 117, 37' 40.680000"



L8 West
33, 59' 21.970000", 117, 37' 40.680000"

L9 East
33, 59' 3.830000", 117, 37' 40.570000"

L9 North
33, 59' 3.830000", 117, 37' 40.550000"

L9 South
33, 59' 3.790000", 117, 37' 40.550000"

L9 West
33, 59' 3.830000", 117, 37' 40.550000"

JN:12005 Study Area Photos

L10 East
33, 59' 0.010000", 117, 37' 21.240000"

L10 North
33, 59' 0.030000", 117, 37' 21.210000"

L10 South
33, 59' 0.030000", 117, 37' 21.240000"

L10 West
33, 59' 0.040000", 117, 37' 21.270000"

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APPENDIX 5.2:

NOISE LEVEL MEASUREMENT WORKSHEETS

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24-Hour Noise Level Measurement Summary

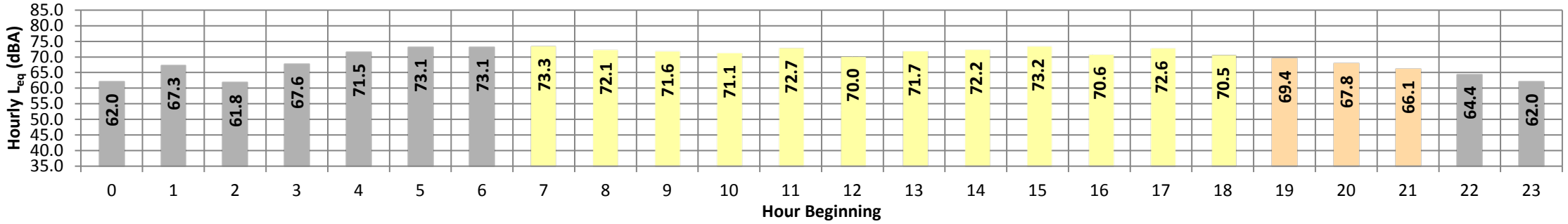
Date: Wednesday, June 26, 2019
Project: Merrill Commerce Center

Location: L1 - Located on Edison Avenue, northwest of the Project site, near existing vacant rural-residential homes and agricultural land use.

Meter: Piccolo I

JN: 12005
Analyst: R. Saber

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	62.0	88.2	38.7	75.0	71.0	64.0	59.0	51.0	48.0	42.0	41.0	39.0	62.0	10.0	72.0
	1	67.3	91.1	38.5	80.0	76.0	68.0	63.0	52.0	46.0	40.0	40.0	39.0	67.3	10.0	77.3
	2	61.8	86.9	38.5	75.0	72.0	66.0	61.0	50.0	45.0	40.0	40.0	39.0	61.8	10.0	71.8
	3	67.6	92.7	39.2	80.0	77.0	73.0	71.0	58.0	49.0	42.0	41.0	40.0	67.6	10.0	77.6
	4	71.5	93.4	41.3	82.0	80.0	77.0	75.0	70.0	62.0	48.0	45.0	42.0	71.5	10.0	81.5
	5	73.1	98.8	47.2	83.0	80.0	77.0	76.0	71.0	65.0	54.0	53.0	50.0	73.1	10.0	83.1
	6	73.1	94.2	48.9	84.0	81.0	78.0	76.0	72.0	65.0	54.0	52.0	51.0	73.1	10.0	83.1
Day	7	73.3	92.2	50.6	84.0	82.0	78.0	77.0	72.0	66.0	56.0	54.0	52.0	73.3	0.0	73.3
	8	72.1	91.2	48.8	83.0	81.0	78.0	76.0	71.0	64.0	53.0	52.0	50.0	72.1	0.0	72.1
	9	71.6	91.9	48.8	83.0	81.0	77.0	75.0	70.0	62.0	53.0	52.0	51.0	71.6	0.0	71.6
	10	71.1	92.2	48.7	83.0	80.0	77.0	74.0	68.0	60.0	52.0	51.0	50.0	71.1	0.0	71.1
	11	72.7	97.2	48.5	84.0	82.0	78.0	75.0	69.0	61.0	52.0	51.0	50.0	72.7	0.0	72.7
	12	70.0	92.3	48.0	82.0	79.0	75.0	73.0	67.0	60.0	51.0	51.0	49.0	70.0	0.0	70.0
	13	71.7	94.0	47.5	83.0	81.0	77.0	75.0	69.0	63.0	54.0	52.0	50.0	71.7	0.0	71.7
	14	72.2	94.9	48.4	83.0	81.0	77.0	75.0	70.0	63.0	56.0	54.0	51.0	72.2	0.0	72.2
	15	73.2	99.8	49.8	83.0	80.0	76.0	74.0	68.0	62.0	56.0	55.0	54.0	73.2	0.0	73.2
	16	70.6	89.5	47.1	81.0	79.0	76.0	75.0	69.0	62.0	56.0	55.0	52.0	70.6	0.0	70.6
	17	72.6	100.5	51.5	81.0	79.0	76.0	75.0	70.0	64.0	57.0	55.0	53.0	72.6	0.0	72.6
	18	70.5	96.9	51.1	80.0	78.0	75.0	74.0	69.0	63.0	54.0	53.0	52.0	70.5	0.0	70.5
Evening	19	69.4	90.7	48.8	79.0	77.0	75.0	73.0	68.0	60.0	52.0	51.0	49.0	69.4	5.0	74.4
	20	67.8	90.9	47.1	78.0	76.0	73.0	71.0	65.0	54.0	49.0	49.0	48.0	67.8	5.0	72.8
	21	66.1	89.2	46.2	77.0	75.0	72.0	70.0	60.0	52.0	48.0	48.0	47.0	66.1	5.0	71.1
Night	22	64.4	91.4	46.2	75.0	73.0	69.0	67.0	55.0	50.0	48.0	48.0	47.0	64.4	10.0	74.4
	23	62.0	87.1	45.9	73.0	71.0	67.0	64.0	54.0	50.0	47.0	47.0	46.0	62.0	10.0	72.0

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	70.0	89.5	47.1	80.0	78.0	75.0	73.0	67.0	60.0	51.0	51.0	49.0
	Max	73.3	100.5	51.5	84.0	82.0	78.0	77.0	72.0	66.0	57.0	55.0	54.0
Energy Average		71.9	Average:		82.5	80.3	76.7	74.8	69.3	62.5	54.2	52.9	51.2
Evening	Min	66.1	89.2	46.2	77.0	75.0	72.0	70.0	60.0	52.0	48.0	48.0	47.0
	Max	69.4	90.9	48.8	79.0	77.0	75.0	73.0	68.0	60.0	52.0	51.0	49.0
Energy Average		68.0	Average:		78.0	76.0	73.3	71.3	64.3	55.3	49.7	49.3	48.0
Night	Min	61.8	86.9	38.5	73.0	71.0	64.0	59.0	50.0	45.0	40.0	40.0	39.0
	Max	73.1	98.8	48.9	84.0	81.0	78.0	76.0	72.0	65.0	54.0	53.0	51.0
Energy Average		69.1	Average:		78.6	75.7	71.0	68.0	59.2	53.3	46.1	45.2	43.7

L_{eq} (dBA)		
24-Hour	*Daytime*	*Nighttime*
70.7	**71.4**	**69.1**

24-Hour CNEL (dBA)
76.1

24-Hour Noise Level Measurement Summary

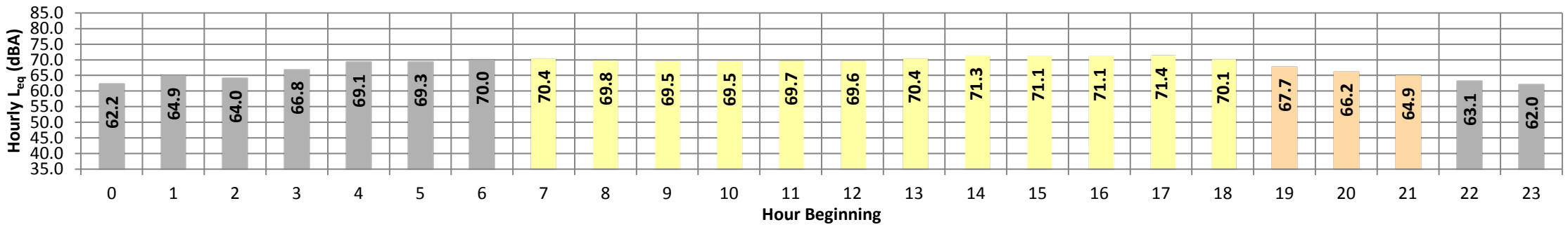
Date: Wednesday, June 26, 2019
Project: Merrill Commerce Center

Location: L2 - Located on Edison Avenue, north of the Project site, near existing rural-residential homes and agricultural land use.

Meter: Piccolo I

JN: 12005
Analyst: R. Saber

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	62.2	87.7	44.5	75.0	73.0	66.0	61.0	48.0	46.0	45.0	45.0	44.0	62.2	10.0	72.2
	1	64.9	92.0	44.2	78.0	75.0	69.0	65.0	50.0	46.0	45.0	44.0	44.0	64.9	10.0	74.9
	2	64.0	84.9	43.9	77.0	75.0	70.0	67.0	52.0	46.0	44.0	44.0	44.0	64.0	10.0	74.0
	3	66.8	87.6	44.5	78.0	76.0	73.0	71.0	60.0	48.0	45.0	45.0	44.0	66.8	10.0	76.8
	4	69.1	88.4	45.1	79.0	77.0	74.0	73.0	70.0	61.0	47.0	46.0	45.0	69.1	10.0	79.1
	5	69.3	84.6	45.2	79.0	77.0	75.0	73.0	70.0	63.0	51.0	48.0	46.0	69.3	10.0	79.3
	6	70.0	85.4	40.9	79.0	78.0	75.0	74.0	71.0	65.0	48.0	45.0	43.0	70.0	10.0	80.0
Day	7	70.4	85.4	43.6	80.0	78.0	76.0	75.0	71.0	65.0	49.0	47.0	45.0	70.4	0.0	70.4
	8	69.8	83.8	45.8	79.0	78.0	76.0	74.0	70.0	62.0	49.0	48.0	46.0	69.8	0.0	69.8
	9	69.5	87.9	47.0	79.0	78.0	75.0	74.0	69.0	61.0	50.0	49.0	48.0	69.5	0.0	69.5
	10	69.5	90.8	46.3	80.0	78.0	75.0	74.0	69.0	60.0	48.0	48.0	47.0	69.5	0.0	69.5
	11	69.7	92.2	46.1	79.0	78.0	75.0	74.0	69.0	62.0	49.0	48.0	47.0	69.7	0.0	69.7
	12	69.6	85.8	47.8	79.0	78.0	75.0	74.0	69.0	62.0	51.0	50.0	49.0	69.6	0.0	69.6
	13	70.4	86.5	49.1	79.0	78.0	76.0	75.0	71.0	65.0	53.0	52.0	50.0	70.4	0.0	70.4
	14	71.3	87.7	49.8	81.0	79.0	76.0	75.0	71.0	68.0	56.0	54.0	51.0	71.3	0.0	71.3
	15	71.1	86.5	50.6	80.0	79.0	76.0	75.0	71.0	68.0	58.0	56.0	54.0	71.1	0.0	71.1
	16	71.1	85.8	50.9	79.0	78.0	75.0	74.0	72.0	69.0	59.0	57.0	54.0	71.1	0.0	71.1
	17	71.4	92.8	51.6	79.0	77.0	75.0	74.0	72.0	69.0	58.0	56.0	53.0	71.4	0.0	71.4
	18	70.1	92.3	48.5	78.0	77.0	74.0	73.0	70.0	65.0	53.0	51.0	50.0	70.1	0.0	70.1
Evening	19	67.7	84.2	45.6	77.0	75.0	73.0	72.0	68.0	60.0	50.0	49.0	47.0	67.7	5.0	72.7
	20	66.2	84.4	45.0	76.0	74.0	72.0	71.0	66.0	55.0	47.0	47.0	46.0	66.2	5.0	71.2
	21	64.9	83.6	45.5	76.0	74.0	72.0	70.0	60.0	50.0	47.0	46.0	46.0	64.9	5.0	69.9
Night	22	63.1	84.9	45.0	75.0	73.0	70.0	68.0	54.0	47.0	45.0	45.0	45.0	63.1	10.0	73.1
	23	62.0	84.6	44.6	74.0	72.0	69.0	66.0	50.0	47.0	45.0	45.0	45.0	62.0	10.0	72.0

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	69.5	83.8	43.6	78.0	77.0	74.0	73.0	69.0	60.0	48.0	47.0	45.0
	Max	71.4	92.8	51.6	81.0	79.0	76.0	75.0	72.0	69.0	59.0	57.0	54.0
Energy Average		70.4	Average:		79.3	78.0	75.3	74.3	70.3	64.7	52.8	51.3	49.5
Evening	Min	64.9	83.6	45.0	76.0	74.0	72.0	70.0	60.0	50.0	47.0	46.0	46.0
	Max	67.7	84.4	45.6	77.0	75.0	73.0	72.0	68.0	60.0	50.0	49.0	47.0
Energy Average		66.4	Average:		76.3	74.3	72.3	71.0	64.7	55.0	48.0	47.3	46.3
Night	Min	62.0	84.6	40.9	74.0	72.0	66.0	61.0	48.0	46.0	44.0	44.0	43.0
	Max	70.0	92.0	45.2	79.0	78.0	75.0	74.0	71.0	65.0	51.0	48.0	46.0
Energy Average		66.7	Average:		77.1	75.1	71.2	68.7	58.3	52.1	46.1	45.2	44.4

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
68.9	69.8	66.7

24-Hour CNEL (dBA)
73.9

24-Hour Noise Level Measurement Summary

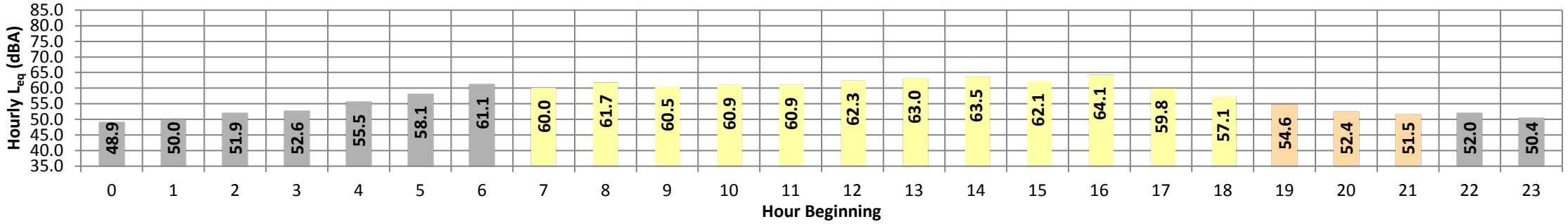
Date: Wednesday, June 26, 2019
Project: Merrill Commerce Center

Location: L3 - Located on Walker Avenue, north of the Project site, near existing rural-residential homes and agricultural land use.

Meter: Piccolo I

JN: 12005
Analyst: R. Saber

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	48.9	71.4	43.7	58.0	53.0	49.0	47.0	45.0	44.0	43.0	43.0	43.0	48.9	10.0	58.9
	1	50.0	74.6	43.7	58.0	54.0	49.0	48.0	46.0	45.0	43.0	43.0	43.0	50.0	10.0	60.0
	2	51.9	75.9	43.8	64.0	60.0	52.0	48.0	45.0	44.0	43.0	43.0	43.0	51.9	10.0	61.9
	3	52.6	74.1	43.8	66.0	62.0	53.0	48.0	45.0	44.0	43.0	43.0	43.0	52.6	10.0	62.6
	4	55.5	79.1	43.7	67.0	66.0	62.0	59.0	47.0	45.0	43.0	43.0	43.0	55.5	10.0	65.5
	5	58.1	79.6	43.7	69.0	67.0	65.0	63.0	54.0	48.0	45.0	44.0	43.0	58.1	10.0	68.1
	6	61.1	82.0	43.8	72.0	70.0	67.0	65.0	57.0	52.0	46.0	45.0	44.0	61.1	10.0	71.1
Day	7	60.0	81.0	43.8	72.0	69.0	66.0	64.0	55.0	50.0	46.0	45.0	45.0	60.0	0.0	60.0
	8	61.7	80.3	43.8	74.0	73.0	68.0	64.0	55.0	52.0	45.0	45.0	44.0	61.7	0.0	61.7
	9	60.5	81.1	43.8	72.0	70.0	66.0	63.0	56.0	52.0	46.0	45.0	43.0	60.5	0.0	60.5
	10	60.9	82.1	43.7	73.0	71.0	66.0	63.0	55.0	50.0	45.0	44.0	43.0	60.9	0.0	60.9
	11	60.9	81.3	43.7	73.0	71.0	67.0	64.0	53.0	49.0	45.0	45.0	43.0	60.9	0.0	60.9
	12	62.3	84.1	44.9	74.0	72.0	67.0	64.0	55.0	52.0	47.0	46.0	45.0	62.3	0.0	62.3
	13	63.0	82.3	46.9	74.0	73.0	69.0	67.0	59.0	55.0	51.0	50.0	48.0	63.0	0.0	63.0
	14	63.5	83.6	47.4	75.0	73.0	70.0	67.0	59.0	55.0	50.0	49.0	48.0	63.5	0.0	63.5
	15	62.1	84.3	47.5	73.0	71.0	68.0	66.0	59.0	55.0	50.0	49.0	48.0	62.1	0.0	62.1
	16	64.1	90.8	47.7	74.0	72.0	69.0	67.0	60.0	56.0	51.0	50.0	49.0	64.1	0.0	64.1
	17	59.8	79.0	45.6	71.0	69.0	66.0	63.0	56.0	54.0	50.0	49.0	47.0	59.8	0.0	59.8
	18	57.1	76.1	46.7	69.0	67.0	61.0	58.0	54.0	52.0	49.0	48.0	47.0	57.1	0.0	57.1
Evening	19	54.6	74.3	45.4	67.0	64.0	59.0	56.1	51.0	47.0	45.0	45.0	45.0	54.6	5.0	59.6
	20	52.4	75.1	43.8	65.0	61.0	51.0	49.0	46.0	45.0	45.0	45.0	43.0	52.4	5.0	57.4
	21	51.5	76.0	43.8	62.0	57.0	50.0	48.0	46.0	45.0	45.0	44.0	43.0	51.5	5.0	56.5
Night	22	52.0	74.3	43.8	65.0	61.0	51.0	47.0	45.0	44.0	43.0	43.0	43.0	52.0	10.0	62.0
	23	50.4	73.2	43.8	62.0	57.0	48.0	46.0	45.0	43.0	43.0	43.0	43.0	50.4	10.0	60.4

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	57.1	76.1	43.7	69.0	67.0	61.0	58.0	53.0	49.0	45.0	44.0	43.0
	Max	64.1	90.8	47.7	75.0	73.0	70.0	67.0	60.0	56.0	51.0	50.0	49.0
Energy Average		61.7	Average:		72.8	70.9	66.9	64.2	56.3	52.7	47.9	47.1	45.8
Evening	Min	51.5	74.3	43.8	62.0	57.0	50.0	48.0	46.0	45.0	45.0	44.0	43.0
	Max	54.6	76.0	45.4	67.0	64.0	59.0	56.1	51.0	47.0	45.0	45.0	45.0
Energy Average		53.0	Average:		64.7	60.7	53.3	51.0	47.7	45.7	45.0	44.7	43.7
Night	Min	48.9	71.4	43.7	58.0	53.0	48.0	46.0	45.0	43.0	43.0	43.0	43.0
	Max	61.1	82.0	43.8	72.0	70.0	67.0	65.0	57.0	52.0	46.0	45.0	44.0
Energy Average		55.3	Average:		64.6	61.1	55.1	52.3	47.7	45.4	43.6	43.3	43.1

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
59.5	60.9	55.3

24-Hour CNEL (dBA)
63.2

24-Hour Noise Level Measurement Summary

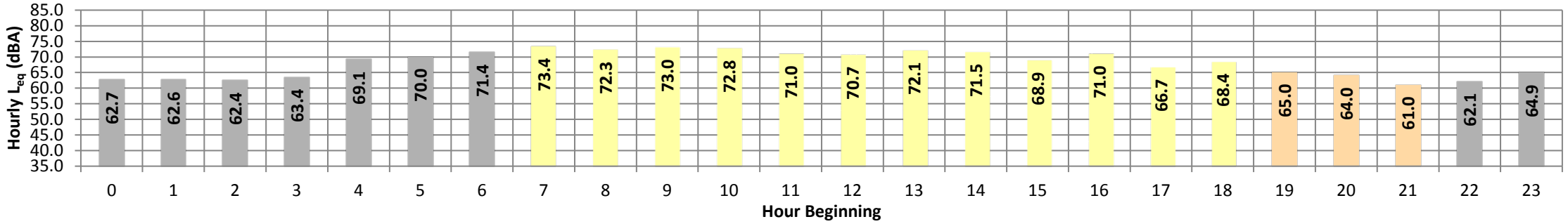
Date: Wednesday, June 26, 2019
Project: Merrill Commerce Center

Location: L4 - Located on Eucalyptus Avenue, near the northwestern boundary of the Project site, adjacent to existing rural-residential homes and agricultural land use.

Meter: Piccolo I

JN: 12005
Analyst: R. Saber

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	62.7	93.3	36.0	66.0	61.0	54.0	50.0	43.0	40.0	38.0	38.0	36.0	62.7	10.0	72.7
	1	62.6	88.7	36.0	75.0	67.0	58.0	54.0	46.0	43.0	39.0	39.0	38.0	62.6	10.0	72.6
	2	62.4	89.4	40.7	73.0	70.0	59.0	55.0	47.0	44.0	42.0	41.0	40.0	62.4	10.0	72.4
	3	63.4	88.8	40.5	77.0	72.0	59.0	54.0	47.0	44.0	42.0	41.0	40.0	63.4	10.0	73.4
	4	69.1	96.9	40.7	80.0	78.0	74.0	70.0	57.0	51.0	43.0	42.0	41.0	69.1	10.0	79.1
	5	70.0	92.8	48.7	81.0	79.0	76.0	74.0	63.0	55.0	51.0	51.0	50.0	70.0	10.0	80.0
	6	71.4	94.2	49.5	82.0	80.0	77.0	75.0	65.0	59.0	52.0	52.0	51.0	71.4	10.0	81.4
Day	7	73.4	97.8	49.1	86.0	83.0	78.0	76.0	68.0	61.0	54.0	53.0	51.0	73.4	0.0	73.4
	8	72.3	96.0	48.5	85.0	82.0	78.0	75.0	63.0	56.0	51.0	50.0	49.0	72.3	0.0	72.3
	9	73.0	96.7	48.8	85.0	82.0	76.0	73.0	63.0	57.0	52.0	51.0	50.0	73.0	0.0	73.0
	10	72.8	96.4	46.5	85.0	83.0	78.0	74.0	63.0	56.0	51.0	50.0	48.0	72.8	0.0	72.8
	11	71.0	95.7	44.9	84.0	81.0	76.0	73.0	61.0	54.0	49.0	48.0	47.0	71.0	0.0	71.0
	12	70.7	92.2	44.6	83.0	81.0	76.0	73.0	64.0	56.0	49.0	48.0	46.0	70.7	0.0	70.7
	13	72.1	96.2	50.5	85.0	82.0	77.0	74.0	65.0	61.0	54.0	53.0	52.0	72.1	0.0	72.1
	14	71.5	94.7	48.6	84.0	81.0	77.0	74.0	64.0	58.0	52.0	51.0	50.0	71.5	0.0	71.5
	15	68.9	91.8	49.2	81.0	78.0	75.0	72.0	62.0	57.0	52.0	52.0	51.0	68.9	0.0	68.9
	16	71.0	95.7	49.9	82.0	80.0	76.0	74.0	65.0	59.0	53.0	52.0	51.0	71.0	0.0	71.0
	17	66.7	90.0	47.8	79.0	76.0	72.0	68.0	59.0	55.0	51.0	51.0	50.0	66.7	0.0	66.7
	18	68.4	94.9	48.1	81.0	77.0	71.0	67.0	58.0	54.0	51.0	50.0	49.0	68.4	0.0	68.4
Evening	19	65.0	89.7	47.5	77.0	73.0	68.0	65.0	56.0	52.0	49.0	49.0	48.0	65.0	5.0	70.0
	20	64.0	88.2	46.5	77.0	73.0	64.0	58.0	51.0	50.0	48.0	47.0	47.0	64.0	5.0	69.0
	21	61.0	85.9	45.4	73.0	66.0	56.0	54.0	51.0	50.0	47.0	47.0	46.0	61.0	5.0	66.0
Night	22	62.1	90.9	42.8	73.0	68.0	59.0	55.0	48.0	47.0	45.0	44.0	43.0	62.1	10.0	72.1
	23	64.9	93.0	41.3	75.0	68.0	60.0	55.0	49.0	46.0	43.0	43.0	42.0	64.9	10.0	74.9

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	66.7	90.0	44.6	79.0	76.0	71.0	67.0	58.0	54.0	49.0	48.0	46.0
	Max	73.4	97.8	50.5	86.0	83.0	78.0	76.0	68.0	61.0	54.0	53.0	52.0
Energy Average		71.4	Average:		83.3	80.5	75.8	72.8	62.9	57.0	51.6	50.8	49.5
Evening	Min	61.0	85.9	45.4	73.0	66.0	56.0	54.0	51.0	50.0	47.0	47.0	46.0
	Max	65.0	89.7	47.5	77.0	73.0	68.0	65.0	56.0	52.0	49.0	49.0	48.0
Energy Average		63.6	Average:		75.7	70.7	62.7	59.0	52.7	50.7	48.0	47.7	47.0
Night	Min	62.1	88.7	36.0	66.0	61.0	54.0	50.0	43.0	40.0	38.0	38.0	36.0
	Max	71.4	96.9	49.5	82.0	80.0	77.0	75.0	65.0	59.0	52.0	52.0	51.0
Energy Average		66.9	Average:		75.8	71.4	64.0	60.2	51.7	47.7	43.9	43.4	42.3

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
69.5	70.6	66.9

24-Hour CNEL (dBA)
74.2

24-Hour Noise Level Measurement Summary

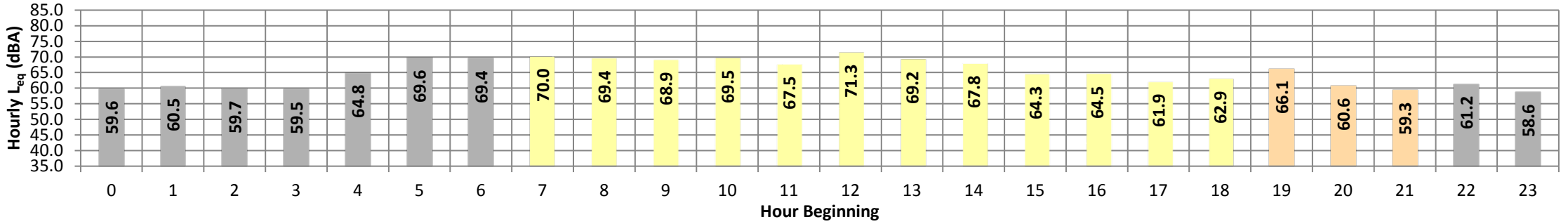
Date: Wednesday, June 26, 2019
Project: Merrill Commerce Center

Location: L5 - Located on Eucalyptus Avenue, near the northern boundary of the Project site, adjacent to existing rural-residential homes and agricultural land use.

Meter: Piccolo I

JN: 12005
Analyst: R. Saber

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	59.6	82.6	51.0	69.0	63.0	59.0	58.0	56.0	55.0	53.0	52.0	51.0	59.6	10.0	69.6
	1	60.5	85.4	49.2	71.0	67.0	62.0	59.0	54.0	53.0	51.0	50.0	50.0	60.5	10.0	70.5
	2	59.7	82.5	49.9	70.0	67.0	60.0	58.0	56.0	56.0	54.0	54.0	53.0	59.7	10.0	69.7
	3	59.5	82.6	40.0	72.0	68.0	58.0	57.0	55.0	50.0	42.0	41.0	41.0	59.5	10.0	69.5
	4	64.8	88.7	39.4	76.0	74.0	70.0	68.0	58.0	51.0	43.0	42.0	40.0	64.8	10.0	74.8
	5	69.6	95.5	45.3	80.0	77.0	73.0	71.0	63.0	58.0	51.0	49.0	47.0	69.6	10.0	79.6
	6	69.4	92.7	53.4	80.0	78.0	74.0	72.0	65.0	59.0	56.0	55.0	54.0	69.4	10.0	79.4
Day	7	70.0	90.8	54.8	82.0	79.0	75.0	73.0	66.0	60.0	57.0	56.0	55.0	70.0	0.0	70.0
	8	69.4	89.6	52.9	81.0	79.0	75.0	72.0	64.0	59.0	55.0	55.0	53.0	69.4	0.0	69.4
	9	68.9	90.1	53.7	81.0	78.0	74.0	72.0	62.0	58.0	55.0	55.0	55.0	68.9	0.0	68.9
	10	69.5	90.2	51.4	82.0	79.0	75.0	72.0	63.0	58.0	55.0	54.0	52.0	69.5	0.0	69.5
	11	67.5	88.6	52.2	80.0	77.0	73.0	70.0	61.0	57.0	55.0	54.0	53.0	67.5	0.0	67.5
	12	71.3	102.2	50.9	80.0	78.0	74.0	71.0	62.0	57.0	55.0	54.0	52.0	71.3	0.0	71.3
	13	69.2	90.3	53.8	81.0	78.0	75.0	73.0	62.0	58.0	56.0	55.0	55.0	69.2	0.0	69.2
	14	67.8	88.8	51.1	79.0	77.0	74.0	72.0	64.0	58.0	55.0	54.0	52.0	67.8	0.0	67.8
	15	64.3	82.7	45.3	76.0	73.0	70.0	68.0	60.0	57.0	50.0	48.0	47.0	64.3	0.0	64.3
	16	64.5	83.2	46.0	76.0	74.0	71.0	69.0	61.0	54.0	49.0	48.0	47.0	64.5	0.0	64.5
	17	61.9	82.2	45.3	73.0	71.0	68.0	65.0	57.0	56.0	49.0	48.0	46.0	61.9	0.0	61.9
	18	62.9	84.3	53.0	75.0	72.0	67.0	64.0	58.0	57.0	55.0	55.0	54.0	62.9	0.0	62.9
Evening	19	66.1	96.3	52.2	72.0	70.0	66.0	63.0	57.0	56.0	55.0	54.0	53.0	66.1	5.0	71.1
	20	60.6	80.6	51.9	73.0	70.0	62.0	59.0	56.0	56.0	54.0	54.0	53.0	60.6	5.0	65.6
	21	59.3	81.6	51.8	68.0	64.0	59.0	57.0	56.0	56.0	54.0	53.0	52.0	59.3	5.0	64.3
Night	22	61.2	84.0	51.6	71.0	68.0	61.0	59.0	57.0	56.0	54.0	54.0	53.0	61.2	10.0	71.2
	23	58.6	79.0	51.1	69.0	66.0	60.0	58.0	56.0	56.0	54.0	53.0	52.0	58.6	10.0	68.6

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	61.9	82.2	45.3	73.0	71.0	67.0	64.0	57.0	54.0	49.0	48.0	46.0
	Max	71.3	102.2	54.8	82.0	79.0	75.0	73.0	66.0	60.0	57.0	56.0	55.0
Energy Average		68.1	Average:		78.8	76.3	72.6	70.1	61.7	57.4	53.8	53.0	51.8
Evening	Min	59.3	80.6	51.8	68.0	64.0	59.0	57.0	56.0	56.0	54.0	53.0	52.0
	Max	66.1	96.3	52.2	73.0	70.0	66.0	63.0	57.0	56.0	55.0	54.0	53.0
Energy Average		63.1	Average:		71.0	68.0	62.3	59.7	56.3	56.0	54.3	53.7	52.7
Night	Min	58.6	79.0	39.4	69.0	63.0	58.0	57.0	54.0	50.0	42.0	41.0	40.0
	Max	69.6	95.5	53.4	80.0	78.0	74.0	72.0	65.0	59.0	56.0	55.0	54.0
Energy Average		64.7	Average:		73.1	69.8	64.1	62.2	57.8	54.9	50.9	50.0	49.0

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
66.6	67.5	64.7

24-Hour CNEL (dBA)
71.8

24-Hour Noise Level Measurement Summary

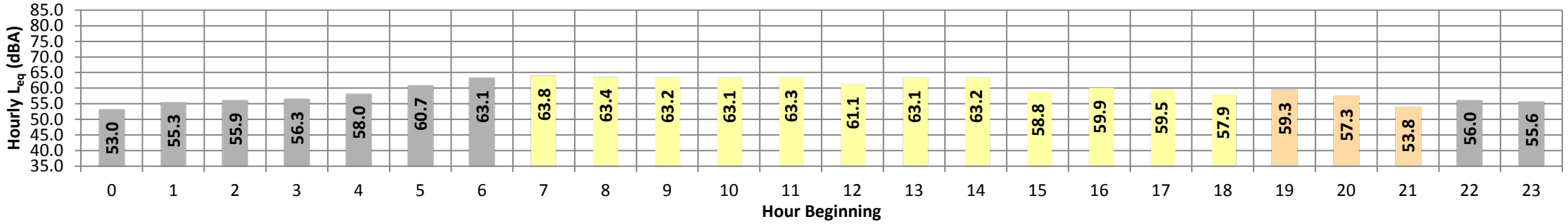
Date: Wednesday, June 26, 2019
Project: Merrill Commerce Center

Location: L6 - Located on Eucalyptus Avenue, near the northeastern boundary of the Project site, adjacent to existing rural-residential homes and agricultural land use.

Meter: Piccolo I

JN: 12005
Analyst: R. Saber

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	53.0	76.6	38.7	66.0	62.0	52.0	48.0	45.0	43.0	40.0	39.0	38.0	53.0	10.0	63.0
	1	55.3	78.6	38.7	69.0	66.0	57.0	52.0	43.0	41.0	40.0	38.0	38.0	55.3	10.0	65.3
	2	55.9	76.4	35.8	71.0	67.0	59.0	51.0	41.0	39.0	38.0	36.0	35.0	55.9	10.0	65.9
	3	56.3	77.2	35.8	70.0	67.0	59.0	54.0	42.0	38.0	35.0	35.0	35.0	56.3	10.0	66.3
	4	58.0	76.6	35.8	72.0	69.0	64.0	60.0	48.0	42.0	38.0	38.0	36.0	58.0	10.0	68.0
	5	60.7	83.3	38.7	73.0	71.0	67.0	63.0	53.0	47.0	42.0	41.0	39.0	60.7	10.0	70.7
	6	63.1	84.3	43.6	76.0	74.0	69.0	66.0	56.0	50.0	46.0	45.0	44.0	63.1	10.0	73.1
Day	7	63.8	86.5	44.8	76.0	74.0	69.0	66.0	54.0	49.0	47.0	46.0	45.0	63.8	0.0	63.8
	8	63.4	85.9	44.2	76.0	74.0	69.0	65.0	54.0	49.0	46.0	45.0	45.0	63.4	0.0	63.4
	9	63.2	83.8	43.8	76.0	74.0	69.0	66.0	55.0	50.0	46.0	45.0	44.0	63.2	0.0	63.2
	10	63.1	82.8	43.9	76.0	74.0	69.0	66.0	54.0	49.0	46.0	46.0	45.0	63.1	0.0	63.1
	11	63.3	87.4	42.8	75.0	73.0	69.0	66.0	55.0	50.0	46.0	45.0	43.0	63.3	0.0	63.3
	12	61.1	80.0	43.5	74.0	72.0	67.0	63.0	52.0	49.0	46.0	45.0	45.0	61.1	0.0	61.1
	13	63.1	84.0	44.7	75.0	73.0	69.0	66.0	56.0	51.0	47.0	47.0	46.0	63.1	0.0	63.1
	14	63.2	82.9	43.3	76.0	73.0	69.0	66.0	57.0	51.0	47.0	46.0	45.0	63.2	0.0	63.2
	15	58.8	79.4	43.3	72.0	69.0	64.0	61.0	51.0	48.0	45.0	45.0	44.0	58.8	0.0	58.8
	16	59.9	79.9	42.9	73.0	70.0	65.0	62.0	52.0	49.0	46.0	45.0	44.0	59.9	0.0	59.9
	17	59.5	79.5	44.2	72.0	69.0	65.0	62.0	52.0	50.0	48.0	47.0	46.0	59.5	0.0	59.5
	18	57.9	81.8	46.3	70.0	67.0	63.0	60.0	51.0	49.0	47.0	47.0	46.0	57.9	0.0	57.9
Evening	19	59.3	78.7	45.8	72.0	70.0	65.0	60.0	52.0	50.0	48.0	47.0	47.0	59.3	5.0	64.3
	20	57.3	77.3	44.6	71.0	68.0	60.0	55.0	49.0	48.0	46.0	46.0	45.0	57.3	5.0	62.3
	21	53.8	76.2	42.7	66.0	62.0	53.0	51.0	48.0	47.0	45.0	44.0	43.0	53.8	5.0	58.8
Night	22	56.0	75.2	42.6	71.0	67.0	58.0	54.0	47.0	45.0	44.0	43.0	43.0	56.0	10.0	66.0
	23	55.6	75.0	43.3	69.0	67.0	58.0	52.0	47.0	46.0	44.0	44.0	44.0	55.6	10.0	65.6

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	57.9	79.4	42.8	70.0	67.0	63.0	60.0	51.0	48.0	45.0	45.0	43.0
	Max	63.8	87.4	46.3	76.0	74.0	69.0	66.0	57.0	51.0	48.0	47.0	46.0
Energy Average		62.1	Average:		74.3	71.8	67.3	64.1	53.6	49.5	46.4	45.8	44.8
Evening	Min	53.8	76.2	42.7	66.0	62.0	53.0	51.0	48.0	47.0	45.0	44.0	43.0
	Max	59.3	78.7	45.8	72.0	70.0	65.0	60.0	52.0	50.0	48.0	47.0	47.0
Energy Average		57.3	Average:		69.7	66.7	59.3	55.3	49.7	48.3	46.3	45.7	45.0
Night	Min	53.0	75.0	35.8	66.0	62.0	52.0	48.0	41.0	38.0	35.0	35.0	35.0
	Max	63.1	84.3	43.6	76.0	74.0	69.0	66.0	56.0	50.0	46.0	45.0	44.0
Energy Average		58.2	Average:		70.8	67.8	60.3	55.6	46.9	43.4	40.8	39.9	39.1

L_{eq} (dBA)		
24-Hour	*Daytime*	*Nighttime*
60.5	**61.5**	**58.2**

24-Hour CNEL (dBA)
65.5

24-Hour Noise Level Measurement Summary

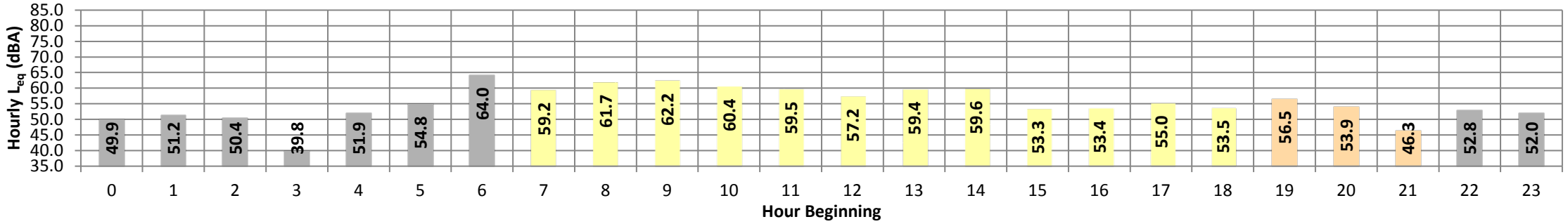
Date: Wednesday, June 26, 2019
Project: Merrill Commerce Center

Location: L7 - Located on Eucalyptus Avenue, east of the Project site, adjacent to existing rural-residential homes and agricultural land use.

Meter: Piccolo I

JN: 12005
Analyst: R. Saber

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	49.9	72.3	36.0	64.0	54.0	46.0	43.0	39.0	39.0	39.0	38.0	38.0	49.9	10.0	59.9
	1	51.2	73.8	38.6	66.0	61.0	50.0	47.0	41.0	39.0	39.0	39.0	39.0	51.2	10.0	61.2
	2	50.4	71.2	36.0	65.0	60.0	46.0	43.0	39.0	39.0	36.0	36.0	36.0	50.4	10.0	60.4
	3	39.8	59.5	36.0	48.0	47.0	42.0	40.0	39.0	37.0	36.0	36.0	36.0	39.8	10.0	49.8
	4	51.9	75.8	36.0	63.0	58.0	53.0	51.0	43.0	39.0	36.0	36.0	36.0	51.9	10.0	61.9
	5	54.8	72.6	37.4	68.0	66.0	61.0	57.0	47.0	42.0	39.0	39.0	38.0	54.8	10.0	64.8
	6	64.0	92.8	42.4	72.0	71.0	67.0	66.0	62.0	59.0	48.0	46.0	44.0	64.0	10.0	74.0
Day	7	59.2	82.5	41.5	71.0	69.0	65.0	62.0	53.0	50.0	46.0	45.0	44.0	59.2	0.0	59.2
	8	61.7	90.4	43.8	72.0	69.0	64.0	60.1	55.0	50.0	47.0	46.0	45.0	61.7	0.0	61.7
	9	62.2	88.7	40.8	73.0	70.0	66.0	63.0	56.0	52.0	44.0	43.0	42.0	62.2	0.0	62.2
	10	60.4	82.8	41.9	73.0	70.0	66.0	62.0	52.0	48.0	43.0	43.0	42.0	60.4	0.0	60.4
	11	59.5	79.3	41.8	72.0	70.0	65.0	61.0	53.0	50.0	45.0	44.0	43.0	59.5	0.0	59.5
	12	57.2	81.3	40.7	68.0	65.0	59.0	57.0	52.0	50.0	44.0	43.0	42.0	57.2	0.0	57.2
	13	59.4	80.6	45.6	72.0	69.0	64.0	61.0	55.0	52.0	49.0	48.0	46.0	59.4	0.0	59.4
	14	59.6	80.9	43.5	73.0	70.0	64.0	61.0	54.0	50.0	45.0	45.0	44.0	59.6	0.0	59.6
	15	53.3	76.2	42.7	65.0	61.0	55.0	53.0	50.0	47.0	44.0	44.0	43.0	53.3	0.0	53.3
	16	53.4	76.5	42.9	66.0	59.0	55.0	53.0	50.0	48.0	45.0	44.0	43.0	53.4	0.0	53.4
	17	55.0	78.2	42.7	68.0	64.0	56.0	53.0	49.0	47.0	44.0	44.0	43.0	55.0	0.0	55.0
	18	53.5	73.5	42.8	66.0	64.0	58.0	54.0	49.0	47.0	45.0	44.0	43.0	53.5	0.0	53.5
Evening	19	56.5	75.9	43.6	71.0	68.0	58.0	53.0	49.0	47.0	45.0	45.0	44.0	56.5	5.0	61.5
	20	53.9	74.6	42.7	67.0	61.0	54.0	51.0	47.0	46.0	44.0	44.0	43.0	53.9	5.0	58.9
	21	46.3	65.4	40.7	53.0	51.0	49.0	48.0	45.0	44.0	43.0	42.0	42.0	46.3	5.0	51.3
Night	22	52.8	74.9	39.8	67.0	57.0	50.0	47.0	43.0	42.0	40.0	40.0	40.0	52.8	10.0	62.8
	23	52.0	74.4	39.0	66.0	55.0	48.0	47.0	43.0	42.0	40.0	40.0	40.0	52.0	10.0	62.0

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	53.3	73.5	40.7	65.0	59.0	55.0	53.0	49.0	47.0	43.0	43.0	42.0
	Max	62.2	90.4	45.6	73.0	70.0	66.0	63.0	56.0	52.0	49.0	48.0	46.0
Energy Average		58.9	Average:		69.9	66.7	61.4	58.3	52.3	49.3	45.1	44.4	43.3
Evening	Min	46.3	65.4	40.7	53.0	51.0	49.0	48.0	45.0	44.0	43.0	42.0	42.0
	Max	56.5	75.9	43.6	71.0	68.0	58.0	53.0	49.0	47.0	45.0	45.0	44.0
Energy Average		53.9	Average:		63.7	60.0	53.7	50.7	47.0	45.7	44.0	43.7	43.0
Night	Min	39.8	59.5	36.0	48.0	47.0	42.0	40.0	39.0	37.0	36.0	36.0	36.0
	Max	64.0	92.8	42.4	72.0	71.0	67.0	66.0	62.0	59.0	48.0	46.0	44.0
Energy Average		56.1	Average:		64.3	58.8	51.4	49.0	44.0	42.0	39.2	38.9	38.6

L_{eq} (dBA)		
24-Hour	*Daytime*	*Nighttime*
57.5	**58.2**	**56.1**
24-Hour CNEL (dBA)		
63.0		

24-Hour Noise Level Measurement Summary

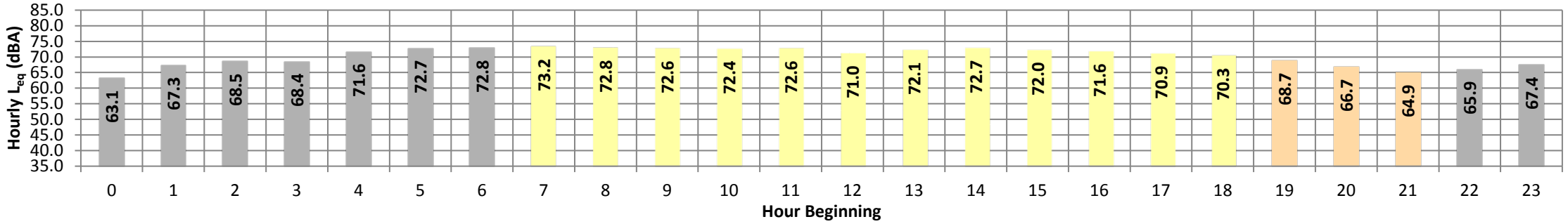
Date: Wednesday, June 26, 2019
Project: Merrill Commerce Center

Location: L8 - Located on Grove Avenue, near the northwestern boundary of the Project site, adjacent to existing rural-residential homes and agricultural land use.

Meter: Piccolo I

JN: 12005
Analyst: R. Saber

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	63.1	85.9	37.7	77.0	73.0	68.0	63.0	50.0	41.0	38.0	37.0	37.0	63.1	10.0	73.1
	1	67.3	86.9	37.7	81.0	79.0	72.0	68.0	54.0	43.0	39.0	38.0	37.0	67.3	10.0	77.3
	2	68.5	94.4	37.7	81.0	78.0	74.0	72.0	58.0	47.0	39.0	39.0	37.0	68.5	10.0	78.5
	3	68.4	87.6	37.7	80.0	78.0	75.0	72.0	62.0	51.0	39.0	39.0	37.0	68.4	10.0	78.4
	4	71.6	92.2	39.4	83.0	81.0	77.0	76.0	70.0	61.0	47.0	44.0	40.0	71.6	10.0	81.6
	5	72.7	92.7	46.6	83.0	81.0	78.0	77.0	72.0	68.0	55.0	53.0	50.0	72.7	10.0	82.7
	6	72.8	88.6	47.7	83.0	81.0	78.0	77.0	73.0	67.0	55.0	53.0	50.0	72.8	10.0	82.8
Day	7	73.2	89.7	46.3	83.0	82.0	79.0	78.0	73.0	67.0	54.0	51.0	48.0	73.2	0.0	73.2
	8	72.8	87.5	46.9	83.0	82.0	80.0	78.0	72.0	65.0	52.0	50.0	48.0	72.8	0.0	72.8
	9	72.6	90.2	48.4	83.0	82.0	79.0	77.0	71.0	62.0	52.0	51.0	49.0	72.6	0.0	72.6
	10	72.4	93.2	49.1	83.0	81.0	79.0	77.0	71.0	63.0	54.0	52.0	50.0	72.4	0.0	72.4
	11	72.6	96.9	46.2	83.0	81.0	79.0	77.0	71.0	63.0	52.0	50.0	47.0	72.6	0.0	72.6
	12	71.0	86.0	42.5	81.0	80.0	78.0	76.0	70.0	61.0	48.0	46.0	44.0	71.0	0.0	71.0
	13	72.1	88.9	47.8	82.0	81.0	78.0	76.0	71.0	65.0	54.0	52.0	50.0	72.1	0.0	72.1
	14	72.7	93.6	47.6	82.0	80.0	78.0	76.0	72.0	68.0	55.0	53.0	50.0	72.7	0.0	72.7
	15	72.0	88.2	48.9	81.0	80.0	77.0	76.0	72.0	67.0	55.0	53.0	51.0	72.0	0.0	72.0
	16	71.6	86.2	47.1	81.0	79.0	77.0	76.0	72.0	67.0	53.0	51.0	49.0	71.6	0.0	71.6
	17	70.9	92.3	46.6	80.0	79.0	76.0	75.0	71.0	63.0	51.0	50.0	48.0	70.9	0.0	70.9
	18	70.3	96.9	47.2	80.0	78.0	76.0	74.0	68.0	58.0	51.0	50.0	48.0	70.3	0.0	70.3
Evening	19	68.7	85.8	45.8	80.0	78.0	75.0	74.0	65.0	56.0	49.0	48.0	47.0	68.7	5.0	73.7
	20	66.7	85.1	45.0	78.0	76.0	73.0	71.0	62.0	53.0	47.0	46.0	45.0	66.7	5.0	71.7
	21	64.9	83.2	42.9	77.0	75.0	72.0	69.0	57.0	50.0	46.0	45.0	44.0	64.9	5.0	69.9
Night	22	65.9	89.1	41.3	79.0	76.0	71.0	68.0	54.0	46.0	43.0	42.0	41.0	65.9	10.0	75.9
	23	67.4	94.4	40.7	78.0	76.0	73.0	70.0	57.0	48.0	43.0	42.0	41.0	67.4	10.0	77.4

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	70.3	86.0	42.5	80.0	78.0	76.0	74.0	68.0	58.0	48.0	46.0	44.0
	Max	73.2	96.9	49.1	83.0	82.0	80.0	78.0	73.0	68.0	55.0	53.0	51.0
Energy Average		72.1	Average:		81.8	80.4	78.0	76.3	71.2	64.1	52.6	50.8	48.5
Evening	Min	64.9	83.2	42.9	77.0	75.0	72.0	69.0	57.0	50.0	46.0	45.0	44.0
	Max	68.7	85.8	45.8	80.0	78.0	75.0	74.0	65.0	56.0	49.0	48.0	47.0
Energy Average		67.0	Average:		78.3	76.3	73.3	71.3	61.3	53.0	47.3	46.3	45.3
Night	Min	63.1	85.9	37.7	77.0	73.0	68.0	63.0	50.0	41.0	38.0	37.0	37.0
	Max	72.8	94.4	47.7	83.0	81.0	78.0	77.0	73.0	68.0	55.0	53.0	50.0
Energy Average		69.6	Average:		80.6	78.1	74.0	71.4	61.1	52.4	44.2	43.0	41.1

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
70.9	71.5	69.6

24-Hour CNEL (dBA)
76.5

24-Hour Noise Level Measurement Summary

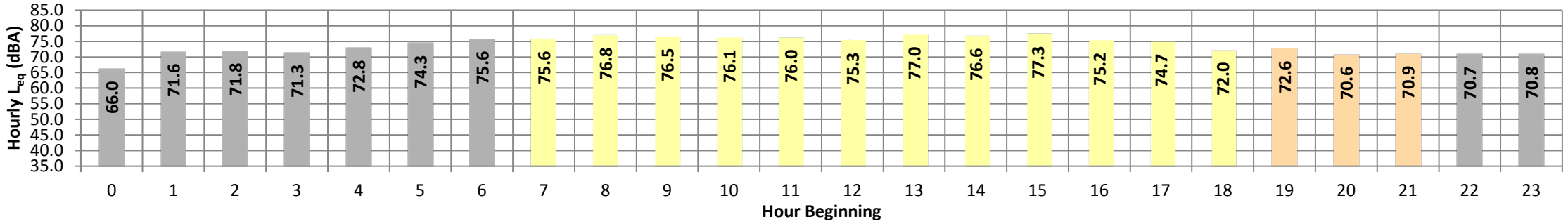
Date: Wednesday, June 26, 2019
Project: Merrill Commerce Center

Location: L9 - Located on Grove Avenue, near the southwestern boundary of the Project site, adjacent to existing rural-residential homes and agricultural land use.

Meter: Piccolo I

JN: 12005
Analyst: R. Saber

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	66.0	89.8	47.4	79.0	76.0	71.0	67.0	54.0	50.0	49.0	48.0	48.0	66.0	10.0	76.0
	1	71.6	91.2	48.0	84.0	81.0	76.0	73.0	69.0	60.0	49.0	48.0	48.0	71.6	10.0	81.6
	2	71.8	96.2	48.4	83.0	81.0	76.0	74.0	67.0	60.0	50.0	49.0	48.0	71.8	10.0	81.8
	3	71.3	90.1	47.4	84.0	81.0	76.0	75.0	67.0	60.0	48.0	48.0	47.0	71.3	10.0	81.3
	4	72.8	92.8	46.9	84.0	81.0	78.0	77.0	72.0	64.0	49.0	48.0	47.0	72.8	10.0	82.8
	5	74.3	92.1	48.9	85.0	83.0	80.0	78.0	74.0	69.0	56.0	54.0	50.0	74.3	10.0	84.3
	6	75.6	93.1	44.5	86.0	84.0	81.0	80.0	75.0	70.0	56.0	53.0	47.0	75.6	10.0	85.6
Day	7	75.6	92.6	45.0	86.0	84.0	81.0	79.0	75.0	70.0	60.0	56.0	48.0	75.6	0.0	75.6
	8	76.8	99.2	42.8	87.0	85.0	82.0	80.0	74.0	68.0	55.0	52.0	46.0	76.8	0.0	76.8
	9	76.5	99.6	46.7	88.0	86.0	82.0	80.0	73.0	67.0	55.0	53.0	49.0	76.5	0.0	76.5
	10	76.1	98.8	51.2	87.0	85.0	81.0	79.0	73.0	65.0	55.0	54.0	52.0	76.1	0.0	76.1
	11	76.0	96.7	49.8	87.0	85.0	81.0	79.0	73.0	66.0	55.0	53.0	52.0	76.0	0.0	76.0
	12	75.3	95.7	48.7	87.0	85.0	81.0	79.0	73.0	65.0	52.0	51.0	50.0	75.3	0.0	75.3
	13	77.0	97.9	52.8	89.0	86.0	82.0	80.0	75.0	70.0	57.0	56.0	54.0	77.0	0.0	77.0
	14	76.6	100.3	51.3	87.0	84.0	81.0	79.0	75.0	71.0	59.0	56.0	53.0	76.6	0.0	76.6
	15	77.3	98.5	50.2	88.0	85.0	81.0	79.0	75.0	70.0	55.0	53.0	51.0	77.3	0.0	77.3
	16	75.2	95.3	49.7	84.0	83.0	80.0	79.0	75.0	71.0	56.0	54.0	51.0	75.2	0.0	75.2
	17	74.7	96.8	48.4	85.0	82.0	79.0	78.0	74.0	67.0	53.0	52.0	49.0	74.7	0.0	74.7
	18	72.0	89.1	46.3	82.0	80.0	78.0	77.0	71.0	61.0	51.0	50.0	48.0	72.0	0.0	72.0
Evening	19	72.6	92.9	44.4	84.0	81.0	78.0	76.0	71.0	60.0	49.0	48.0	46.0	72.6	5.0	77.6
	20	70.6	90.3	43.4	82.0	79.0	76.0	75.0	67.0	56.0	46.0	45.0	44.0	70.6	5.0	75.6
	21	70.9	98.2	43.4	82.0	79.0	76.0	73.0	63.0	53.0	47.0	45.0	44.0	70.9	5.0	75.9
Night	22	70.7	96.5	47.9	82.0	79.0	75.0	72.0	59.0	51.0	49.0	48.0	48.0	70.7	10.0	80.7
	23	70.8	97.8	47.8	81.0	79.0	76.0	74.0	62.0	52.0	49.0	49.0	48.0	70.8	10.0	80.8

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	72.0	89.1	42.8	82.0	80.0	78.0	77.0	71.0	61.0	51.0	50.0	46.0
	Max	77.3	100.3	52.8	89.0	86.0	82.0	80.0	75.0	71.0	60.0	56.0	54.0
Energy Average		75.9	Average:		86.4	84.2	80.8	79.0	73.8	67.6	55.3	53.3	50.3
Evening	Min	70.6	90.3	43.4	82.0	79.0	76.0	73.0	63.0	53.0	46.0	45.0	44.0
	Max	72.6	98.2	44.4	84.0	81.0	78.0	76.0	71.0	60.0	49.0	48.0	46.0
Energy Average		71.5	Average:		82.7	79.7	76.7	74.7	67.0	56.3	47.3	46.0	44.7
Night	Min	66.0	89.8	44.5	79.0	76.0	71.0	67.0	54.0	50.0	48.0	48.0	47.0
	Max	75.6	97.8	48.9	86.0	84.0	81.0	80.0	75.0	70.0	56.0	54.0	50.0
Energy Average		72.3	Average:		83.1	80.6	76.6	74.4	66.6	59.6	50.6	49.4	47.9

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
74.4	75.3	72.3

24-Hour CNEL (dBA)
79.5

24-Hour Noise Level Measurement Summary

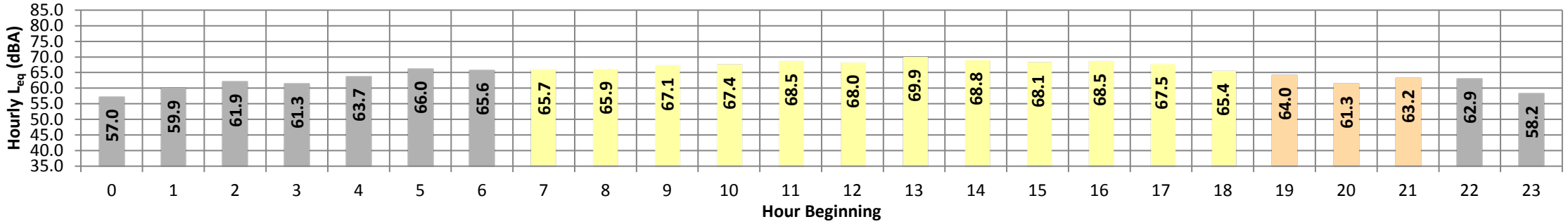
Date: Wednesday, June 26, 2019
Project: Merrill Commerce Center

Location: L10 - Located on Grove Avenue, near the southern boundary of the Project site, adjacent to existing rural-residential homes and agricultural land use.

Meter: Piccolo I

JN: 12005
Analyst: R. Saber

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	57.0	77.5	37.7	71.0	68.0	62.0	59.0	47.0	41.0	38.0	38.0	38.0	57.0	10.0	67.0
	1	59.9	78.3	37.9	73.0	71.0	67.0	62.0	50.0	42.0	38.0	38.0	38.0	59.9	10.0	69.9
	2	61.9	87.8	37.9	73.0	72.0	68.0	65.0	54.0	46.0	39.0	38.0	38.0	61.9	10.0	71.9
	3	61.3	78.6	37.9	73.0	72.0	69.0	66.0	55.0	46.0	38.0	38.0	38.0	61.3	10.0	71.3
	4	63.7	82.6	38.0	74.0	72.0	70.0	68.0	63.0	54.0	42.0	40.0	38.0	63.7	10.0	73.7
	5	66.0	81.9	40.4	75.0	74.0	72.0	70.0	66.0	62.0	49.0	46.0	42.0	66.0	10.0	76.0
	6	65.6	78.3	41.9	75.0	74.0	72.0	70.0	66.0	60.0	49.0	47.0	44.0	65.6	10.0	75.6
Day	7	65.7	79.1	43.8	75.0	74.0	72.0	70.0	66.0	61.0	49.0	47.0	45.0	65.7	0.0	65.7
	8	65.9	80.6	42.8	76.0	75.0	72.0	71.0	65.0	58.0	47.0	46.0	44.0	65.9	0.0	65.9
	9	67.1	82.8	40.9	77.0	76.0	74.0	72.0	66.0	59.0	48.0	46.0	42.0	67.1	0.0	67.1
	10	67.4	84.4	42.4	78.0	76.0	74.0	72.0	66.0	59.0	50.0	48.0	45.0	67.4	0.0	67.4
	11	68.5	83.7	44.9	78.0	77.0	75.0	73.0	68.0	61.0	50.0	49.0	46.0	68.5	0.0	68.5
	12	68.0	84.0	45.3	78.0	76.0	74.0	73.0	67.0	60.0	50.0	48.0	46.0	68.0	0.0	68.0
	13	69.9	86.3	45.6	80.0	78.0	75.0	74.0	70.0	65.0	54.0	52.0	48.0	69.9	0.0	69.9
	14	68.8	85.6	47.9	79.0	77.0	75.0	73.0	68.0	63.0	53.0	52.0	49.0	68.8	0.0	68.8
	15	68.1	81.5	49.6	77.0	76.0	74.0	72.0	68.0	64.0	55.0	53.0	51.0	68.1	0.0	68.1
	16	68.5	85.3	49.2	78.0	76.0	74.0	72.0	68.0	64.0	54.0	53.0	51.0	68.5	0.0	68.5
	17	67.5	94.0	48.5	77.0	75.0	72.0	71.0	66.0	59.0	51.0	51.0	49.0	67.5	0.0	67.5
	18	65.4	81.2	47.9	76.0	75.0	72.0	70.0	63.0	56.0	50.0	49.0	48.0	65.4	0.0	65.4
Evening	19	64.0	80.0	45.9	76.0	74.0	70.0	68.0	61.0	53.0	48.0	48.0	47.0	64.0	5.0	69.0
	20	61.3	79.4	44.9	73.0	71.0	67.0	65.0	56.0	51.0	46.0	46.0	45.0	61.3	5.0	66.3
	21	63.2	82.1	41.9	76.0	74.0	70.0	66.0	57.0	50.0	44.0	43.0	42.0	63.2	5.0	68.2
Night	22	62.9	92.1	39.7	73.0	70.0	67.0	64.0	53.0	45.0	41.0	40.0	39.0	62.9	10.0	72.9
	23	58.2	79.2	37.9	70.0	68.0	65.0	63.0	51.0	44.0	39.0	38.0	38.0	58.2	10.0	68.2

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	65.4	79.1	40.9	75.0	74.0	72.0	70.0	63.0	56.0	47.0	46.0	42.0
	Max	69.9	94.0	49.6	80.0	78.0	75.0	74.0	70.0	65.0	55.0	53.0	51.0
Energy Average		67.8	Average:		77.4	75.9	73.6	71.9	66.8	60.8	50.9	49.5	47.0
Evening	Min	61.3	79.4	41.9	73.0	71.0	67.0	65.0	56.0	50.0	44.0	43.0	42.0
	Max	64.0	82.1	45.9	76.0	74.0	70.0	68.0	61.0	53.0	48.0	48.0	47.0
Energy Average		63.0	Average:		75.0	73.0	69.0	66.3	58.0	51.3	46.0	45.7	44.7
Night	Min	57.0	77.5	37.7	70.0	68.0	62.0	59.0	47.0	41.0	38.0	38.0	38.0
	Max	66.0	92.1	41.9	75.0	74.0	72.0	70.0	66.0	62.0	49.0	47.0	44.0
Energy Average		62.7	Average:		73.0	71.2	68.0	65.2	56.1	48.9	41.4	40.3	39.2

L_{eq} (dBA)

24-Hour	*Daytime*	*Nighttime*
66.0	**67.1**	**62.7**

24-Hour CNEL (dBA)

70.3

APPENDIX 7.1:

OFF-SITE TRAFFIC NOISE LEVEL CONTOURS

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Euclid Av.
Road Segment: n/o SR-60
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,972 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,867 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.35	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	77.72	-6.21	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-8.12	2.47	-1.20	-5.21	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	68.8	65.8	64.4	71.6	71.9
Medium Trucks:	72.8	71.4	69.0	67.4	74.5	74.8
Heavy Trucks:	76.1	74.7	71.2	71.3	78.2	78.5
Vehicle Noise:	78.5	77.1	74.0	73.3	80.4	80.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	414	893	1,924	4,144
CNEL:	431	929	2,002	4,312

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Euclid Av.
Road Segment: n/o SR-60 EB Ramps
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,326 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,815 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.76	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-6.80	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.71	2.47	-1.20	-5.21	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	70.2	67.2	65.7	73.0	73.3
Medium Trucks:	73.9	72.5	70.1	68.5	75.7	76.0
Heavy Trucks:	76.8	75.4	71.8	71.9	78.9	79.1
Vehicle Noise:	79.4	78.0	74.9	74.2	81.3	81.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	475	1,024	2,206	4,752
CNEL:	495	1,066	2,296	4,946

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Euclid Av.
Road Segment: n/o Walnut Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,765 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,850 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.82	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-6.75	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.65	2.47	-1.20	-5.21	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	70.3	67.2	65.8	73.0	73.3
Medium Trucks:	74.0	72.6	70.2	68.6	75.7	76.0
Heavy Trucks:	76.9	75.4	71.9	72.0	79.0	79.2
Vehicle Noise:	79.4	78.0	74.9	74.3	81.3	81.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	479	1,032	2,224	4,791
CNEL:	499	1,074	2,315	4,987

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Euclid Av.
Road Segment: n/o Riverside Dr.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,462 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,667 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.53	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-7.03	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.94	2.47	-1.20	-5.21	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	70.0	66.9	65.5	72.8	73.0
Medium Trucks:	73.7	72.3	69.9	68.3	75.4	75.7
Heavy Trucks:	76.6	75.2	71.6	71.7	78.7	78.9
Vehicle Noise:	79.1	77.8	74.7	74.0	81.1	81.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	458	987	2,127	4,583
CNEL:	477	1,028	2,214	4,771

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Euclid Av.
Road Segment: n/o Chino Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,576	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,357	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.99	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-7.57	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.48	2.47	-1.20	*-5.21*	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	69.4	66.4	65.0	72.2	72.5
Medium Trucks:	73.1	71.8	69.4	67.7	74.9	75.2
Heavy Trucks:	76.0	74.6	71.1	71.2	78.1	78.4
Vehicle Noise:	78.6	77.2	74.1	73.5	80.5	80.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	422	909	1,959	4,221
CNEL:	439	947	2,039	4,394

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Euclid Av.
Road Segment: n/o Schaefer Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,892	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,542	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.32	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-7.24	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.15	2.47	-1.20	*-5.21*	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	69.8	66.7	65.3	72.5	72.8
Medium Trucks:	73.5	72.1	69.7	68.1	75.2	75.5
Heavy Trucks:	76.4	74.9	71.4	71.5	78.5	78.7
Vehicle Noise:	78.9	77.5	74.4	73.8	80.8	81.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	444	956	2,060	4,439
CNEL:	462	995	2,145	4,620

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Euclid Av.
Road Segment: n/o Edison Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,744	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,689	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.56	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-7.00	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.91	2.47	-1.20	*-5.21*	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	70.0	67.0	65.5	72.8	73.1
Medium Trucks:	73.7	72.3	69.9	68.3	75.5	75.8
Heavy Trucks:	76.6	75.2	71.6	71.7	78.7	78.9
Vehicle Noise:	79.2	77.8	74.7	74.0	81.1	81.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	461	993	2,139	4,609
CNEL:	480	1,034	2,227	4,797

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Euclid Av.
Road Segment: n/o Eucalyptus Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,963	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,468	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.19	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-7.37	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.28	2.47	-1.20	*-5.21*	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:	70.9	69.6	66.6	65.2	72.4	72.7
Medium Trucks:	73.3	72.0	69.6	67.9	75.1	75.4
Heavy Trucks:	76.2	74.8	71.3	71.4	78.3	78.6
Vehicle Noise:	78.8	77.4	74.3	73.7	80.7	81.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	435	938	2,020	4,352
CNEL:	453	976	2,103	4,530

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Euclid Av.
Road Segment: n/o Merrill Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,921	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,544	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	0.45	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-8.11	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.02	2.47	-1.20	*-5.21*	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:	73.5	72.2	69.2	67.7	75.0	75.3
Medium Trucks:	75.6	74.2	71.8	70.1	77.3	77.6
Heavy Trucks:	77.6	76.2	72.7	72.8	79.7	80.0
Vehicle Noise:	80.7	79.3	76.2	75.5	82.5	82.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	576	1,241	2,674	5,761
CNEL:	600	1,293	2,785	6,001

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Euclid Av.
Road Segment: n/o Kimball Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,575	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,676	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	0.67	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-7.89	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.80	2.47	-1.20	*-5.21*	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	72.4	69.4	68.0	75.2	75.5
Medium Trucks:	75.8	74.4	72.0	70.4	77.5	77.8
Heavy Trucks:	77.9	76.4	72.9	73.0	80.0	80.2
Vehicle Noise:	80.9	79.5	76.4	75.7	82.8	83.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	596	1,284	2,766	5,958
CNEL:	621	1,337	2,881	6,206

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Euclid Av.
Road Segment: n/o Bickmore Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,636	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,724	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-1.24	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-9.80	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-11.71	2.47	-1.20	*-5.21*	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	70.5	67.5	66.0	73.3	73.6
Medium Trucks:	73.9	72.5	70.1	68.5	75.6	75.9
Heavy Trucks:	76.0	74.5	71.0	71.1	78.1	78.3
Vehicle Noise:	79.0	77.6	74.5	73.8	80.9	81.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	445	958	2,063	4,445
CNEL:	463	998	2,149	4,630

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Euclid Av.
Road Segment: n/o Pine Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,091	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,681	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-1.35	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-9.91	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-11.82	2.47	-1.20	*-5.21*	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	70.4	67.4	65.9	73.2	73.5
Medium Trucks:	73.8	72.4	70.0	68.3	75.5	75.8
Heavy Trucks:	75.8	74.4	70.9	71.0	77.9	78.2
Vehicle Noise:	78.9	77.5	74.4	73.7	80.7	81.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	437	942	2,028	4,370
CNEL:	455	981	2,113	4,552

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Euclid Av.
Road Segment: s/o Pine Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,546	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,072	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	1.27	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-7.29	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.20	2.47	-1.20	*-5.21*	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:	74.3	73.0	70.0	68.6	75.8	76.1
Medium Trucks:	76.4	75.0	72.6	71.0	78.1	78.4
Heavy Trucks:	78.5	77.0	73.5	73.6	80.6	80.8
Vehicle Noise:	81.5	80.1	77.0	76.3	83.4	83.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	653	1,407	3,032	6,533
CNEL:	680	1,466	3,158	6,805

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Grove Av.
Road Segment: n/o SR-60

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,434	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,744	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.65	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-6.91	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.82	0.61	-1.20	*-5.34*	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:	69.5	68.3	65.2	63.8	71.0	71.3
Medium Trucks:	72.0	70.6	68.2	66.5	73.7	74.0
Heavy Trucks:	74.8	73.4	69.9	70.0	76.9	77.2
Vehicle Noise:	77.4	76.0	72.9	72.3	79.3	79.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	251	541	1,165	2,510
CNEL:	261	563	1,213	2,613

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Grove Av.
Road Segment: n/o SR-60 EB Ramps

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,308	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,256	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.80	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.76	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.67	0.61	-1.20	*-5.34*	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:	68.6	67.4	64.4	62.9	70.2	70.5
Medium Trucks:	71.1	69.7	67.3	65.7	72.8	73.2
Heavy Trucks:	74.0	72.6	69.0	69.1	76.1	76.3
Vehicle Noise:	76.6	75.2	72.1	71.4	78.5	78.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	220	475	1,022	2,203
CNEL:	229	494	1,064	2,293

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Grove Av.
Road Segment: n/o Walnut Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,747	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,813	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.15	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-8.71	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.62	0.61	-1.20	*-5.34*	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:	67.7	66.5	63.4	62.0	69.2	69.5
Medium Trucks:	70.1	68.8	66.4	64.7	71.9	72.2
Heavy Trucks:	73.0	71.6	68.1	68.2	75.1	75.4
Vehicle Noise:	75.6	74.2	71.1	70.5	77.5	77.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	190	410	884	1,904
CNEL:	198	427	920	1,982

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Grove Av.
Road Segment: n/o Riverside Dr.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,949 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,271 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-1.69	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-10.25	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-12.16	0.61	-1.20	*-5.34*	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:	66.2	64.9	61.9	60.4	67.7	68.0
Medium Trucks:	68.6	67.2	64.8	63.2	70.3	70.7
Heavy Trucks:	71.5	70.1	66.5	66.6	73.6	73.8
Vehicle Noise:	74.1	72.7	69.6	68.9	76.0	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	150	324	697	1,503
CNEL:	156	337	726	1,564

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Grove Av.
Road Segment: n/o Chino Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,733 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	855 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-3.87	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-12.43	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-14.34	1.46	-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:	66.6	65.3	62.3	60.8	68.1	68.4
Medium Trucks:	68.8	67.4	65.1	63.4	70.6	70.9
Heavy Trucks:	71.3	69.9	66.3	66.4	73.4	73.6
Vehicle Noise:	74.1	72.7	69.6	68.9	76.0	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	125	270	582	1,254
CNEL:	131	281	606	1,306

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Grove Av.
Road Segment: n/o Schaefer Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,742 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	776 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-4.29	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-12.85	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-14.76	1.46	-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:	66.1	64.9	61.9	60.4	67.7	68.0
Medium Trucks:	68.4	67.0	64.6	63.0	70.1	70.5
Heavy Trucks:	70.9	69.5	65.9	66.0	73.0	73.2
Vehicle Noise:	73.7	72.3	69.2	68.5	75.6	75.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	118	253	546	1,176
CNEL:	122	264	568	1,224

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Grove Av.
Road Segment: n/o Edison Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,618 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	687 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-4.82	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-13.38	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-15.29	1.46	-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:	65.6	64.4	61.3	59.9	67.2	67.4
Medium Trucks:	67.9	66.5	64.1	62.5	69.6	69.9
Heavy Trucks:	70.3	68.9	65.4	65.5	72.4	72.7
Vehicle Noise:	73.1	71.8	68.7	68.0	75.0	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	108	233	503	1,084
CNEL:	113	243	524	1,128

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Grove Av.
Road Segment: n/o Eucalyptus Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,511	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	678	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	62	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-4.88	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-13.44	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-15.35	1.46	-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:	65.6	64.3	61.3	59.8	67.1	67.4
Medium Trucks:	67.8	66.4	64.0	62.4	69.6	69.9
Heavy Trucks:	70.3	68.9	65.3	65.4	72.4	72.6
Vehicle Noise:	73.1	71.7	68.6	67.9	75.0	75.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	107	232	499	1,075
CNEL:	112	241	519	1,119

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Grove Av.
Road Segment: n/o Street A

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,001	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	478	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	62	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-6.39	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-14.96	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-16.86	1.46	-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:	64.0	62.8	59.8	58.3	65.6	65.9
Medium Trucks:	66.3	64.9	62.5	60.9	68.0	68.4
Heavy Trucks:	68.8	67.4	63.8	63.9	70.9	71.1
Vehicle Noise:	71.6	70.2	67.1	66.4	73.5	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	85	183	395	851
CNEL:	89	191	411	886

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Grove Av.
Road Segment: n/o Merrill Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,001	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	478	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	62	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-6.39	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-14.96	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-16.86	1.46	-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:	64.0	62.8	59.8	58.3	65.6	65.9
Medium Trucks:	66.3	64.9	62.5	60.9	68.0	68.4
Heavy Trucks:	68.8	67.4	63.8	63.9	70.9	71.1
Vehicle Noise:	71.6	70.2	67.1	66.4	73.5	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	85	183	395	851
CNEL:	89	191	411	886

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Archibald Av.
Road Segment: n/o SR-60

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,637	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,203	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	0.24	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-8.32	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.23	0.61	-1.20	*-5.34*	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	68.6	65.6	64.1	71.4	71.7
Medium Trucks:	72.1	70.7	68.3	66.7	73.8	74.1
Heavy Trucks:	74.6	73.1	69.6	69.7	76.7	76.9
Vehicle Noise:	77.4	76.0	72.9	72.2	79.3	79.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	248	535	1,152	2,483
CNEL:	259	557	1,200	2,585

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o SR-60 EB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,490 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,271 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.37	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-8.19	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-10.10	0.61	-1.20	-5.34	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:	70.0	68.7	65.7	64.2	71.5	71.8
Medium Trucks:	72.2	70.8	68.4	66.8	74.0	74.3
Heavy Trucks:	74.7	73.3	69.7	69.8	76.8	77.0
Vehicle Noise:	77.5	76.1	73.0	72.3	79.4	79.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	253	546	1,176	2,533
CNEL:	264	568	1,224	2,638

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Riverside Dr.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,202 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,248 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.33	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-8.24	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-10.14	0.61	-1.20	-5.34	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	68.7	65.6	64.2	71.5	71.8
Medium Trucks:	72.2	70.8	68.4	66.8	73.9	74.2
Heavy Trucks:	74.6	73.2	69.7	69.8	76.7	77.0
Vehicle Noise:	77.4	76.1	73.0	72.3	79.3	79.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	252	542	1,168	2,516
CNEL:	262	565	1,216	2,620

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Chino Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,434 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,027 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.12	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-8.68	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-10.59	0.61	-1.20	-5.34	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:	69.5	68.2	65.2	63.7	71.0	71.3
Medium Trucks:	71.7	70.3	68.0	66.3	73.5	73.8
Heavy Trucks:	74.2	72.8	69.2	69.3	76.3	76.5
Vehicle Noise:	77.0	75.6	72.5	71.8	78.9	79.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	235	506	1,090	2,349
CNEL:	245	527	1,135	2,446

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Schaefer Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,695 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,649 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.43	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-9.99	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.90	0.61	-1.20	-5.34	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:	69.7	68.5	65.5	64.0	71.3	71.6
Medium Trucks:	71.8	70.4	68.0	66.4	73.6	73.9
Heavy Trucks:	73.9	72.5	68.9	69.0	76.0	76.2
Vehicle Noise:	76.9	75.5	72.5	71.7	78.8	79.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	232	500	1,076	2,319
CNEL:	242	520	1,121	2,415

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Archibald Av.
Road Segment: n/o Edison Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,695 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,649 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.43	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-9.99	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-11.90	0.61	-1.20	*-5.34*	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:	69.7	68.5	65.5	64.0	71.3	71.6
Medium Trucks:	71.8	70.4	68.0	66.4	73.6	73.9
Heavy Trucks:	73.9	72.5	68.9	69.0	76.0	76.2
Vehicle Noise:	76.9	75.5	72.5	71.7	78.8	79.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	232	500	1,076	2,319
CNEL:	242	520	1,121	2,415

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Archibald Av.
Road Segment: n/o Eucalyptus Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,603 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,041 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.51	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-9.07	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.98	0.61	-1.20	*-5.34*	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	69.4	66.4	64.9	72.2	72.5
Medium Trucks:	72.7	71.4	69.0	67.3	74.5	74.8
Heavy Trucks:	74.8	73.4	69.9	70.0	76.9	77.2
Vehicle Noise:	77.8	76.5	73.4	72.7	79.7	80.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	267	576	1,240	2,672
CNEL:	278	600	1,292	2,784

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Archibald Av.
Road Segment: n/o Merrill Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,402 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,025 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.54	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-9.10	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-11.01	0.61	-1.20	*-5.34*	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	69.4	66.4	64.9	72.2	72.5
Medium Trucks:	72.7	71.3	68.9	67.3	74.4	74.8
Heavy Trucks:	74.8	73.4	69.8	69.9	76.9	77.1
Vehicle Noise:	77.8	76.4	73.4	72.6	79.7	80.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	266	573	1,234	2,658
CNEL:	277	597	1,285	2,769

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Archibald Av.
Road Segment: n/o Limonite Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,381 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,103 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.38	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-8.94	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.85	0.61	-1.20	*-5.34*	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	69.5	66.5	65.1	72.3	72.6
Medium Trucks:	72.9	71.5	69.1	67.5	74.6	74.9
Heavy Trucks:	75.0	73.5	70.0	70.1	77.1	77.3
Vehicle Noise:	78.0	76.6	73.5	72.8	79.9	80.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	273	587	1,265	2,726
CNEL:	284	612	1,318	2,840

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Archibald Av.
Road Segment: n/o Schleisman Rd.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,881	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,063	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	120	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	110.0	feet
Centerline Dist. to Observer:	110.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	92.331
Medium Trucks:	92.235
Heavy Trucks:	92.244

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-0.05	-4.10	-1.20	*-4.78*	0.000	0.000
Medium Trucks:	81.00	-8.61	-4.09	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.52	-4.09	-1.20	*-5.14*	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:	64.9	63.6	60.6	59.1	66.4	66.7
Medium Trucks:	67.1	65.7	63.3	61.7	68.8	69.2
Heavy Trucks:	69.6	68.2	64.6	64.7	71.7	71.9
Vehicle Noise:	72.4	71.0	67.9	67.2	74.3	74.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	212	456	983	2,118
CNEL:	221	475	1,024	2,205

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Archibald Av.
Road Segment: s/o Schleisman Rd.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,584	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,800	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	120	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	110.0	feet
Centerline Dist. to Observer:	110.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	92.331
Medium Trucks:	92.235
Heavy Trucks:	92.244

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-0.64	-4.10	-1.20	*-4.78*	0.000	0.000
Medium Trucks:	81.00	-9.20	-4.09	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-11.11	-4.09	-1.20	*-5.14*	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:	64.3	63.0	60.0	58.5	65.8	66.1
Medium Trucks:	66.5	65.1	62.7	61.1	68.2	68.6
Heavy Trucks:	69.0	67.6	64.0	64.1	71.1	71.3
Vehicle Noise:	71.8	70.4	67.3	66.6	73.7	73.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	193	417	898	1,934
CNEL:	201	434	935	2,014

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Edison Av.
Road Segment: w/o Pipeline Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,769	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,691	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.57	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.00	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.90	0.37	-1.20	*-5.34*	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	67.9	64.9	63.4	70.7	71.0
Medium Trucks:	71.6	70.2	67.8	66.2	73.4	73.7
Heavy Trucks:	74.5	73.1	69.6	69.6	76.6	76.8
Vehicle Noise:	77.1	75.7	72.6	71.9	79.0	79.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	239	514	1,108	2,387
CNEL:	248	535	1,153	2,484

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Edison Av.
Road Segment: w/o Ramona Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,760	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,292	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.87	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.69	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.60	0.37	-1.20	*-5.34*	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	67.2	64.2	62.8	70.0	70.3
Medium Trucks:	70.9	69.5	67.2	65.5	72.7	73.0
Heavy Trucks:	73.8	72.4	68.9	68.9	75.9	76.1
Vehicle Noise:	76.4	75.0	71.9	71.2	78.3	78.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	214	462	995	2,145
CNEL:	223	481	1,036	2,232

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Edison Av.
Road Segment: w/o Central Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,425 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,867 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.02	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-8.58	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.49	0.37	-1.20	*-5.34*	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:	67.6	66.3	63.3	61.9	69.1	69.4
Medium Trucks:	70.0	68.6	66.3	64.6	71.8	72.1
Heavy Trucks:	72.9	71.5	68.0	68.1	75.0	75.3
Vehicle Noise:	75.5	74.1	71.0	70.3	77.4	77.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	187	403	868	1,870
CNEL:	195	419	904	1,947

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Edison Av.
Road Segment: w/o Mountain Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,197 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,168 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.63	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.93	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.84	0.37	-1.20	*-5.34*	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:	68.2	67.0	64.0	62.5	69.8	70.1
Medium Trucks:	70.7	69.3	66.9	65.3	72.4	72.7
Heavy Trucks:	73.6	72.2	68.6	68.7	75.7	75.9
Vehicle Noise:	76.1	74.8	71.7	71.0	78.1	78.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	207	445	959	2,066
CNEL:	215	463	998	2,151

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Edison Av.
Road Segment: w/o San Antonio Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,967 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,830 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.11	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-8.67	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.58	0.37	-1.20	*-5.34*	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:	67.5	66.3	63.2	61.8	69.0	69.3
Medium Trucks:	69.9	68.6	66.2	64.5	71.7	72.0
Heavy Trucks:	72.8	71.4	67.9	68.0	74.9	75.2
Vehicle Noise:	75.4	74.0	70.9	70.3	77.3	77.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	185	398	857	1,846
CNEL:	192	414	892	1,921

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Edison Av.
Road Segment: w/o Euclid Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,497 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,474 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-1.05	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-9.61	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-11.52	0.37	-1.20	*-5.34*	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:	66.6	65.3	62.3	60.8	68.1	68.4
Medium Trucks:	69.0	67.6	65.2	63.6	70.7	71.1
Heavy Trucks:	71.9	70.5	66.9	67.0	74.0	74.2
Vehicle Noise:	74.5	73.1	70.0	69.3	76.4	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	160	344	742	1,598
CNEL:	166	358	772	1,663

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Edison Av.
Road Segment: e/o Euclid Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,750 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	936 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-3.48	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-12.04	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-13.95	2.47	-1.20	*-5.21*	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	66.7	63.7	62.2	69.5	69.8
Medium Trucks:	70.2	68.8	66.5	64.8	72.0	72.3
Heavy Trucks:	72.7	71.3	67.7	67.8	74.8	75.0
Vehicle Noise:	75.5	74.1	71.0	70.3	77.4	77.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	261	563	1,213	2,612
CNEL:	272	586	1,263	2,720

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Edison Av.
Road Segment: w/o Grove Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,786 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	780 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-4.27	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-12.83	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-14.74	2.47	-1.20	*-5.21*	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:	67.2	65.9	62.9	61.4	68.7	69.0
Medium Trucks:	69.4	68.0	65.7	64.0	71.2	71.5
Heavy Trucks:	71.9	70.5	66.9	67.0	74.0	74.2
Vehicle Noise:	74.7	73.3	70.2	69.5	76.6	76.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	231	498	1,073	2,312
CNEL:	241	519	1,118	2,408

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Edison Av.
Road Segment: w/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,043 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,040 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-3.02	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-11.58	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-13.49	2.47	-1.20	*-5.21*	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	67.2	64.1	62.7	69.9	70.2
Medium Trucks:	70.7	69.3	66.9	65.3	72.4	72.7
Heavy Trucks:	73.2	71.7	68.2	68.3	75.3	75.5
Vehicle Noise:	75.9	74.6	71.5	70.8	77.8	78.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	280	603	1,300	2,801
CNEL:	292	628	1,354	2,916

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Edison Av.
Road Segment: w/o Archibald Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,451 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,072 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-2.89	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-11.45	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-13.36	2.47	-1.20	*-5.21*	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	67.3	64.3	62.8	70.1	70.4
Medium Trucks:	70.8	69.4	67.0	65.4	72.6	72.9
Heavy Trucks:	73.3	71.9	68.3	68.4	75.4	75.6
Vehicle Noise:	76.1	74.7	71.6	70.9	78.0	78.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	286	616	1,327	2,859
CNEL:	298	641	1,382	2,977

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Edison Av.
Road Segment: w/o Haven Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,356 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,622 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.09	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-9.65	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-11.56	2.47	-1.20	-5.21	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	69.1	66.1	64.6	71.9	72.2
Medium Trucks:	72.6	71.2	68.8	67.2	74.4	74.7
Heavy Trucks:	75.1	73.7	70.1	70.2	77.2	77.4
Vehicle Noise:	77.9	76.5	73.4	72.7	79.8	80.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	377	812	1,749	3,768
CNEL:	392	845	1,821	3,924

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Edison Av.
Road Segment: e/o Haven Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,077 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,680 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.94	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-9.50	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-11.41	2.47	-1.20	-5.21	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:	70.5	69.2	66.2	64.8	72.0	72.3
Medium Trucks:	72.8	71.4	69.0	67.3	74.5	74.8
Heavy Trucks:	75.2	73.8	70.3	70.4	77.3	77.6
Vehicle Noise:	78.0	76.6	73.6	72.9	79.9	80.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	386	831	1,790	3,857
CNEL:	402	865	1,864	4,016

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Ontario Ranch Rd.
Road Segment: e/o Hamner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,729 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,529 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	0.84	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-7.72	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-9.63	-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:	68.0	66.7	63.7	62.3	69.5	69.8
Medium Trucks:	70.2	68.8	66.5	64.8	72.0	72.3
Heavy Trucks:	72.7	71.3	67.7	67.8	74.8	75.0
Vehicle Noise:	75.5	74.1	71.0	70.3	77.4	77.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	237	510	1,099	2,367
CNEL:	247	531	1,144	2,465

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Eucalyptus Av.
Road Segment: w/o Bon View Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	3,722 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	297 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-7.50	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-16.06	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-17.97	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:	59.1	57.8	54.8	53.4	60.6	60.9
Medium Trucks:	61.8	60.4	58.0	56.3	63.5	63.8
Heavy Trucks:	65.1	63.7	60.2	60.3	67.2	67.5
Vehicle Noise:	67.5	66.1	63.0	62.3	69.4	69.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	86	186	401
CNEL:	42	90	193	417

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Eucalyptus Av.
Road Segment: w/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,676	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	134	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-10.96	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-19.53	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-21.43	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:	55.6	54.4	51.4	49.9	57.2	57.5
Medium Trucks:	58.3	56.9	54.5	52.9	60.0	60.4
Heavy Trucks:	61.7	60.2	56.7	56.8	63.8	64.0
Vehicle Noise:	64.0	62.6	59.5	58.9	65.9	66.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	24	51	109	235
CNEL:	24	53	114	245

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Eucalyptus Av.
Road Segment: e/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,820	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	145	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-10.61	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-19.17	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-21.08	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:	56.0	54.7	51.7	50.3	57.5	57.8
Medium Trucks:	58.7	57.3	54.9	53.2	60.4	60.7
Heavy Trucks:	62.0	60.6	57.1	57.2	64.1	64.4
Vehicle Noise:	64.4	63.0	59.8	59.2	66.3	66.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	25	54	115	249
CNEL:	26	56	120	259

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Eucalyptus Av.
Road Segment: w/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,820	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	145	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-10.61	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-19.17	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-21.08	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:	56.0	54.7	51.7	50.3	57.5	57.8
Medium Trucks:	58.7	57.3	54.9	53.2	60.4	60.7
Heavy Trucks:	62.0	60.6	57.1	57.2	64.1	64.4
Vehicle Noise:	64.4	63.0	59.8	59.2	66.3	66.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	25	54	115	249
CNEL:	26	56	120	259

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Eucalyptus Av.
Road Segment: e/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,820	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	145	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-10.61	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-19.17	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-21.08	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:	56.0	54.7	51.7	50.3	57.5	57.8
Medium Trucks:	58.7	57.3	54.9	53.2	60.4	60.7
Heavy Trucks:	62.0	60.6	57.1	57.2	64.1	64.4
Vehicle Noise:	64.4	63.0	59.8	59.2	66.3	66.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	25	54	115	249
CNEL:	26	56	120	259

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Merrill Av.
Road Segment: e/o Euclid Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,350 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	825 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-4.03	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.59	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.50	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:	66.3	65.0	62.0	60.5	67.8	68.1
Medium Trucks:	68.5	67.1	64.7	63.1	70.3	70.6
Heavy Trucks:	71.0	69.6	66.0	66.1	73.1	73.3
Vehicle Noise:	73.8	72.4	69.3	68.6	75.7	75.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	105	227	489	1,053
CNEL:	110	236	509	1,096

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Merrill Av.
Road Segment: w/o Grove Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,265 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	978 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-3.29	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.85	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.76	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:	67.0	65.7	62.7	61.3	68.5	68.8
Medium Trucks:	69.3	67.9	65.5	63.8	71.0	71.3
Heavy Trucks:	71.7	70.3	66.8	66.9	73.8	74.1
Vehicle Noise:	74.5	73.1	70.1	69.4	76.4	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	118	254	547	1,179
CNEL:	123	265	570	1,228

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Merrill Av.
Road Segment: e/o Grove Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,949 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	952 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-3.40	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.96	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.87	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:	66.9	65.6	62.6	61.2	68.4	68.7
Medium Trucks:	69.1	67.8	65.4	63.7	70.9	71.2
Heavy Trucks:	71.6	70.2	66.7	66.7	73.7	73.9
Vehicle Noise:	74.4	73.0	70.0	69.2	76.3	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	250	538	1,159
CNEL:	121	260	560	1,207

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Merrill Av.
Road Segment: e/o Walker Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,238 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,055 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-2.96	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.52	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.43	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:	67.3	66.1	63.1	61.6	68.9	69.2
Medium Trucks:	69.6	68.2	65.8	64.2	71.3	71.6
Heavy Trucks:	72.1	70.6	67.1	67.2	74.2	74.4
Vehicle Noise:	74.9	73.5	70.4	69.7	76.8	77.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	124	267	576	1,241
CNEL:	129	278	600	1,292

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Merrill Av.
Road Segment: w/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,376 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,066 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-2.91	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.47	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.38	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:	67.4	66.1	63.1	61.6	68.9	69.2
Medium Trucks:	69.6	68.2	65.9	64.2	71.4	71.7
Heavy Trucks:	72.1	70.7	67.1	67.2	74.2	74.4
Vehicle Noise:	74.9	73.5	70.4	69.7	76.8	77.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	125	269	580	1,249
CNEL:	130	280	604	1,301

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Merrill Av.
Road Segment: e/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,865 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,105 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-2.76	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.32	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.23	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:	67.5	66.3	63.3	61.8	69.1	69.4
Medium Trucks:	69.8	68.4	66.0	64.4	71.5	71.8
Heavy Trucks:	72.3	70.8	67.3	67.4	74.4	74.6
Vehicle Noise:	75.1	73.7	70.6	69.9	77.0	77.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	128	276	594	1,280
CNEL:	133	287	618	1,332

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Limonite
Road Segment: e/o Archibald Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,317 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,460 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-1.09	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-9.65	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.56	-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:	64.3	63.1	60.0	58.6	65.9	66.2
Medium Trucks:	66.8	65.4	63.0	61.3	68.5	68.8
Heavy Trucks:	69.7	68.2	64.7	64.8	71.8	72.0
Vehicle Noise:	72.2	70.8	67.7	67.1	74.1	74.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	309	665	1,433
CNEL:	149	321	692	1,492

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing
Road Name: Limonite
Road Segment: w/o Sumner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,941 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,589 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-0.72	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-9.28	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.19	-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:	64.7	63.4	60.4	59.0	66.2	66.5
Medium Trucks:	67.1	65.7	63.4	61.7	68.9	69.2
Heavy Trucks:	70.0	68.6	65.1	65.2	72.1	72.3
Vehicle Noise:	72.6	71.2	68.1	67.4	74.5	74.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	152	327	704	1,517
CNEL:	158	340	733	1,579

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing | Project Name: Merrill Commerce Center
Road Name: Limonite | Job Number: 12005
Road Segment: w/o Scholar Wy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,540 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,557 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-0.81	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-9.37	-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:	64.6	63.4	60.3	58.9	66.1	66.4
Medium Trucks:	67.0	65.6	63.3	61.6	68.8	69.1
Heavy Trucks:	69.9	68.5	65.0	65.1	72.0	72.3
Vehicle Noise:	72.5	71.1	68.0	67.3	74.4	74.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	150	322	694	1,496
CNEL:	156	336	723	1,557

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing | Project Name: Merrill Commerce Center
Road Name: Limonite | Job Number: 12005
Road Segment: w/o Hamner Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,117 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,603 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-0.68	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-9.24	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.15	-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:	64.7	63.5	60.5	59.0	66.3	66.6
Medium Trucks:	67.2	65.8	63.4	61.7	68.9	69.2
Heavy Trucks:	70.1	68.6	65.1	65.2	72.2	72.4
Vehicle Noise:	72.6	71.2	68.1	67.5	74.5	74.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	153	329	708	1,526
CNEL:	159	342	737	1,588

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing | Project Name: Merrill Commerce Center
Road Name: Limonite | Job Number: 12005
Road Segment: e/o Hamner Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,611 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,722 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-0.37	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-8.93	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.84	-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:	65.0	63.8	60.8	59.3	66.6	66.9
Medium Trucks:	67.5	66.1	63.7	62.1	69.2	69.5
Heavy Trucks:	70.4	68.9	65.4	65.5	72.5	72.7
Vehicle Noise:	72.9	71.6	68.5	67.8	74.9	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	160	345	743	1,600
CNEL:	167	359	773	1,666

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o SR-60

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,009 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,870 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.39%
Medium Trucks:	69.4%	10.0%	20.6%	11.32%
Heavy Trucks:	69.0%	7.6%	23.4%	7.29%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.36	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	77.72	-6.21	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-8.12	2.47	-1.20	-5.21	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	68.8	65.8	64.4	71.6	71.9
Medium Trucks:	72.8	71.4	69.0	67.4	74.5	74.8
Heavy Trucks:	76.1	74.7	71.2	71.3	78.2	78.5
Vehicle Noise:	78.5	77.1	74.0	73.3	80.4	80.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	414	893	1,924	4,145
CNEL:	431	929	2,002	4,313

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Euclid Av.
Road Segment: n/o SR-60 EB Ramps
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,826 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,855 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.85%
Medium Trucks:	69.4%	10.0%	20.6%	11.49%
Heavy Trucks:	69.0%	7.6%	23.4%	7.66%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.80	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-6.68	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.44	2.47	-1.20	*-5.21*	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	70.2	67.2	65.8	73.0	73.3
Medium Trucks:	74.0	72.6	70.3	68.6	75.8	76.1
Heavy Trucks:	77.1	75.7	72.1	72.2	79.2	79.4
Vehicle Noise:	79.6	78.2	75.1	74.4	81.5	81.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	490	1,055	2,272	4,895
CNEL:	510	1,098	2,365	5,095

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Euclid Av.
Road Segment: n/o Walnut Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,303 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,893 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.88%
Medium Trucks:	69.4%	10.0%	20.6%	11.47%
Heavy Trucks:	69.0%	7.6%	23.4%	7.65%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.85	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-6.63	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.39	2.47	-1.20	*-5.21*	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	70.3	67.3	65.8	73.1	73.4
Medium Trucks:	74.1	72.7	70.3	68.7	75.8	76.1
Heavy Trucks:	77.1	75.7	72.2	72.3	79.2	79.5
Vehicle Noise:	79.6	78.2	75.1	74.5	81.5	81.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	493	1,063	2,291	4,935
CNEL:	514	1,107	2,384	5,136

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Euclid Av.
Road Segment: n/o Riverside Dr.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,036 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,713 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.87%
Medium Trucks:	69.4%	10.0%	20.6%	11.47%
Heavy Trucks:	69.0%	7.6%	23.4%	7.66%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.57	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-6.91	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.66	2.47	-1.20	*-5.21*	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	70.0	67.0	65.5	72.8	73.1
Medium Trucks:	73.8	72.4	70.0	68.4	75.5	75.9
Heavy Trucks:	76.9	75.4	71.9	72.0	79.0	79.2
Vehicle Noise:	79.3	78.0	74.9	74.2	81.3	81.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	473	1,019	2,196	4,731
CNEL:	492	1,061	2,285	4,923

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Euclid Av.
Road Segment: n/o Chino Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,263 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,412 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.87%
Medium Trucks:	69.4%	10.0%	20.6%	11.45%
Heavy Trucks:	69.0%	7.6%	23.4%	7.68%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.06	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-7.43	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.16	2.47	-1.20	*-5.21*	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	69.5	66.5	65.0	72.3	72.6
Medium Trucks:	73.3	71.9	69.5	67.9	75.0	75.3
Heavy Trucks:	76.4	74.9	71.4	71.5	78.5	78.7
Vehicle Noise:	78.8	77.4	74.3	73.7	80.8	81.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	438	943	2,031	4,376
CNEL:	455	981	2,114	4,555

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Euclid Av.
Road Segment: n/o Schaefer Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,616	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,599	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	80.93%
Medium Trucks:	69.4%	10.0%	20.6%	11.43%
Heavy Trucks:	69.0%	7.6%	23.4%	7.64%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.39	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-7.11	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.86	2.47	-1.20	*-5.21*	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:	71.1	69.8	66.8	65.4	72.6	72.9
Medium Trucks:	73.6	72.2	69.8	68.2	75.3	75.7
Heavy Trucks:	76.7	75.2	71.7	71.8	78.8	79.0
Vehicle Noise:	79.1	77.8	74.7	74.0	81.1	81.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	459	989	2,131	4,591
CNEL:	478	1,029	2,218	4,778

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Euclid Av.
Road Segment: n/o Edison Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,505	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,750	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	80.98%
Medium Trucks:	69.4%	10.0%	20.6%	11.41%
Heavy Trucks:	69.0%	7.6%	23.4%	7.62%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.64	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-6.87	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.63	2.47	-1.20	*-5.21*	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	70.1	67.0	65.6	72.9	73.2
Medium Trucks:	73.8	72.5	70.1	68.4	75.6	75.9
Heavy Trucks:	76.9	75.5	71.9	72.0	79.0	79.2
Vehicle Noise:	79.4	78.0	74.9	74.2	81.3	81.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	476	1,025	2,209	4,759
CNEL:	495	1,067	2,299	4,953

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Euclid Av.
Road Segment: n/o Eucalyptus Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,389	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,502	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	80.74%
Medium Trucks:	69.4%	10.0%	20.6%	11.54%
Heavy Trucks:	69.0%	7.6%	23.4%	7.73%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.22	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-7.23	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.98	2.47	-1.20	*-5.21*	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:	70.9	69.7	66.6	65.2	72.4	72.7
Medium Trucks:	73.5	72.1	69.7	68.1	75.2	75.5
Heavy Trucks:	76.5	75.1	71.6	71.7	78.6	78.9
Vehicle Noise:	79.0	77.6	74.5	73.9	80.9	81.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	450	970	2,089	4,501
CNEL:	468	1,009	2,174	4,684

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Euclid Av.
Road Segment: n/o Merrill Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,198	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,566	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	80.67%
Medium Trucks:	69.4%	10.0%	20.6%	11.58%
Heavy Trucks:	69.0%	7.6%	23.4%	7.75%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	0.45	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-7.98	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.72	2.47	-1.20	*-5.21*	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:	73.5	72.2	69.2	67.7	75.0	75.3
Medium Trucks:	75.7	74.3	71.9	70.3	77.4	77.7
Heavy Trucks:	77.9	76.5	73.0	73.1	80.0	80.3
Vehicle Noise:	80.8	79.5	76.4	75.7	82.7	83.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	594	1,279	2,756	5,937
CNEL:	618	1,332	2,870	6,184

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Euclid Av.
Road Segment: n/o Kimball Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,094	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,717	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.11%
Medium Trucks:	69.4%	10.0%	20.6%	11.38%
Heavy Trucks:	69.0%	7.6%	23.4%	7.51%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	0.72	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-7.81	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.61	2.47	-1.20	*-5.21*	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	72.5	69.5	68.0	75.3	75.6
Medium Trucks:	75.9	74.5	72.1	70.4	77.6	77.9
Heavy Trucks:	78.1	76.6	73.1	73.2	80.2	80.4
Vehicle Noise:	81.0	79.6	76.6	75.8	82.9	83.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	608	1,310	2,823	6,082
CNEL:	633	1,365	2,940	6,335

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Euclid Av.
Road Segment: n/o Bickmore Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,118	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,763	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	80.94%
Medium Trucks:	69.4%	10.0%	20.6%	11.42%
Heavy Trucks:	69.0%	7.6%	23.4%	7.64%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-1.17	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-9.67	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-11.42	2.47	-1.20	*-5.21*	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	70.6	67.6	66.1	73.4	73.7
Medium Trucks:	74.0	72.6	70.2	68.6	75.7	76.1
Heavy Trucks:	76.2	74.8	71.3	71.4	78.3	78.6
Vehicle Noise:	79.2	77.8	74.7	74.0	81.1	81.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	459	988	2,129	4,587
CNEL:	478	1,029	2,218	4,778

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Euclid Av.
Road Segment: n/o Pine Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,573	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,719	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	80.93%
Medium Trucks:	69.4%	10.0%	20.6%	11.43%
Heavy Trucks:	69.0%	7.6%	23.4%	7.64%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-1.27	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-9.78	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-11.52	2.47	-1.20	*-5.21*	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	70.5	67.5	66.0	73.3	73.6
Medium Trucks:	73.9	72.5	70.1	68.5	75.6	76.0
Heavy Trucks:	76.1	74.7	71.2	71.3	78.2	78.5
Vehicle Noise:	79.1	77.7	74.6	73.9	81.0	81.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	451	972	2,095	4,514
CNEL:	470	1,013	2,182	4,701

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Euclid Av.
Road Segment: s/o Pine Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,028	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,110	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.13%
Medium Trucks:	69.4%	10.0%	20.6%	11.38%
Heavy Trucks:	69.0%	7.6%	23.4%	7.49%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	1.31	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-7.22	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.04	2.47	-1.20	*-5.21*	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:	74.3	73.1	70.0	68.6	75.9	76.2
Medium Trucks:	76.5	75.1	72.7	71.0	78.2	78.5
Heavy Trucks:	78.6	77.2	73.7	73.8	80.7	81.0
Vehicle Noise:	81.6	80.2	77.2	76.4	83.5	83.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	665	1,433	3,087	6,650
CNEL:	693	1,492	3,215	6,927

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Grove Av.
Road Segment: n/o SR-60

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,546	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,753	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.43%
Medium Trucks:	69.4%	10.0%	20.6%	11.29%
Heavy Trucks:	69.0%	7.6%	23.4%	7.28%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.67	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-6.91	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.82	0.61	-1.20	*-5.34*	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:	69.5	68.3	65.2	63.8	71.1	71.4
Medium Trucks:	72.0	70.6	68.2	66.5	73.7	74.0
Heavy Trucks:	74.8	73.4	69.9	70.0	76.9	77.2
Vehicle Noise:	77.4	76.0	72.9	72.3	79.3	79.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	251	541	1,166	2,511
CNEL:	261	563	1,213	2,614

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Grove Av.
Road Segment: n/o SR-60 EB Ramps

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,532	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,274	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.51%
Medium Trucks:	69.4%	10.0%	20.6%	11.24%
Heavy Trucks:	69.0%	7.6%	23.4%	7.24%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.84	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.76	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.67	0.61	-1.20	*-5.34*	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	67.4	64.4	63.0	70.2	70.5
Medium Trucks:	71.1	69.7	67.3	65.7	72.8	73.2
Heavy Trucks:	74.0	72.6	69.0	69.1	76.1	76.3
Vehicle Noise:	76.6	75.2	72.1	71.4	78.5	78.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	220	475	1,023	2,205
CNEL:	230	494	1,065	2,295

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Grove Av.
Road Segment: n/o Walnut Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,045	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,837	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.61%
Medium Trucks:	69.4%	10.0%	20.6%	11.18%
Heavy Trucks:	69.0%	7.6%	23.4%	7.21%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.08	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-8.71	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.62	0.61	-1.20	*-5.34*	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:	67.8	66.5	63.5	62.0	69.3	69.6
Medium Trucks:	70.1	68.8	66.4	64.7	71.9	72.2
Heavy Trucks:	73.0	71.6	68.1	68.2	75.1	75.4
Vehicle Noise:	75.6	74.2	71.1	70.5	77.5	77.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	191	411	885	1,907
CNEL:	198	428	921	1,985

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Grove Av.
Road Segment: n/o Riverside Dr.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,247	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,295	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.71%
Medium Trucks:	69.4%	10.0%	20.6%	11.12%
Heavy Trucks:	69.0%	7.6%	23.4%	7.17%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-1.59	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-10.25	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-12.16	0.61	-1.20	*-5.34*	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	65.0	62.0	60.5	67.8	68.1
Medium Trucks:	68.6	67.2	64.8	63.2	70.3	70.7
Heavy Trucks:	71.5	70.1	66.5	66.6	73.6	73.8
Vehicle Noise:	74.1	72.7	69.6	68.9	76.0	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	151	324	699	1,506
CNEL:	157	338	728	1,568

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Grove Av.
Road Segment: n/o Chino Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,106	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	885	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	62	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.99%
Medium Trucks:	69.4%	10.0%	20.6%	10.95%
Heavy Trucks:	69.0%	7.6%	23.4%	7.06%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-3.69	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-12.43	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-14.34	1.46	-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:	66.7	65.5	62.5	61.0	68.3	68.6
Medium Trucks:	68.8	67.4	65.1	63.4	70.6	70.9
Heavy Trucks:	71.3	69.9	66.3	66.4	73.4	73.6
Vehicle Noise:	74.1	72.7	69.7	68.9	76.0	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	126	271	585	1,260
CNEL:	131	283	609	1,312

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Grove Av.
Road Segment: n/o Schaefer Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,114	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	806	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	62	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	82.05%
Medium Trucks:	69.4%	10.0%	20.6%	10.91%
Heavy Trucks:	69.0%	7.6%	23.4%	7.03%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-4.09	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-12.85	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-14.76	1.46	-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	65.1	62.1	60.6	67.9	68.2
Medium Trucks:	68.4	67.0	64.6	63.0	70.1	70.5
Heavy Trucks:	70.9	69.5	65.9	66.0	73.0	73.2
Vehicle Noise:	73.7	72.3	69.3	68.5	75.6	75.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	118	255	549	1,182
CNEL:	123	265	571	1,231

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Grove Av.
Road Segment: n/o Edison Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,990	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	717	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	62	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	82.14%
Medium Trucks:	69.4%	10.0%	20.6%	10.86%
Heavy Trucks:	69.0%	7.6%	23.4%	7.00%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-4.60	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-13.38	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-15.29	1.46	-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:	65.8	64.6	61.6	60.1	67.4	67.7
Medium Trucks:	67.9	66.5	64.1	62.5	69.6	69.9
Heavy Trucks:	70.3	68.9	65.4	65.5	72.4	72.7
Vehicle Noise:	73.2	71.8	68.7	68.0	75.1	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	109	235	506	1,090
CNEL:	113	245	527	1,135

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Grove Av.
Road Segment: n/o Eucalyptus Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,665	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	770	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	62	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	83.59%
Medium Trucks:	69.4%	10.0%	20.6%	9.98%
Heavy Trucks:	69.0%	7.6%	23.4%	6.43%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-4.21	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-13.44	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-15.35	1.46	-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:	66.2	65.0	62.0	60.5	67.8	68.1
Medium Trucks:	67.8	66.4	64.0	62.4	69.6	69.9
Heavy Trucks:	70.3	68.9	65.3	65.4	72.4	72.6
Vehicle Noise:	73.2	71.8	68.8	68.0	75.1	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	109	236	508	1,094
CNEL:	114	245	529	1,139

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Grove Av.
Road Segment: n/o Street A
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,527 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	600 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	85.14%
Medium Trucks:	69.4%	10.0%	20.6%	9.03%
Heavy Trucks:	69.0%	7.6%	23.4%	5.82%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-5.21	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-14.96	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-16.86	1.46	-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:	65.2	64.0	60.9	59.5	66.8	67.1
Medium Trucks:	66.3	64.9	62.5	60.9	68.0	68.4
Heavy Trucks:	68.8	67.4	63.8	63.9	70.9	71.1
Vehicle Noise:	71.8	70.4	67.4	66.6	73.7	73.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	88	190	408	880
CNEL:	92	197	425	916

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Grove Av.
Road Segment: n/o Merrill Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,527 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	600 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	85.14%
Medium Trucks:	69.4%	10.0%	20.6%	9.03%
Heavy Trucks:	69.0%	7.6%	23.4%	5.82%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-5.21	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-14.96	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-16.86	1.46	-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:	65.2	64.0	60.9	59.5	66.8	67.1
Medium Trucks:	66.3	64.9	62.5	60.9	68.0	68.4
Heavy Trucks:	68.8	67.4	63.8	63.9	70.9	71.1
Vehicle Noise:	71.8	70.4	67.4	66.6	73.7	73.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	88	190	408	880
CNEL:	92	197	425	916

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Archibald Av.
Road Segment: n/o SR-60
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,674 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,206 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.39%
Medium Trucks:	69.4%	10.0%	20.6%	11.32%
Heavy Trucks:	69.0%	7.6%	23.4%	7.29%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	0.25	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-8.32	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.23	0.61	-1.20	*-5.34*	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	68.6	65.6	64.1	71.4	71.7
Medium Trucks:	72.1	70.7	68.3	66.7	73.8	74.1
Heavy Trucks:	74.6	73.1	69.6	69.7	76.7	76.9
Vehicle Noise:	77.4	76.0	72.9	72.2	79.3	79.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	248	535	1,153	2,483
CNEL:	259	557	1,200	2,586

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Archibald Av.
Road Segment: n/o SR-60 EB Ramps
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,528 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,274 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.39%
Medium Trucks:	69.4%	10.0%	20.6%	11.32%
Heavy Trucks:	69.0%	7.6%	23.4%	7.29%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	0.38	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-8.19	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.10	0.61	-1.20	*-5.34*	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:	70.0	68.7	65.7	64.2	71.5	71.8
Medium Trucks:	72.2	70.8	68.4	66.8	74.0	74.3
Heavy Trucks:	74.7	73.3	69.7	69.8	76.8	77.0
Vehicle Noise:	77.5	76.1	73.0	72.3	79.4	79.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	253	546	1,176	2,534
CNEL:	264	568	1,225	2,639

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Archibald Av.
Road Segment: n/o Riverside Dr.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,683	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,286	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.04%
Medium Trucks:	69.4%	10.0%	20.6%	11.40%
Heavy Trucks:	69.0%	7.6%	23.4%	7.56%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	0.38	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-8.13	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.92	0.61	-1.20	*-5.34*	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:	70.0	68.7	65.7	64.2	71.5	71.8
Medium Trucks:	72.3	70.9	68.5	66.9	74.0	74.3
Heavy Trucks:	74.9	73.4	69.9	70.0	77.0	77.2
Vehicle Noise:	77.6	76.2	73.1	72.4	79.5	79.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	258	556	1,197	2,580
CNEL:	269	579	1,247	2,686

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Archibald Av.
Road Segment: n/o Chino Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,027	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,074	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.08%
Medium Trucks:	69.4%	10.0%	20.6%	11.36%
Heavy Trucks:	69.0%	7.6%	23.4%	7.55%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-0.04	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-8.57	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.34	0.61	-1.20	*-5.34*	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:	69.6	68.3	65.3	63.8	71.1	71.4
Medium Trucks:	71.8	70.4	68.1	66.4	73.6	73.9
Heavy Trucks:	74.4	73.0	69.5	69.6	76.5	76.8
Vehicle Noise:	77.2	75.8	72.7	72.0	79.1	79.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	242	520	1,121	2,416
CNEL:	252	542	1,167	2,515

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Archibald Av.
Road Segment: n/o Schaefer Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,325	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,700	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.06%
Medium Trucks:	69.4%	10.0%	20.6%	11.35%
Heavy Trucks:	69.0%	7.6%	23.4%	7.60%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-1.32	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-9.86	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-11.60	0.61	-1.20	*-5.34*	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	68.6	65.6	64.1	71.4	71.7
Medium Trucks:	72.0	70.6	68.2	66.5	73.7	74.0
Heavy Trucks:	74.2	72.8	69.2	69.3	76.3	76.5
Vehicle Noise:	77.1	75.8	72.7	72.0	79.0	79.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	240	517	1,113	2,399
CNEL:	250	538	1,160	2,498

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Archibald Av.
Road Segment: n/o Edison Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,325	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,700	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.06%
Medium Trucks:	69.4%	10.0%	20.6%	11.35%
Heavy Trucks:	69.0%	7.6%	23.4%	7.60%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-1.32	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-9.86	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-11.60	0.61	-1.20	*-5.34*	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	68.6	65.6	64.1	71.4	71.7
Medium Trucks:	72.0	70.6	68.2	66.5	73.7	74.0
Heavy Trucks:	74.2	72.8	69.2	69.3	76.3	76.5
Vehicle Noise:	77.1	75.8	72.7	72.0	79.0	79.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	240	517	1,113	2,399
CNEL:	250	538	1,160	2,498

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Eucalyptus Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,045 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,076 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.27%
Medium Trucks:	69.4%	10.0%	20.6%	11.71%
Heavy Trucks:	69.0%	7.6%	23.4%	8.01%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.49	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-8.85	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.50	0.61	-1.20	-5.34	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	69.4	66.4	65.0	72.2	72.5
Medium Trucks:	73.0	71.6	69.2	67.5	74.7	75.0
Heavy Trucks:	75.3	73.9	70.3	70.4	77.4	77.6
Vehicle Noise:	78.2	76.8	73.7	73.0	80.1	80.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	281	605	1,303	2,808
CNEL:	292	630	1,357	2,924

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Merrill Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,845 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,060 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.26%
Medium Trucks:	69.4%	10.0%	20.6%	11.72%
Heavy Trucks:	69.0%	7.6%	23.4%	8.02%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.53	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-8.88	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.53	0.61	-1.20	-5.34	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	69.4	66.4	64.9	72.2	72.5
Medium Trucks:	72.9	71.5	69.2	67.5	74.7	75.0
Heavy Trucks:	75.3	73.9	70.3	70.4	77.4	77.6
Vehicle Noise:	78.1	76.7	73.7	73.0	80.0	80.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	279	602	1,297	2,795
CNEL:	291	627	1,351	2,910

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Limonite Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,070 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,157 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.50%
Medium Trucks:	69.4%	10.0%	20.6%	11.18%
Heavy Trucks:	69.0%	7.6%	23.4%	7.32%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.26	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-8.88	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.72	0.61	-1.20	-5.34	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:	70.9	69.7	66.6	65.2	72.4	72.7
Medium Trucks:	72.9	71.5	69.2	67.5	74.7	75.0
Heavy Trucks:	75.1	73.7	70.1	70.2	77.2	77.4
Vehicle Noise:	78.1	76.7	73.6	72.9	80.0	80.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	277	597	1,285	2,769
CNEL:	288	621	1,339	2,884

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Schleisman Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,030 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,075 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	120 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	110.0 feet
Centerline Dist. to Observer:	110.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.47%
Medium Trucks:	69.4%	10.0%	20.6%	11.27%
Heavy Trucks:	69.0%	7.6%	23.4%	7.26%

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:	92.331
Medium Trucks:	92.235
Heavy Trucks:	92.244

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.02	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	81.00	-8.61	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-10.52	-4.09	-1.20	-5.14	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:	64.9	63.6	60.6	59.2	66.4	66.7
Medium Trucks:	67.1	65.7	63.3	61.7	68.8	69.2
Heavy Trucks:	69.6	68.2	64.6	64.7	71.7	71.9
Vehicle Noise:	72.4	71.0	67.9	67.2	74.3	74.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	212	457	984	2,119
CNEL:	221	475	1,024	2,207

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Archibald Av.
Road Segment: s/o Schleisman Rd.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,733	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,812	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	120	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	110.0	feet
Centerline Dist. to Observer:	110.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.49%
Medium Trucks:	69.4%	10.0%	20.6%	11.26%
Heavy Trucks:	69.0%	7.6%	23.4%	7.25%

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:	92.331
Medium Trucks:	92.235
Heavy Trucks:	92.244

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-0.60	-4.10	-1.20	*-4.78*	0.000	0.000
Medium Trucks:	81.00	-9.20	-4.09	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-11.11	-4.09	-1.20	*-5.14*	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:	64.3	63.1	60.0	58.6	65.8	66.1
Medium Trucks:	66.5	65.1	62.7	61.1	68.2	68.6
Heavy Trucks:	69.0	67.6	64.0	64.1	71.1	71.3
Vehicle Noise:	71.8	70.4	67.3	66.6	73.7	73.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	194	417	898	1,936
CNEL:	202	434	935	2,015

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Edison Av.
Road Segment: w/o Pipeline Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,141	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,721	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.57%
Medium Trucks:	69.4%	10.0%	20.6%	11.21%
Heavy Trucks:	69.0%	7.6%	23.4%	7.22%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.63	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.00	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.90	0.37	-1.20	*-5.34*	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	68.0	65.0	63.5	70.8	71.1
Medium Trucks:	71.6	70.2	67.8	66.2	73.4	73.7
Heavy Trucks:	74.5	73.1	69.6	69.6	76.6	76.8
Vehicle Noise:	77.1	75.7	72.6	71.9	79.0	79.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	239	515	1,109	2,390
CNEL:	249	536	1,155	2,488

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Edison Av.
Road Segment: w/o Ramona Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,132	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,322	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.61%
Medium Trucks:	69.4%	10.0%	20.6%	11.19%
Heavy Trucks:	69.0%	7.6%	23.4%	7.21%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.94	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.69	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.60	0.37	-1.20	*-5.34*	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	67.3	64.3	62.8	70.1	70.4
Medium Trucks:	70.9	69.5	67.2	65.5	72.7	73.0
Heavy Trucks:	73.8	72.4	68.9	68.9	75.9	76.1
Vehicle Noise:	76.4	75.0	71.9	71.2	78.3	78.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	215	463	997	2,148
CNEL:	224	482	1,038	2,236

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Edison Av.
Road Segment: w/o Central Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,797	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,897	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.66%
Medium Trucks:	69.4%	10.0%	20.6%	11.15%
Heavy Trucks:	69.0%	7.6%	23.4%	7.19%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.06	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-8.58	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.49	0.37	-1.20	*-5.34*	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:	67.7	66.4	63.4	61.9	69.2	69.5
Medium Trucks:	70.0	68.6	66.3	64.6	71.8	72.1
Heavy Trucks:	72.9	71.5	68.0	68.1	75.0	75.3
Vehicle Noise:	75.5	74.1	71.0	70.4	77.4	77.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	187	404	870	1,874
CNEL:	195	420	905	1,951

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Edison Av.
Road Segment: w/o Mountain Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,607	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,200	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.64%
Medium Trucks:	69.4%	10.0%	20.6%	11.16%
Heavy Trucks:	69.0%	7.6%	23.4%	7.19%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.71	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.93	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.84	0.37	-1.20	*-5.34*	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	67.1	64.0	62.6	69.9	70.1
Medium Trucks:	70.7	69.3	66.9	65.3	72.4	72.7
Heavy Trucks:	73.6	72.2	68.6	68.7	75.7	75.9
Vehicle Noise:	76.2	74.8	71.7	71.0	78.1	78.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	207	446	961	2,070
CNEL:	215	464	1,000	2,155

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Edison Av.
Road Segment: w/o San Antonio Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,413	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,866	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.72%
Medium Trucks:	69.4%	10.0%	20.6%	11.11%
Heavy Trucks:	69.0%	7.6%	23.4%	7.16%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.00	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-8.67	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.58	0.37	-1.20	*-5.34*	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:	67.6	66.4	63.3	61.9	69.1	69.4
Medium Trucks:	69.9	68.6	66.2	64.5	71.7	72.0
Heavy Trucks:	72.8	71.4	67.9	68.0	74.9	75.2
Vehicle Noise:	75.4	74.0	70.9	70.3	77.3	77.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	185	399	859	1,850
CNEL:	193	415	894	1,926

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Edison Av.
Road Segment: w/o Euclid Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,943	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,510	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.81%
Medium Trucks:	69.4%	10.0%	20.6%	11.06%
Heavy Trucks:	69.0%	7.6%	23.4%	7.13%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.92	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-9.61	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-11.52	0.37	-1.20	*-5.34*	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:	66.7	65.4	62.4	61.0	68.2	68.5
Medium Trucks:	69.0	67.6	65.2	63.6	70.7	71.1
Heavy Trucks:	71.9	70.5	66.9	67.0	74.0	74.2
Vehicle Noise:	74.5	73.1	70.0	69.3	76.4	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	160	345	744	1,603
CNEL:	167	359	774	1,668

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Edison Av.
Road Segment: e/o Euclid Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,532	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	999	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	82.53%
Medium Trucks:	69.4%	10.0%	20.6%	10.62%
Heavy Trucks:	69.0%	7.6%	23.4%	6.85%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-3.13	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-12.04	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-13.95	2.47	-1.20	*-5.21*	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	67.0	64.0	62.6	69.8	70.1
Medium Trucks:	70.2	68.8	66.5	64.8	72.0	72.3
Heavy Trucks:	72.7	71.3	67.7	67.8	74.8	75.0
Vehicle Noise:	75.6	74.2	71.1	70.4	77.4	77.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	264	568	1,223	2,635
CNEL:	274	591	1,274	2,744

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Edison Av.
Road Segment: w/o Grove Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,567	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	842	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	82.75%
Medium Trucks:	69.4%	10.0%	20.6%	10.49%
Heavy Trucks:	69.0%	7.6%	23.4%	6.76%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-3.86	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-12.83	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-14.74	2.47	-1.20	*-5.21*	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:	67.6	66.3	63.3	61.8	69.1	69.4
Medium Trucks:	69.4	68.0	65.7	64.0	71.2	71.5
Heavy Trucks:	71.9	70.5	66.9	67.0	74.0	74.2
Vehicle Noise:	74.8	73.4	70.3	69.6	76.7	76.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	234	503	1,085	2,337
CNEL:	243	524	1,130	2,434

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Edison Av.
Road Segment: w/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,043	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,040	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-3.02	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-11.58	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-13.49	2.47	-1.20	*-5.21*	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	67.2	64.1	62.7	69.9	70.2
Medium Trucks:	70.7	69.3	66.9	65.3	72.4	72.7
Heavy Trucks:	73.2	71.7	68.2	68.3	75.3	75.5
Vehicle Noise:	75.9	74.6	71.5	70.8	77.8	78.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	280	603	1,300	2,801
CNEL:	292	628	1,354	2,916

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Edison Av.
Road Segment: w/o Archibald Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,605	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,164	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	82.84%
Medium Trucks:	69.4%	10.0%	20.6%	10.44%
Heavy Trucks:	69.0%	7.6%	23.4%	6.73%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-2.45	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-11.45	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-13.36	2.47	-1.20	*-5.21*	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	67.7	64.7	63.3	70.5	70.8
Medium Trucks:	70.8	69.4	67.0	65.4	72.6	72.9
Heavy Trucks:	73.3	71.9	68.3	68.4	75.4	75.6
Vehicle Noise:	76.2	74.8	71.7	71.0	78.1	78.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	289	623	1,342	2,891
CNEL:	301	649	1,398	3,011

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Edison Av.
Road Segment: w/o Haven Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,284	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,696	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.32%
Medium Trucks:	69.4%	10.0%	20.6%	11.19%
Heavy Trucks:	69.0%	7.6%	23.4%	7.50%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-0.90	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-9.51	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-11.25	2.47	-1.20	*-5.21*	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:	70.5	69.3	66.3	64.8	72.1	72.4
Medium Trucks:	72.8	71.4	69.0	67.3	74.5	74.8
Heavy Trucks:	75.4	74.0	70.4	70.5	77.5	77.7
Vehicle Noise:	78.1	76.7	73.7	72.9	80.0	80.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	391	842	1,815	3,910
CNEL:	407	877	1,890	4,071

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Edison Av.
Road Segment: e/o Haven Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,969	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,751	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.29%
Medium Trucks:	69.4%	10.0%	20.6%	11.21%
Heavy Trucks:	69.0%	7.6%	23.4%	7.50%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-0.76	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-9.37	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-11.11	2.47	-1.20	*-5.21*	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	69.4	66.4	64.9	72.2	72.5
Medium Trucks:	72.9	71.5	69.1	67.5	74.6	75.0
Heavy Trucks:	75.5	74.1	70.6	70.7	77.6	77.9
Vehicle Noise:	78.3	76.9	73.8	73.1	80.2	80.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	400	861	1,855	3,996
CNEL:	416	896	1,931	4,161

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Ontario Ranch Rd.
Road Segment: e/o Hamner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,620	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,600	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	78	feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.31%
Medium Trucks:	69.4%	10.0%	20.6%	11.25%
Heavy Trucks:	69.0%	7.6%	23.4%	7.44%

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	0.96	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	81.00	-7.63	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.43	-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:	68.1	66.9	63.8	62.4	69.6	69.9
Medium Trucks:	70.3	68.9	66.6	64.9	72.1	72.4
Heavy Trucks:	72.9	71.5	67.9	68.0	75.0	75.2
Vehicle Noise:	75.7	74.3	71.2	70.5	77.6	77.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	242	522	1,125	2,424
CNEL:	252	544	1,172	2,524

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Eucalyptus Av.
Road Segment: w/o Bon View Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	3,908	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	311	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	82.25%
Medium Trucks:	69.4%	10.0%	20.6%	10.79%
Heavy Trucks:	69.0%	7.6%	23.4%	6.95%

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:	40.460
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:	66.51	-7.24	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-16.06	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-17.97	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:	59.3	58.1	55.1	53.6	60.9	61.2
Medium Trucks:	61.8	60.4	58.0	56.3	63.5	63.8
Heavy Trucks:	65.1	63.7	60.2	60.3	67.2	67.5
Vehicle Noise:	67.5	66.1	63.0	62.4	69.4	69.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	40	87	187	403
CNEL:	42	90	195	419

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Eucalyptus Av.
Road Segment: w/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,676	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	134	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-10.96	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-19.53	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-21.43	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:	55.6	54.4	51.4	49.9	57.2	57.5
Medium Trucks:	58.3	56.9	54.5	52.9	60.0	60.4
Heavy Trucks:	61.7	60.2	56.7	56.8	63.8	64.0
Vehicle Noise:	64.0	62.6	59.5	58.9	65.9	66.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	24	51	109	235
CNEL:	24	53	114	245

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Eucalyptus Av.
Road Segment: e/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,820	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	145	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-10.61	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-19.17	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-21.08	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:	56.0	54.7	51.7	50.3	57.5	57.8
Medium Trucks:	58.7	57.3	54.9	53.2	60.4	60.7
Heavy Trucks:	62.0	60.6	57.1	57.2	64.1	64.4
Vehicle Noise:	64.4	63.0	59.8	59.2	66.3	66.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	115	249
CNEL:	26	56	120	259

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Eucalyptus Av.
Road Segment: w/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,820	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	145	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-10.61	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-19.17	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-21.08	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:	56.0	54.7	51.7	50.3	57.5	57.8
Medium Trucks:	58.7	57.3	54.9	53.2	60.4	60.7
Heavy Trucks:	62.0	60.6	57.1	57.2	64.1	64.4
Vehicle Noise:	64.4	63.0	59.8	59.2	66.3	66.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	115	249
CNEL:	26	56	120	259

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Eucalyptus Av.
Road Segment: e/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,820	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	145	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-10.61	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-19.17	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-21.08	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:	56.0	54.7	51.7	50.3	57.5	57.8
Medium Trucks:	58.7	57.3	54.9	53.2	60.4	60.7
Heavy Trucks:	62.0	60.6	57.1	57.2	64.1	64.4
Vehicle Noise:	64.4	63.0	59.8	59.2	66.3	66.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	115	249
CNEL:	26	56	120	259

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Merrill Av.
Road Segment: e/o Euclid Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,146	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	888	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	36	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	78.56%
Medium Trucks:	69.4%	10.0%	20.6%	12.21%
Heavy Trucks:	69.0%	7.6%	23.4%	9.23%

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	-3.86	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.94	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.16	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:	66.4	65.2	62.2	60.7	68.0	68.3
Medium Trucks:	69.2	67.8	65.4	63.7	70.9	71.2
Heavy Trucks:	72.3	70.9	67.4	67.5	74.4	74.7
Vehicle Noise:	74.7	73.3	70.2	69.6	76.7	76.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	122	263	568	1,223
CNEL:	127	274	591	1,272

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Merrill Av.
Road Segment: w/o Grove Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,098 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,044 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	79.03%
Medium Trucks:	69.4%	10.0%	20.6%	12.05%
Heavy Trucks:	69.0%	7.6%	23.4%	8.92%

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	-3.13	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-11.30	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-12.60	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:	67.1	65.9	62.9	61.4	68.7	69.0
Medium Trucks:	69.8	68.4	66.0	64.4	71.5	71.9
Heavy Trucks:	72.9	71.5	67.9	68.0	75.0	75.2
Vehicle Noise:	75.3	74.0	70.8	70.2	77.3	77.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	134	289	622	1,341
CNEL:	140	301	648	1,395

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Merrill Av.
Road Segment: e/o Grove Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,275 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,217 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	82.41%
Medium Trucks:	69.4%	10.0%	20.6%	10.09%
Heavy Trucks:	69.0%	7.6%	23.4%	7.50%

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	-2.28	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-11.40	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-12.69	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:	68.0	66.8	63.7	62.3	69.5	69.8
Medium Trucks:	69.7	68.3	65.9	64.3	71.4	71.8
Heavy Trucks:	72.8	71.4	67.8	67.9	74.9	75.1
Vehicle Noise:	75.4	74.0	70.9	70.2	77.3	77.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	135	291	627	1,352
CNEL:	141	303	653	1,407

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Merrill Av.
Road Segment: e/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,455 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,311 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	83.33%
Medium Trucks:	69.4%	10.0%	20.6%	9.80%
Heavy Trucks:	69.0%	7.6%	23.4%	6.87%

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:	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	-1.91	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-11.20	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-12.75	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	67.1	64.1	62.6	69.9	70.2
Medium Trucks:	69.9	68.5	66.1	64.5	71.6	72.0
Heavy Trucks:	72.7	71.3	67.8	67.9	74.8	75.1
Vehicle Noise:	75.5	74.1	71.0	70.3	77.4	77.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	137	295	636	1,369
CNEL:	143	307	662	1,426

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Merrill Av.
Road Segment: w/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,214 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,213 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.59%
Medium Trucks:	69.4%	10.0%	20.6%	11.20%
Heavy Trucks:	69.0%	7.6%	23.4%	8.21%

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	-2.40	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-10.97	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-12.31	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:	67.9	66.6	63.6	62.2	69.4	69.7
Medium Trucks:	70.1	68.8	66.4	64.7	71.9	72.2
Heavy Trucks:	73.2	71.8	68.2	68.3	75.3	75.5
Vehicle Noise:	75.7	74.3	71.2	70.6	77.6	77.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	306	658	1,419
CNEL:	148	318	685	1,476

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Merrill Av.
Road Segment: e/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,034	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,198	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	36	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	79.75%
Medium Trucks:	69.4%	10.0%	20.6%	11.70%
Heavy Trucks:	69.0%	7.6%	23.4%	8.55%

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	-2.49	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-10.83	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-12.19	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:	67.8	66.5	63.5	62.1	69.3	69.6
Medium Trucks:	70.3	68.9	66.5	64.9	72.0	72.3
Heavy Trucks:	73.3	71.9	68.3	68.4	75.4	75.6
Vehicle Noise:	75.8	74.4	71.3	70.7	77.7	78.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	144	310	668	1,439
CNEL:	150	323	695	1,498

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Limonite
Road Segment: e/o Archibald Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,856	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,503	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	78	feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.41%
Medium Trucks:	69.4%	10.0%	20.6%	11.21%
Heavy Trucks:	69.0%	7.6%	23.4%	7.38%

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	-0.96	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-9.57	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-11.39	-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:	64.4	63.2	60.2	58.7	66.0	66.3
Medium Trucks:	66.8	65.4	63.1	61.4	68.6	68.9
Heavy Trucks:	69.8	68.4	64.9	65.0	71.9	72.2
Vehicle Noise:	72.4	71.0	67.9	67.2	74.3	74.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	146	316	680	1,465
CNEL:	152	328	708	1,525

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Limonite
Road Segment: w/o Sumner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,481	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,632	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	78	feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.40%
Medium Trucks:	69.4%	10.0%	20.6%	11.22%
Heavy Trucks:	69.0%	7.6%	23.4%	7.38%

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	-0.60	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-9.21	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-11.03	-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:	64.8	63.6	60.5	59.1	66.3	66.6
Medium Trucks:	67.2	65.8	63.4	61.8	68.9	69.3
Heavy Trucks:	70.2	68.8	65.2	65.3	72.3	72.5
Vehicle Noise:	72.7	71.3	68.2	67.6	74.6	74.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	155	333	718	1,547
CNEL:	161	347	748	1,611

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Limonite
Road Segment: w/o Scholar Wy.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,042	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,597	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	78	feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.24%
Heavy Trucks:	69.0%	7.6%	23.4%	7.39%

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	-0.70	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-9.30	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-11.12	-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:	64.7	63.5	60.4	59.0	66.3	66.5
Medium Trucks:	67.1	65.7	63.3	61.7	68.8	69.2
Heavy Trucks:	70.1	68.7	65.1	65.2	72.2	72.4
Vehicle Noise:	72.6	71.2	68.1	67.5	74.5	74.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	153	329	709	1,527
CNEL:	159	342	738	1,589

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Limonite
Road Segment: w/o Hamner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,620	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,643	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	78	feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.24%
Heavy Trucks:	69.0%	7.6%	23.4%	7.39%

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	-0.58	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-9.17	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.99	-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:	64.8	63.6	60.6	59.1	66.4	66.7
Medium Trucks:	67.2	65.8	63.5	61.8	69.0	69.3
Heavy Trucks:	70.2	68.8	65.3	65.3	72.3	72.5
Vehicle Noise:	72.8	71.4	68.3	67.6	74.7	74.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	156	335	722	1,556
CNEL:	162	349	752	1,619

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A
Road Name: Limonite
Road Segment: e/o Hamner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,076	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,759	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	78	feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.34%
Medium Trucks:	69.4%	10.0%	20.6%	11.26%
Heavy Trucks:	69.0%	7.6%	23.4%	7.40%

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	-0.28	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-8.87	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.69	-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:	65.1	63.9	60.9	59.4	66.7	67.0
Medium Trucks:	67.5	66.1	63.8	62.1	69.3	69.6
Heavy Trucks:	70.5	69.1	65.6	65.6	72.6	72.8
Vehicle Noise:	73.1	71.7	68.6	67.9	75.0	75.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	163	351	756	1,629
CNEL:	170	365	787	1,696

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Euclid Av.
Road Segment: n/o SR-60
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,093	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,877	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.43%
Medium Trucks:	69.4%	10.0%	20.6%	11.29%
Heavy Trucks:	69.0%	7.6%	23.4%	7.28%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	2.37	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	77.72	-6.21	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-8.12	2.47	-1.20	*-5.21*	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	68.9	65.8	64.4	71.6	71.9
Medium Trucks:	72.8	71.4	69.0	67.4	74.5	74.8
Heavy Trucks:	76.1	74.7	71.2	71.3	78.2	78.5
Vehicle Noise:	78.5	77.1	74.0	73.3	80.4	80.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	415	893	1,924	4,146
CNEL:	431	929	2,002	4,314

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Euclid Av.
Road Segment: n/o SR-60 EB Ramps
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,914	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,942	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	79.83%
Medium Trucks:	69.4%	10.0%	20.6%	11.81%
Heavy Trucks:	69.0%	7.6%	23.4%	8.36%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.87	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-6.43	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-7.93	2.47	-1.20	*-5.21*	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	70.3	67.3	65.8	73.1	73.4
Medium Trucks:	74.3	72.9	70.5	68.9	76.0	76.3
Heavy Trucks:	77.6	76.2	72.6	72.7	79.7	79.9
Vehicle Noise:	79.9	78.6	75.4	74.8	81.9	82.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	519	1,118	2,410	5,191
CNEL:	540	1,164	2,507	5,402

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Euclid Av.
Road Segment: n/o Walnut Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,474 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,987 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	79.91%
Medium Trucks:	69.4%	10.0%	20.6%	11.77%
Heavy Trucks:	69.0%	7.6%	23.4%	8.32%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.94	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-6.38	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-7.88	2.47	-1.20	*-5.21*	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	70.4	67.4	65.9	73.2	73.5
Medium Trucks:	74.3	72.9	70.6	68.9	76.1	76.4
Heavy Trucks:	77.6	76.2	72.7	72.8	79.7	80.0
Vehicle Noise:	80.0	78.6	75.5	74.9	81.9	82.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	523	1,127	2,428	5,231
CNEL:	544	1,173	2,526	5,443

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Euclid Av.
Road Segment: n/o Riverside Dr.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,291 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,813 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	79.88%
Medium Trucks:	69.4%	10.0%	20.6%	11.76%
Heavy Trucks:	69.0%	7.6%	23.4%	8.36%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.68	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-6.64	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.12	2.47	-1.20	*-5.21*	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	70.1	67.1	65.6	72.9	73.2
Medium Trucks:	74.1	72.7	70.3	68.7	75.8	76.1
Heavy Trucks:	77.4	76.0	72.4	72.5	79.5	79.7
Vehicle Noise:	79.7	78.4	75.2	74.6	81.7	81.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	503	1,085	2,337	5,034
CNEL:	524	1,129	2,431	5,238

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Euclid Av.
Road Segment: n/o Chino Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,768 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,532 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	79.93%
Medium Trucks:	69.4%	10.0%	20.6%	11.68%
Heavy Trucks:	69.0%	7.6%	23.4%	8.39%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.22	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-7.13	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.56	2.47	-1.20	*-5.21*	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:	70.9	69.7	66.6	65.2	72.4	72.7
Medium Trucks:	73.6	72.2	69.8	68.2	75.3	75.6
Heavy Trucks:	77.0	75.5	72.0	72.1	79.1	79.3
Vehicle Noise:	79.3	77.9	74.8	74.2	81.2	81.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	470	1,012	2,179	4,696
CNEL:	489	1,053	2,268	4,886

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Euclid Av.
Road Segment: n/o Schaefer Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,204 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,726 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	80.10%
Medium Trucks:	69.4%	10.0%	20.6%	11.61%
Heavy Trucks:	69.0%	7.6%	23.4%	8.29%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.55	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-6.83	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.30	2.47	-1.20	*-5.21*	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	70.0	67.0	65.5	72.8	73.1
Medium Trucks:	73.9	72.5	70.1	68.5	75.6	75.9
Heavy Trucks:	77.2	75.8	72.3	72.4	79.3	79.6
Vehicle Noise:	79.6	78.2	75.1	74.4	81.5	81.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	490	1,057	2,276	4,904
CNEL:	510	1,099	2,369	5,103

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Euclid Av.
Road Segment: n/o Edison Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,177 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,883 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	80.23%
Medium Trucks:	69.4%	10.0%	20.6%	11.56%
Heavy Trucks:	69.0%	7.6%	23.4%	8.21%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.80	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-6.61	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.09	2.47	-1.20	*-5.21*	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	70.2	67.2	65.8	73.0	73.3
Medium Trucks:	74.1	72.7	70.3	68.7	75.8	76.2
Heavy Trucks:	77.4	76.0	72.5	72.6	79.5	79.8
Vehicle Noise:	79.8	78.4	75.3	74.7	81.7	82.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	507	1,092	2,352	5,068
CNEL:	527	1,136	2,448	5,274

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Euclid Av.
Road Segment: n/o Eucalyptus Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,311 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,575 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	79.47%
Medium Trucks:	69.4%	10.0%	20.6%	11.97%
Heavy Trucks:	69.0%	7.6%	23.4%	8.57%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.27	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-6.95	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.40	2.47	-1.20	*-5.21*	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	69.7	66.7	65.2	72.5	72.8
Medium Trucks:	73.8	72.4	70.0	68.3	75.5	75.8
Heavy Trucks:	77.1	75.7	72.2	72.2	79.2	79.4
Vehicle Noise:	79.4	78.0	74.9	74.3	81.4	81.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	481	1,035	2,231	4,806
CNEL:	500	1,077	2,321	5,001

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Euclid Av.
Road Segment: n/o Merrill Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,786 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,613 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	79.22%
Medium Trucks:	69.4%	10.0%	20.6%	12.12%
Heavy Trucks:	69.0%	7.6%	23.4%	8.66%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	0.45	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-7.70	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.16	2.47	-1.20	*-5.21*	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:	73.5	72.2	69.2	67.7	75.0	75.3
Medium Trucks:	76.0	74.6	72.2	70.6	77.7	78.0
Heavy Trucks:	78.5	77.1	73.5	73.6	80.6	80.8
Vehicle Noise:	81.2	79.8	76.8	76.1	83.1	83.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	630	1,357	2,925	6,301
CNEL:	656	1,413	3,045	6,560

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Euclid Av.
Road Segment: n/o Kimball Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,236 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,808 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	80.61%
Medium Trucks:	69.4%	10.0%	20.6%	11.47%
Heavy Trucks:	69.0%	7.6%	23.4%	7.92%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	0.84	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-7.63	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.24	2.47	-1.20	*-5.21*	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	72.6	69.6	68.1	75.4	75.7
Medium Trucks:	76.0	74.7	72.3	70.6	77.8	78.1
Heavy Trucks:	78.4	77.0	73.5	73.6	80.5	80.8
Vehicle Noise:	81.3	79.9	76.8	76.1	83.2	83.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	634	1,366	2,944	6,342
CNEL:	660	1,423	3,065	6,604

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Euclid Av.
Road Segment: n/o Bickmore Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,177 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,847 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.12%
Medium Trucks:	69.4%	10.0%	20.6%	11.60%
Heavy Trucks:	69.0%	7.6%	23.4%	8.27%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.01	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.40	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.87	2.47	-1.20	-5.21	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:	72.0	70.8	67.7	66.3	73.5	73.8
Medium Trucks:	74.3	72.9	70.5	68.9	76.0	76.3
Heavy Trucks:	76.8	75.4	71.8	71.9	78.9	79.1
Vehicle Noise:	79.6	78.2	75.1	74.4	81.5	81.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	488	1,052	2,266	4,882
CNEL:	508	1,095	2,360	5,083

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Euclid Av.
Road Segment: n/o Pine Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,632 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,804 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.09%
Medium Trucks:	69.4%	10.0%	20.6%	11.61%
Heavy Trucks:	69.0%	7.6%	23.4%	8.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.11	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.50	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.96	2.47	-1.20	-5.21	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	70.6	67.6	66.2	73.4	73.7
Medium Trucks:	74.2	72.8	70.4	68.8	75.9	76.2
Heavy Trucks:	76.7	75.3	71.7	71.8	78.8	79.0
Vehicle Noise:	79.5	78.1	75.0	74.3	81.4	81.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	481	1,036	2,233	4,811
CNEL:	501	1,079	2,325	5,009

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Euclid Av.
Road Segment: s/o Pine Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,086 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,195 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.65%
Medium Trucks:	69.4%	10.0%	20.6%	11.49%
Heavy Trucks:	69.0%	7.6%	23.4%	7.86%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.40	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-7.06	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.71	2.47	-1.20	-5.21	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:	74.4	73.2	70.1	68.7	75.9	76.2
Medium Trucks:	76.6	75.2	72.8	71.2	78.3	78.7
Heavy Trucks:	79.0	77.5	74.0	74.1	81.1	81.3
Vehicle Noise:	81.8	80.4	77.4	76.6	83.7	84.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	690	1,486	3,201	6,897
CNEL:	718	1,547	3,334	7,182

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Grove Av.
Road Segment: n/o SR-60
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,796 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,773 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.56%
Medium Trucks:	69.4%	10.0%	20.6%	11.21%
Heavy Trucks:	69.0%	7.6%	23.4%	7.23%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.71	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-6.91	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.82	0.61	-1.20	-5.34	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:	69.6	68.3	65.3	63.8	71.1	71.4
Medium Trucks:	72.0	70.6	68.2	66.5	73.7	74.0
Heavy Trucks:	74.8	73.4	69.9	70.0	76.9	77.2
Vehicle Noise:	77.4	76.0	72.9	72.3	79.3	79.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	251	541	1,167	2,513
CNEL:	262	564	1,214	2,616

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Grove Av.
Road Segment: n/o SR-60 EB Ramps
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,032	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,314	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.83%
Medium Trucks:	69.4%	10.0%	20.6%	11.05%
Heavy Trucks:	69.0%	7.6%	23.4%	7.12%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.94	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.76	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.67	0.61	-1.20	*-5.34*	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	67.5	64.5	63.1	70.3	70.6
Medium Trucks:	71.1	69.7	67.3	65.7	72.8	73.2
Heavy Trucks:	74.0	72.6	69.0	69.1	76.1	76.3
Vehicle Noise:	76.6	75.2	72.1	71.4	78.5	78.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	221	476	1,026	2,210
CNEL:	230	496	1,068	2,300

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Grove Av.
Road Segment: n/o Walnut Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,712	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,890	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	82.13%
Medium Trucks:	69.4%	10.0%	20.6%	10.87%
Heavy Trucks:	69.0%	7.6%	23.4%	7.00%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.07	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-8.71	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.62	0.61	-1.20	*-5.34*	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	66.7	63.6	62.2	69.5	69.8
Medium Trucks:	70.1	68.8	66.4	64.7	71.9	72.2
Heavy Trucks:	73.0	71.6	68.1	68.2	75.1	75.4
Vehicle Noise:	75.6	74.3	71.2	70.5	77.6	77.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	191	412	888	1,914
CNEL:	199	429	925	1,992

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Grove Av.
Road Segment: n/o Riverside Dr.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,914	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,348	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	82.43%
Medium Trucks:	69.4%	10.0%	20.6%	10.68%
Heavy Trucks:	69.0%	7.6%	23.4%	6.89%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-1.38	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-10.25	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-12.16	0.61	-1.20	*-5.34*	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:	66.5	65.2	62.2	60.7	68.0	68.3
Medium Trucks:	68.6	67.2	64.8	63.2	70.3	70.7
Heavy Trucks:	71.5	70.1	66.5	66.6	73.6	73.8
Vehicle Noise:	74.1	72.7	69.6	69.0	76.0	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	151	326	703	1,514
CNEL:	158	339	731	1,576

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Grove Av.
Road Segment: n/o Chino Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,939	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	952	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	62	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	83.25%
Medium Trucks:	69.4%	10.0%	20.6%	10.19%
Heavy Trucks:	69.0%	7.6%	23.4%	6.56%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-3.31	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-12.43	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-14.34	1.46	-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:	67.1	65.9	62.9	61.4	68.7	69.0
Medium Trucks:	68.8	67.4	65.1	63.4	70.6	70.9
Heavy Trucks:	71.3	69.9	66.3	66.4	73.4	73.6
Vehicle Noise:	74.2	72.8	69.7	69.0	76.1	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	127	274	591	1,273
CNEL:	133	286	615	1,326

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Grove Av.
Road Segment: n/o Schaefer Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,947 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	873 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	83.42%
Medium Trucks:	69.4%	10.0%	20.6%	10.08%
Heavy Trucks:	69.0%	7.6%	23.4%	6.50%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-3.67	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-12.85	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-14.76	1.46	-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:	66.8	65.5	62.5	61.0	68.3	68.6
Medium Trucks:	68.4	67.0	64.6	63.0	70.1	70.5
Heavy Trucks:	70.9	69.5	65.9	66.0	73.0	73.2
Vehicle Noise:	73.8	72.4	69.3	68.6	75.7	75.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	120	257	555	1,195
CNEL:	124	268	578	1,245

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Grove Av.
Road Segment: n/o Edison Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,824 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	783 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	83.65%
Medium Trucks:	69.4%	10.0%	20.6%	9.94%
Heavy Trucks:	69.0%	7.6%	23.4%	6.41%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-4.13	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-13.38	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-15.29	1.46	-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	65.1	62.0	60.6	67.8	68.1
Medium Trucks:	67.9	66.5	64.1	62.5	69.6	69.9
Heavy Trucks:	70.3	68.9	65.4	65.5	72.4	72.7
Vehicle Noise:	73.3	71.9	68.8	68.1	75.2	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	110	238	512	1,104
CNEL:	115	248	534	1,149

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Grove Av.
Road Segment: n/o Eucalyptus Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,249 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	976 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	87.05%
Medium Trucks:	69.4%	10.0%	20.6%	7.87%
Heavy Trucks:	69.0%	7.6%	23.4%	5.07%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-3.00	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-13.44	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-15.35	1.46	-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:	67.4	66.2	63.2	61.7	69.0	69.3
Medium Trucks:	67.8	66.4	64.0	62.4	69.6	69.9
Heavy Trucks:	70.3	68.9	65.3	65.4	72.4	72.6
Vehicle Noise:	73.5	72.1	69.0	68.3	75.3	75.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	114	245	528	1,137
CNEL:	118	255	550	1,184

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Grove Av.
Road Segment: n/o Street A
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,944 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	872 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	89.78%
Medium Trucks:	69.4%	10.0%	20.6%	6.21%
Heavy Trucks:	69.0%	7.6%	23.4%	4.00%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-3.36	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-14.96	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-16.86	1.46	-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:	67.1	65.8	62.8	61.4	68.6	68.9
Medium Trucks:	66.3	64.9	62.5	60.9	68.0	68.4
Heavy Trucks:	68.8	67.4	63.8	63.9	70.9	71.1
Vehicle Noise:	72.3	70.9	67.9	67.0	74.1	74.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	94	203	437	942
CNEL:	98	212	456	982

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Grove Av.
Road Segment: n/o Merrill Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,944 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	872 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	89.78%
Medium Trucks:	69.4%	10.0%	20.6%	6.21%
Heavy Trucks:	69.0%	7.6%	23.4%	4.00%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-3.36	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-14.96	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-16.86	1.46	-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:	67.1	65.8	62.8	61.4	68.6	68.9
Medium Trucks:	66.3	64.9	62.5	60.9	68.0	68.4
Heavy Trucks:	68.8	67.4	63.8	63.9	70.9	71.1
Vehicle Noise:	72.3	70.9	67.9	67.0	74.1	74.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	94	203	437	942
CNEL:	98	212	456	982

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Archibald Av.
Road Segment: n/o SR-60
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,757 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,212 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.45%
Medium Trucks:	69.4%	10.0%	20.6%	11.28%
Heavy Trucks:	69.0%	7.6%	23.4%	7.27%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	0.26	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-8.32	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.23	0.61	-1.20	*-5.34*	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	68.6	65.6	64.1	71.4	71.7
Medium Trucks:	72.1	70.7	68.3	66.7	73.8	74.1
Heavy Trucks:	74.6	73.1	69.6	69.7	76.7	76.9
Vehicle Noise:	77.4	76.0	72.9	72.2	79.3	79.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	248	535	1,153	2,484
CNEL:	259	557	1,201	2,587

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Archibald Av.
Road Segment: n/o SR-60 EB Ramps
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,611 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,280 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.45%
Medium Trucks:	69.4%	10.0%	20.6%	11.28%
Heavy Trucks:	69.0%	7.6%	23.4%	7.27%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	0.39	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-8.19	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.10	0.61	-1.20	*-5.34*	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:	70.0	68.7	65.7	64.3	71.5	71.8
Medium Trucks:	72.2	70.8	68.4	66.8	74.0	74.3
Heavy Trucks:	74.7	73.3	69.7	69.8	76.8	77.0
Vehicle Noise:	77.5	76.1	73.0	72.3	79.4	79.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	253	546	1,177	2,535
CNEL:	264	569	1,225	2,640

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Archibald Av.
Road Segment: n/o Riverside Dr.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,742 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,370 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	80.40%
Medium Trucks:	69.4%	10.0%	20.6%	11.54%
Heavy Trucks:	69.0%	7.6%	23.4%	8.06%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	0.51	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-7.92	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.48	0.61	-1.20	*-5.34*	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	68.9	65.8	64.4	71.6	71.9
Medium Trucks:	72.5	71.1	68.7	67.1	74.2	74.5
Heavy Trucks:	75.3	73.9	70.3	70.4	77.4	77.6
Vehicle Noise:	77.9	76.5	73.4	72.8	79.8	80.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	271	584	1,259	2,711
CNEL:	282	608	1,310	2,823

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Archibald Av.
Road Segment: n/o Chino Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,336	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,179	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	80.56%
Medium Trucks:	69.4%	10.0%	20.6%	11.41%
Heavy Trucks:	69.0%	7.6%	23.4%	8.03%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	0.15	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-8.34	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.87	0.61	-1.20	*-5.34*	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:	69.7	68.5	65.5	64.0	71.3	71.6
Medium Trucks:	72.1	70.7	68.3	66.6	73.8	74.1
Heavy Trucks:	74.9	73.5	70.0	70.1	77.0	77.2
Vehicle Noise:	77.5	76.1	73.0	72.4	79.4	79.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	255	550	1,186	2,555
CNEL:	266	573	1,234	2,659

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Archibald Av.
Road Segment: n/o Schaefer Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,718	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,811	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	80.49%
Medium Trucks:	69.4%	10.0%	20.6%	11.37%
Heavy Trucks:	69.0%	7.6%	23.4%	8.14%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-1.07	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-9.57	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-11.02	0.61	-1.20	*-5.34*	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	68.8	65.8	64.4	71.6	71.9
Medium Trucks:	72.2	70.8	68.5	66.8	74.0	74.3
Heavy Trucks:	74.8	73.4	69.8	69.9	76.9	77.1
Vehicle Noise:	77.6	76.2	73.1	72.4	79.5	79.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	256	552	1,190	2,564
CNEL:	267	575	1,239	2,670

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Archibald Av.
Road Segment: n/o Edison Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,718	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,811	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	80.49%
Medium Trucks:	69.4%	10.0%	20.6%	11.37%
Heavy Trucks:	69.0%	7.6%	23.4%	8.14%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-1.07	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-9.57	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-11.02	0.61	-1.20	*-5.34*	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	68.8	65.8	64.4	71.6	71.9
Medium Trucks:	72.2	70.8	68.5	66.8	74.0	74.3
Heavy Trucks:	74.8	73.4	69.8	69.9	76.9	77.1
Vehicle Noise:	77.6	76.2	73.1	72.4	79.5	79.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	256	552	1,190	2,564
CNEL:	267	575	1,239	2,670

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Archibald Av.
Road Segment: n/o Eucalyptus Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,997	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,152	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	78.06%
Medium Trucks:	69.4%	10.0%	20.6%	12.51%
Heavy Trucks:	69.0%	7.6%	23.4%	9.43%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-0.46	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-8.41	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.64	0.61	-1.20	*-5.34*	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	69.5	66.4	65.0	72.3	72.5
Medium Trucks:	73.4	72.0	69.6	68.0	75.1	75.5
Heavy Trucks:	76.2	74.7	71.2	71.3	78.3	78.5
Vehicle Noise:	78.8	77.4	74.3	73.6	80.7	80.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	309	665	1,432	3,086
CNEL:	321	692	1,491	3,212

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Archibald Av.
Road Segment: n/o Merrill Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,796 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,136 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	78.03%
Medium Trucks:	69.4%	10.0%	20.6%	12.52%
Heavy Trucks:	69.0%	7.6%	23.4%	9.44%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-0.49	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-8.44	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.66	0.61	-1.20	*-5.34*	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	69.4	66.4	65.0	72.2	72.5
Medium Trucks:	73.4	72.0	69.6	68.0	75.1	75.4
Heavy Trucks:	76.1	74.7	71.2	71.3	78.2	78.5
Vehicle Noise:	78.7	77.3	74.3	73.6	80.6	80.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	307	662	1,426	3,073
CNEL:	320	689	1,485	3,199

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Archibald Av.
Road Segment: n/o Limonite Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,599 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,279 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.80%
Medium Trucks:	69.4%	10.0%	20.6%	10.87%
Heavy Trucks:	69.0%	7.6%	23.4%	7.33%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	0.00	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-8.77	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.48	0.61	-1.20	*-5.34*	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	69.9	66.9	65.4	72.7	73.0
Medium Trucks:	73.0	71.7	69.3	67.6	74.8	75.1
Heavy Trucks:	75.3	73.9	70.4	70.5	77.4	77.7
Vehicle Noise:	78.3	76.9	73.8	73.1	80.2	80.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	286	616	1,327	2,859
CNEL:	298	641	1,382	2,977

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Archibald Av.
Road Segment: n/o Schleisman Rd.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,363 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,101 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	120 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	110.0 feet
Centerline Dist. to Observer:	110.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.71%
Medium Trucks:	69.4%	10.0%	20.6%	11.12%
Heavy Trucks:	69.0%	7.6%	23.4%	7.17%

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:	92.331
Medium Trucks:	92.235
Heavy Trucks:	92.244

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	0.05	-4.10	-1.20	*-4.78*	0.000	0.000
Medium Trucks:	81.00	-8.61	-4.09	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.52	-4.09	-1.20	*-5.14*	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:	65.0	63.7	60.7	59.2	66.5	66.8
Medium Trucks:	67.1	65.7	63.3	61.7	68.8	69.2
Heavy Trucks:	69.6	68.2	64.6	64.7	71.7	71.9
Vehicle Noise:	72.4	71.0	67.9	67.2	74.3	74.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	212	457	985	2,123
CNEL:	221	476	1,026	2,211

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Archibald Av.
Road Segment: s/o Schleisman Rd.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,066 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,838 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	120 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	110.0 feet
Centerline Dist. to Observer:	110.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.76%
Medium Trucks:	69.4%	10.0%	20.6%	11.09%
Heavy Trucks:	69.0%	7.6%	23.4%	7.15%

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:	92.331
Medium Trucks:	92.235
Heavy Trucks:	92.244

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-0.53	-4.10	-1.20	*-4.78*	0.000	0.000
Medium Trucks:	81.00	-9.20	-4.09	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-11.11	-4.09	-1.20	*-5.14*	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:	64.4	63.1	60.1	58.7	65.9	66.2
Medium Trucks:	66.5	65.1	62.7	61.1	68.2	68.6
Heavy Trucks:	69.0	67.6	64.0	64.1	71.1	71.3
Vehicle Noise:	71.8	70.4	67.3	66.6	73.7	74.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	194	418	900	1,939
CNEL:	202	435	937	2,019

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Edison Av.
Road Segment: w/o Pipeline Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,975	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,788	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	82.01%
Medium Trucks:	69.4%	10.0%	20.6%	10.94%
Heavy Trucks:	69.0%	7.6%	23.4%	7.05%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.75	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.00	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.90	0.37	-1.20	*-5.34*	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	68.1	65.1	63.6	70.9	71.2
Medium Trucks:	71.6	70.2	67.8	66.2	73.4	73.7
Heavy Trucks:	74.5	73.1	69.6	69.6	76.6	76.8
Vehicle Noise:	77.1	75.7	72.6	72.0	79.0	79.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	240	516	1,113	2,397
CNEL:	250	538	1,158	2,495

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Edison Av.
Road Segment: w/o Ramona Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,966	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,388	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	82.12%
Medium Trucks:	69.4%	10.0%	20.6%	10.88%
Heavy Trucks:	69.0%	7.6%	23.4%	7.01%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.09	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.69	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.60	0.37	-1.20	*-5.34*	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	67.4	64.4	63.0	70.2	70.5
Medium Trucks:	70.9	69.5	67.2	65.5	72.7	73.0
Heavy Trucks:	73.8	72.4	68.9	68.9	75.9	76.1
Vehicle Noise:	76.4	75.0	71.9	71.3	78.3	78.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	216	464	1,000	2,155
CNEL:	224	483	1,041	2,244

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Edison Av.
Road Segment: w/o Central Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,631	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,963	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	82.28%
Medium Trucks:	69.4%	10.0%	20.6%	10.78%
Heavy Trucks:	69.0%	7.6%	23.4%	6.94%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.24	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-8.58	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.49	0.37	-1.20	*-5.34*	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:	67.8	66.6	63.6	62.1	69.4	69.7
Medium Trucks:	70.0	68.6	66.3	64.6	71.8	72.1
Heavy Trucks:	72.9	71.5	68.0	68.1	75.0	75.3
Vehicle Noise:	75.5	74.2	71.1	70.4	77.4	77.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	188	405	874	1,882
CNEL:	196	422	909	1,959

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Edison Av.
Road Segment: w/o Mountain Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,524	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,273	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	82.23%
Medium Trucks:	69.4%	10.0%	20.6%	10.80%
Heavy Trucks:	69.0%	7.6%	23.4%	6.96%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.88	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.93	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.84	0.37	-1.20	*-5.34*	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	67.2	64.2	62.8	70.0	70.3
Medium Trucks:	70.7	69.3	66.9	65.3	72.4	72.7
Heavy Trucks:	73.6	72.2	68.6	68.7	75.7	75.9
Vehicle Noise:	76.2	74.8	71.7	71.0	78.1	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	208	448	965	2,078
CNEL:	216	466	1,004	2,164

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Edison Av.
Road Segment: w/o San Antonio Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,414	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,946	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	82.47%
Medium Trucks:	69.4%	10.0%	20.6%	10.66%
Heavy Trucks:	69.0%	7.6%	23.4%	6.87%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.22	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-8.67	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.58	0.37	-1.20	*-5.34*	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:	67.8	66.6	63.5	62.1	69.4	69.7
Medium Trucks:	69.9	68.6	66.2	64.5	71.7	72.0
Heavy Trucks:	72.8	71.4	67.9	68.0	74.9	75.2
Vehicle Noise:	75.5	74.1	71.0	70.3	77.4	77.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	186	401	863	1,860
CNEL:	194	417	899	1,936

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Edison Av.
Road Segment: w/o Euclid Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,943	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,589	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	82.72%
Medium Trucks:	69.4%	10.0%	20.6%	10.51%
Heavy Trucks:	69.0%	7.6%	23.4%	6.77%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.65	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-9.61	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-11.52	0.37	-1.20	*-5.34*	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:	67.0	65.7	62.7	61.2	68.5	68.8
Medium Trucks:	69.0	67.6	65.2	63.6	70.7	71.1
Heavy Trucks:	71.9	70.5	66.9	67.0	74.0	74.2
Vehicle Noise:	74.5	73.2	70.1	69.4	76.4	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	161	348	749	1,613
CNEL:	168	362	779	1,679

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Edison Av.
Road Segment: e/o Euclid Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,282	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,138	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	84.67%
Medium Trucks:	69.4%	10.0%	20.6%	9.32%
Heavy Trucks:	69.0%	7.6%	23.4%	6.01%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-2.46	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-12.04	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-13.95	2.47	-1.20	*-5.21*	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	67.7	64.7	63.2	70.5	70.8
Medium Trucks:	70.2	68.8	66.5	64.8	72.0	72.3
Heavy Trucks:	72.7	71.3	67.7	67.8	74.8	75.0
Vehicle Noise:	75.7	74.3	71.2	70.5	77.6	77.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	269	579	1,247	2,687
CNEL:	280	603	1,299	2,798

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Edison Av.
Road Segment: w/o Grove Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,318	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	982	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	85.20%
Medium Trucks:	69.4%	10.0%	20.6%	9.00%
Heavy Trucks:	69.0%	7.6%	23.4%	5.80%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-3.07	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-12.83	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-14.74	2.47	-1.20	*-5.21*	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	67.1	64.1	62.6	69.9	70.2
Medium Trucks:	69.4	68.0	65.7	64.0	71.2	71.5
Heavy Trucks:	71.9	70.5	66.9	67.0	74.0	74.2
Vehicle Noise:	74.9	73.6	70.5	69.7	76.8	77.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	239	515	1,110	2,391
CNEL:	249	537	1,156	2,491

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Edison Av.
Road Segment: w/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,043 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,040 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.02	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-11.58	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-13.49	2.47	-1.20	*-5.21*	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	67.2	64.1	62.7	69.9	70.2
Medium Trucks:	70.7	69.3	66.9	65.3	72.4	72.7
Heavy Trucks:	73.2	71.7	68.2	68.3	75.3	75.5
Vehicle Noise:	75.9	74.6	71.5	70.8	77.8	78.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	280	603	1,300	2,801
CNEL:	292	628	1,354	2,916

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Edison Av.
Road Segment: w/o Archibald Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,189 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,370 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	85.42%
Medium Trucks:	69.4%	10.0%	20.6%	8.87%
Heavy Trucks:	69.0%	7.6%	23.4%	5.71%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.61	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-11.45	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-13.36	2.47	-1.20	*-5.21*	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	68.6	65.5	64.1	71.4	71.7
Medium Trucks:	70.8	69.4	67.0	65.4	72.6	72.9
Heavy Trucks:	73.3	71.9	68.3	68.4	75.4	75.6
Vehicle Noise:	76.3	75.0	71.9	71.1	78.2	78.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	296	638	1,375	2,963
CNEL:	309	665	1,433	3,087

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Edison Av.
Road Segment: w/o Haven Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,343 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,860 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.28%
Medium Trucks:	69.4%	10.0%	20.6%	10.90%
Heavy Trucks:	69.0%	7.6%	23.4%	7.82%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.50	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-9.22	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.67	2.47	-1.20	*-5.21*	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:	70.9	69.7	66.7	65.2	72.5	72.8
Medium Trucks:	73.0	71.7	69.3	67.6	74.8	75.1
Heavy Trucks:	76.0	74.6	71.0	71.1	78.1	78.3
Vehicle Noise:	78.6	77.2	74.1	73.4	80.5	80.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	420	906	1,951	4,204
CNEL:	438	943	2,031	4,376

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Edison Av.
Road Segment: e/o Haven Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,944 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,908 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.19%
Medium Trucks:	69.4%	10.0%	20.6%	10.97%
Heavy Trucks:	69.0%	7.6%	23.4%	7.84%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.39	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-9.09	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.55	2.47	-1.20	*-5.21*	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	69.8	66.8	65.3	72.6	72.9
Medium Trucks:	73.2	71.8	69.4	67.8	74.9	75.2
Heavy Trucks:	76.1	74.7	71.1	71.2	78.2	78.4
Vehicle Noise:	78.7	77.3	74.2	73.5	80.6	80.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	429	923	1,989	4,285
CNEL:	446	961	2,071	4,461

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Ontario Ranch Rd.
Road Segment: e/o Hamner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,596	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,757	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	78	feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.25%
Medium Trucks:	69.4%	10.0%	20.6%	11.08%
Heavy Trucks:	69.0%	7.6%	23.4%	7.67%

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	1.21	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	81.00	-7.44	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.04	-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:	68.4	67.1	64.1	62.6	69.9	70.2
Medium Trucks:	70.5	69.1	66.7	65.1	72.2	72.6
Heavy Trucks:	73.3	71.9	68.3	68.4	75.4	75.6
Vehicle Noise:	76.0	74.6	71.5	70.8	77.9	78.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	254	548	1,181	2,544
CNEL:	265	570	1,229	2,648

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Eucalyptus Av.
Road Segment: w/o Bon View Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,325	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	345	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	83.96%
Medium Trucks:	69.4%	10.0%	20.6%	9.75%
Heavy Trucks:	69.0%	7.6%	23.4%	6.28%

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:	66.51	-6.71	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-16.06	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-17.97	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:	59.9	58.6	55.6	54.2	61.4	61.7
Medium Trucks:	61.8	60.4	58.0	56.3	63.5	63.8
Heavy Trucks:	65.1	63.7	60.2	60.3	67.2	67.5
Vehicle Noise:	67.6	66.2	63.1	62.4	69.5	69.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	41	88	189	408
CNEL:	42	91	197	424

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Eucalyptus Av.
Road Segment: w/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,676	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	134	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-10.96	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-19.53	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-21.43	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:	55.6	54.4	51.4	49.9	57.2	57.5
Medium Trucks:	58.3	56.9	54.5	52.9	60.0	60.4
Heavy Trucks:	61.7	60.2	56.7	56.8	63.8	64.0
Vehicle Noise:	64.0	62.6	59.5	58.9	65.9	66.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	24	51	109	235
CNEL:	24	53	114	245

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Eucalyptus Av.
Road Segment: e/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,820	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	145	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-10.61	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-19.17	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-21.08	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:	56.0	54.7	51.7	50.3	57.5	57.8
Medium Trucks:	58.7	57.3	54.9	53.2	60.4	60.7
Heavy Trucks:	62.0	60.6	57.1	57.2	64.1	64.4
Vehicle Noise:	64.4	63.0	59.8	59.2	66.3	66.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	25	54	115	249
CNEL:	26	56	120	259

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Eucalyptus Av.
Road Segment: w/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,820 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	145 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-10.61	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-19.17	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-21.08	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:	56.0	54.7	51.7	50.3	57.5	57.8
Medium Trucks:	58.7	57.3	54.9	53.2	60.4	60.7
Heavy Trucks:	62.0	60.6	57.1	57.2	64.1	64.4
Vehicle Noise:	64.4	63.0	59.8	59.2	66.3	66.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	115	249
CNEL:	26	56	120	259

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Eucalyptus Av.
Road Segment: e/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,820 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	145 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-10.61	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-19.17	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-21.08	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:	56.0	54.7	51.7	50.3	57.5	57.8
Medium Trucks:	58.7	57.3	54.9	53.2	60.4	60.7
Heavy Trucks:	62.0	60.6	57.1	57.2	64.1	64.4
Vehicle Noise:	64.4	63.0	59.8	59.2	66.3	66.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	115	249
CNEL:	26	56	120	259

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Merrill Av.
Road Segment: e/o Euclid Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,877 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,026 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	73.83%
Medium Trucks:	69.4%	10.0%	20.6%	13.74%
Heavy Trucks:	69.0%	7.6%	23.4%	12.43%

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	-3.50	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-10.80	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-11.24	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:	66.8	65.5	62.5	61.1	68.3	68.6
Medium Trucks:	70.3	68.9	66.5	64.9	72.0	72.4
Heavy Trucks:	74.2	72.8	69.3	69.4	76.4	76.6
Vehicle Noise:	76.2	74.9	71.7	71.1	78.2	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	155	333	718	1,548
CNEL:	161	347	747	1,610

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Merrill Av.
Road Segment: w/o Grove Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,912 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,188 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	75.01%
Medium Trucks:	69.4%	10.0%	20.6%	13.32%
Heavy Trucks:	69.0%	7.6%	23.4%	11.67%

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	-2.79	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-10.30	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-10.87	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:	67.5	66.2	63.2	61.8	69.0	69.3
Medium Trucks:	70.8	69.4	67.0	65.4	72.5	72.9
Heavy Trucks:	74.6	73.2	69.6	69.7	76.7	76.9
Vehicle Noise:	76.7	75.3	72.1	71.6	78.6	78.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	165	356	768	1,654
CNEL:	172	371	799	1,721

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Merrill Av.
Road Segment: e/o Grove Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,783	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,736	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	36	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	84.49%
Medium Trucks:	69.4%	10.0%	20.6%	8.41%
Heavy Trucks:	69.0%	7.6%	23.4%	7.11%

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	-0.63	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-10.65	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-11.38	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:	69.6	68.4	65.4	63.9	71.2	71.5
Medium Trucks:	70.5	69.1	66.7	65.0	72.2	72.5
Heavy Trucks:	74.1	72.7	69.1	69.2	76.2	76.4
Vehicle Noise:	76.6	75.3	72.1	71.5	78.5	78.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	163	352	758	1,633
CNEL:	170	366	789	1,699

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Merrill Av.
Road Segment: e/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,817	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,579	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	36	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.73%
Medium Trucks:	69.4%	10.0%	20.6%	9.98%
Heavy Trucks:	69.0%	7.6%	23.4%	8.29%

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	-1.19	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-10.32	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-11.13	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:	69.1	67.9	64.8	63.4	70.6	70.9
Medium Trucks:	70.8	69.4	67.0	65.4	72.5	72.8
Heavy Trucks:	74.4	72.9	69.4	69.5	76.5	76.7
Vehicle Noise:	76.8	75.4	72.2	71.6	78.7	78.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	167	359	774	1,667
CNEL:	174	374	805	1,735

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Merrill Av.
Road Segment: w/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,508	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,475	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	36	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	80.30%
Medium Trucks:	69.4%	10.0%	20.6%	10.77%
Heavy Trucks:	69.0%	7.6%	23.4%	8.93%

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:	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	-10.29	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-11.10	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:	68.7	67.5	64.4	63.0	70.3	70.6
Medium Trucks:	70.8	69.4	67.1	65.4	72.6	72.9
Heavy Trucks:	74.4	73.0	69.4	69.5	76.5	76.7
Vehicle Noise:	76.7	75.3	72.2	71.6	78.6	78.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	166	357	770	1,659
CNEL:	173	372	801	1,726

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Merrill Av.
Road Segment: e/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,839	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,422	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	36	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	77.44%
Medium Trucks:	69.4%	10.0%	20.6%	12.15%
Heavy Trucks:	69.0%	7.6%	23.4%	10.41%

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	-1.88	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	-10.59	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	67.2	64.1	62.7	69.9	70.2
Medium Trucks:	71.2	69.8	67.4	65.8	72.9	73.2
Heavy Trucks:	74.9	73.5	69.9	70.0	77.0	77.2
Vehicle Noise:	77.1	75.7	72.5	72.0	79.0	79.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	175	378	814	1,754
CNEL:	182	393	847	1,824

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Limonite
Road Segment: e/o Archibald Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,051 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,598 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.54%
Medium Trucks:	69.4%	10.0%	20.6%	10.94%
Heavy Trucks:	69.0%	7.6%	23.4%	7.51%

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	-0.69	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-9.41	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-11.04	-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:	64.7	63.5	60.4	59.0	66.3	66.6
Medium Trucks:	67.0	65.6	63.2	61.6	68.7	69.1
Heavy Trucks:	70.2	68.7	65.2	65.3	72.3	72.5
Vehicle Noise:	72.6	71.3	68.1	67.5	74.6	74.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	153	330	710	1,530
CNEL:	159	343	739	1,592

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Limonite
Road Segment: w/o Sumner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,676 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,728 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.53%
Medium Trucks:	69.4%	10.0%	20.6%	10.97%
Heavy Trucks:	69.0%	7.6%	23.4%	7.50%

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	-0.35	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-9.06	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.71	-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:	65.1	63.8	60.8	59.3	66.6	66.9
Medium Trucks:	67.3	66.0	63.6	61.9	69.1	69.4
Heavy Trucks:	70.5	69.1	65.5	65.6	72.6	72.8
Vehicle Noise:	73.0	71.6	68.5	67.8	74.9	75.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	161	347	748	1,611
CNEL:	168	361	778	1,677

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Limonite
Road Segment: w/o Scholar Wy.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,154 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,686 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.43%
Medium Trucks:	69.4%	10.0%	20.6%	11.03%
Heavy Trucks:	69.0%	7.6%	23.4%	7.54%

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	-0.46	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-9.14	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.79	-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:	64.9	63.7	60.7	59.2	66.5	66.8
Medium Trucks:	67.3	65.9	63.5	61.8	69.0	69.3
Heavy Trucks:	70.4	69.0	65.5	65.5	72.5	72.7
Vehicle Noise:	72.9	71.5	68.4	67.7	74.8	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	159	343	738	1,590
CNEL:	165	357	768	1,655

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Limonite
Road Segment: w/o Hamner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,731 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,732 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.43%
Medium Trucks:	69.4%	10.0%	20.6%	11.04%
Heavy Trucks:	69.0%	7.6%	23.4%	7.54%

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	-0.34	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-9.02	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.68	-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:	65.1	63.8	60.8	59.3	66.6	66.9
Medium Trucks:	67.4	66.0	63.6	62.0	69.1	69.4
Heavy Trucks:	70.5	69.1	65.6	65.7	72.6	72.9
Vehicle Noise:	73.0	71.6	68.5	67.9	74.9	75.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	162	349	751	1,619
CNEL:	168	363	782	1,685

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B
Road Name: Limonite
Road Segment: e/o Hamner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,105 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,841 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.33%
Medium Trucks:	69.4%	10.0%	20.6%	11.11%
Heavy Trucks:	69.0%	7.6%	23.4%	7.56%

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	-0.08	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-8.73	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.40	-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:	65.3	64.1	61.1	59.6	66.9	67.2
Medium Trucks:	67.7	66.3	63.9	62.3	69.4	69.7
Heavy Trucks:	70.8	69.4	65.8	65.9	72.9	73.1
Vehicle Noise:	73.3	71.9	68.8	68.1	75.2	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	169	364	784	1,690
CNEL:	176	379	816	1,759

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Euclid Av.
Road Segment: n/o SR-60
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,135 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,880 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.45%
Medium Trucks:	69.4%	10.0%	20.6%	11.28%
Heavy Trucks:	69.0%	7.6%	23.4%	7.27%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.38	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	77.72	-6.21	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-8.12	2.47	-1.20	*-5.21*	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	68.9	65.8	64.4	71.7	71.9
Medium Trucks:	72.8	71.4	69.0	67.4	74.5	74.8
Heavy Trucks:	76.1	74.7	71.2	71.3	78.2	78.5
Vehicle Noise:	78.5	77.1	74.0	73.3	80.4	80.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	415	893	1,925	4,146
CNEL:	431	929	2,003	4,314

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Euclid Av.
Road Segment: n/o SR-60 EB Ramps
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,359 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,978 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	79.55%
Medium Trucks:	69.4%	10.0%	20.6%	11.76%
Heavy Trucks:	69.0%	7.6%	23.4%	8.69%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.91	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-6.40	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-7.71	2.47	-1.20	*-5.21*	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	70.3	67.3	65.9	73.1	73.4
Medium Trucks:	74.3	72.9	70.6	68.9	76.1	76.4
Heavy Trucks:	77.8	76.4	72.8	72.9	79.9	80.1
Vehicle Noise:	80.1	78.7	75.6	75.0	82.0	82.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	531	1,144	2,464	5,310
CNEL:	552	1,190	2,564	5,524

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Euclid Av.
Road Segment: n/o Walnut Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,961 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,026 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	79.66%
Medium Trucks:	69.4%	10.0%	20.6%	11.70%
Heavy Trucks:	69.0%	7.6%	23.4%	8.63%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.98	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-6.35	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-7.67	2.47	-1.20	*-5.21*	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	70.4	67.4	65.9	73.2	73.5
Medium Trucks:	74.4	73.0	70.6	69.0	76.1	76.4
Heavy Trucks:	77.9	76.4	72.9	73.0	80.0	80.2
Vehicle Noise:	80.1	78.7	75.6	75.0	82.1	82.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	535	1,152	2,483	5,349
CNEL:	557	1,199	2,583	5,565

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Euclid Av.
Road Segment: n/o Riverside Dr.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,820	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,855	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	79.65%
Medium Trucks:	69.4%	10.0%	20.6%	11.67%
Heavy Trucks:	69.0%	7.6%	23.4%	8.68%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.73	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-6.61	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-7.90	2.47	-1.20	*-5.21*	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	70.2	67.1	65.7	73.0	73.3
Medium Trucks:	74.1	72.7	70.3	68.7	75.8	76.2
Heavy Trucks:	77.6	76.2	72.7	72.8	79.7	80.0
Vehicle Noise:	79.9	78.5	75.4	74.8	81.8	82.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	516	1,111	2,393	5,155
CNEL:	536	1,156	2,490	5,364

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Euclid Av.
Road Segment: n/o Chino Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,424	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,584	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	79.75%
Medium Trucks:	69.4%	10.0%	20.6%	11.54%
Heavy Trucks:	69.0%	7.6%	23.4%	8.71%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.30	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-7.09	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.31	2.47	-1.20	*-5.21*	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	69.7	66.7	65.3	72.5	72.8
Medium Trucks:	73.6	72.2	69.9	68.2	75.4	75.7
Heavy Trucks:	77.2	75.8	72.2	72.3	79.3	79.5
Vehicle Noise:	79.5	78.1	74.9	74.3	81.4	81.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	482	1,039	2,239	4,823
CNEL:	502	1,081	2,329	5,018

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Euclid Av.
Road Segment: n/o Schaefer Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,903	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,782	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	79.95%
Medium Trucks:	69.4%	10.0%	20.6%	11.47%
Heavy Trucks:	69.0%	7.6%	23.4%	8.58%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.63	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-6.80	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.06	2.47	-1.20	*-5.21*	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	70.1	67.0	65.6	72.9	73.2
Medium Trucks:	73.9	72.5	70.1	68.5	75.7	76.0
Heavy Trucks:	77.5	76.0	72.5	72.6	79.6	79.8
Vehicle Noise:	79.7	78.3	75.2	74.6	81.7	81.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	503	1,084	2,335	5,030
CNEL:	523	1,127	2,429	5,233

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Euclid Av.
Road Segment: n/o Edison Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,917	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,942	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	80.11%
Medium Trucks:	69.4%	10.0%	20.6%	11.41%
Heavy Trucks:	69.0%	7.6%	23.4%	8.48%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.89	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-6.58	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-7.87	2.47	-1.20	*-5.21*	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	70.3	67.3	65.8	73.1	73.4
Medium Trucks:	74.1	72.8	70.4	68.7	75.9	76.2
Heavy Trucks:	77.7	76.2	72.7	72.8	79.8	80.0
Vehicle Noise:	79.9	78.5	75.4	74.8	81.9	82.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	519	1,119	2,410	5,192
CNEL:	540	1,164	2,507	5,402

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Euclid Av.
Road Segment: n/o Eucalyptus Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,671 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,604 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	79.11%
Medium Trucks:	69.4%	10.0%	20.6%	11.93%
Heavy Trucks:	69.0%	7.6%	23.4%	8.96%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.30	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-6.91	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.16	2.47	-1.20	*-5.21*	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	69.7	66.7	65.3	72.5	72.8
Medium Trucks:	73.8	72.4	70.0	68.4	75.5	75.9
Heavy Trucks:	77.4	75.9	72.4	72.5	79.5	79.7
Vehicle Noise:	79.6	78.2	75.1	74.5	81.5	81.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	493	1,062	2,287	4,927
CNEL:	513	1,104	2,379	5,126

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Euclid Av.
Road Segment: n/o Merrill Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,977 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,628 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	78.76%
Medium Trucks:	69.4%	10.0%	20.6%	12.15%
Heavy Trucks:	69.0%	7.6%	23.4%	9.09%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.45	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-7.67	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-8.93	2.47	-1.20	*-5.21*	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:	73.5	72.2	69.2	67.7	75.0	75.3
Medium Trucks:	76.0	74.6	72.2	70.6	77.7	78.1
Heavy Trucks:	78.7	77.3	73.8	73.9	80.8	81.1
Vehicle Noise:	81.4	80.0	76.9	76.2	83.3	83.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	644	1,388	2,990	6,441
CNEL:	671	1,445	3,112	6,706

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Euclid Av.
Road Segment: n/o Kimball Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,744 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,849 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.53%
Medium Trucks:	69.4%	10.0%	20.6%	11.37%
Heavy Trucks:	69.0%	7.6%	23.4%	8.10%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.90	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-7.60	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.08	2.47	-1.20	*-5.21*	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:	73.9	72.7	69.6	68.2	75.4	75.7
Medium Trucks:	76.1	74.7	72.3	70.6	77.8	78.1
Heavy Trucks:	78.6	77.2	73.6	73.7	80.7	80.9
Vehicle Noise:	81.4	80.0	76.9	76.2	83.3	83.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	644	1,388	2,991	6,445
CNEL:	671	1,446	3,115	6,711

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Euclid Av.
Road Segment: n/o Bickmore Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,643 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,884 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	79.97%
Medium Trucks:	69.4%	10.0%	20.6%	11.47%
Heavy Trucks:	69.0%	7.6%	23.4%	8.56%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.93	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-9.36	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.63	2.47	-1.20	*-5.21*	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	70.8	67.8	66.4	73.6	73.9
Medium Trucks:	74.3	72.9	70.5	68.9	76.0	76.4
Heavy Trucks:	77.0	75.6	72.1	72.2	79.1	79.4
Vehicle Noise:	79.7	78.3	75.2	74.6	81.6	81.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	500	1,077	2,320	4,998
CNEL:	520	1,121	2,415	5,204

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Euclid Av.
Road Segment: n/o Pine Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,098 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,841 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	79.94%
Medium Trucks:	69.4%	10.0%	20.6%	11.47%
Heavy Trucks:	69.0%	7.6%	23.4%	8.59%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-1.03	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-9.46	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.72	2.47	-1.20	*-5.21*	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:	72.0	70.7	67.7	66.2	73.5	73.8
Medium Trucks:	74.2	72.8	70.4	68.8	75.9	76.3
Heavy Trucks:	76.9	75.5	72.0	72.1	79.0	79.3
Vehicle Noise:	79.6	78.2	75.1	74.5	81.5	81.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	493	1,062	2,287	4,928
CNEL:	513	1,105	2,381	5,130

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Euclid Av.
Road Segment: s/o Pine Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,553 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,232 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	80.55%
Medium Trucks:	69.4%	10.0%	20.6%	11.41%
Heavy Trucks:	69.0%	7.6%	23.4%	8.04%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	1.45	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-7.04	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-8.56	2.47	-1.20	*-5.21*	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:	74.4	73.2	70.2	68.7	76.0	76.3
Medium Trucks:	76.6	75.2	72.9	71.2	78.4	78.7
Heavy Trucks:	79.1	77.7	74.1	74.2	81.2	81.4
Vehicle Noise:	81.9	80.5	77.5	76.7	83.8	84.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	699	1,507	3,247	6,995
CNEL:	728	1,569	3,381	7,284

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Grove Av.
Road Segment: n/o SR-60
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,923 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,783 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.63%
Medium Trucks:	69.4%	10.0%	20.6%	11.17%
Heavy Trucks:	69.0%	7.6%	23.4%	7.20%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.73	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-6.91	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.82	0.61	-1.20	*-5.34*	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:	69.6	68.3	65.3	63.8	71.1	71.4
Medium Trucks:	72.0	70.6	68.2	66.5	73.7	74.0
Heavy Trucks:	74.8	73.4	69.9	70.0	76.9	77.2
Vehicle Noise:	77.4	76.0	72.9	72.3	79.3	79.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	251	542	1,167	2,514
CNEL:	262	564	1,215	2,617

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Grove Av.
Road Segment: n/o SR-60 EB Ramps
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,285 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,334 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.99%
Medium Trucks:	69.4%	10.0%	20.6%	10.95%
Heavy Trucks:	69.0%	7.6%	23.4%	7.06%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.98	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.76	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.67	0.61	-1.20	*-5.34*	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	67.6	64.6	63.1	70.4	70.7
Medium Trucks:	71.1	69.7	67.3	65.7	72.8	73.2
Heavy Trucks:	74.0	72.6	69.0	69.1	76.1	76.3
Vehicle Noise:	76.6	75.2	72.1	71.4	78.5	78.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	221	477	1,027	2,212
CNEL:	230	496	1,069	2,303

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Grove Av.
Road Segment: n/o Walnut Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,050 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,917 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	82.38%
Medium Trucks:	69.4%	10.0%	20.6%	10.72%
Heavy Trucks:	69.0%	7.6%	23.4%	6.91%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.15	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-8.71	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.62	0.61	-1.20	*-5.34*	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:	68.0	66.7	63.7	62.3	69.5	69.8
Medium Trucks:	70.1	68.8	66.4	64.7	71.9	72.2
Heavy Trucks:	73.0	71.6	68.1	68.2	75.1	75.4
Vehicle Noise:	75.7	74.3	71.2	70.5	77.6	77.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	192	413	890	1,917
CNEL:	200	430	926	1,996

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Grove Av.
Road Segment: n/o Riverside Dr.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,252 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,375 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	82.77%
Medium Trucks:	69.4%	10.0%	20.6%	10.48%
Heavy Trucks:	69.0%	7.6%	23.4%	6.75%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.28	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-10.25	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-12.16	0.61	-1.20	*-5.34*	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:	66.6	65.3	62.3	60.8	68.1	68.4
Medium Trucks:	68.6	67.2	64.8	63.2	70.3	70.7
Heavy Trucks:	71.5	70.1	66.5	66.6	73.6	73.8
Vehicle Noise:	74.1	72.8	69.7	69.0	76.0	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	152	327	704	1,518
CNEL:	158	340	733	1,580

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Grove Av.
Road Segment: n/o Chino Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,362 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	985 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	83.82%
Medium Trucks:	69.4%	10.0%	20.6%	9.84%
Heavy Trucks:	69.0%	7.6%	23.4%	6.34%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.13	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-12.43	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-14.34	1.46	-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:	67.3	66.1	63.0	61.6	68.8	69.1
Medium Trucks:	68.8	67.4	65.1	63.4	70.6	70.9
Heavy Trucks:	71.3	69.9	66.3	66.4	73.4	73.6
Vehicle Noise:	74.2	72.9	69.8	69.0	76.1	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	128	276	594	1,280
CNEL:	133	287	619	1,333

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Grove Av.
Road Segment: n/o Schaefer Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,370 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	906 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	84.04%
Medium Trucks:	69.4%	10.0%	20.6%	9.71%
Heavy Trucks:	69.0%	7.6%	23.4%	6.26%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.48	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-12.85	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-14.76	1.46	-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:	67.0	65.7	62.7	61.2	68.5	68.8
Medium Trucks:	68.4	67.0	64.6	63.0	70.1	70.5
Heavy Trucks:	70.9	69.5	65.9	66.0	73.0	73.2
Vehicle Noise:	73.8	72.5	69.4	68.6	75.7	76.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	120	259	558	1,202
CNEL:	125	270	581	1,252

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Grove Av.
Road Segment: n/o Edison Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,247 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	817 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	84.33%
Medium Trucks:	69.4%	10.0%	20.6%	9.53%
Heavy Trucks:	69.0%	7.6%	23.4%	6.14%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.91	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-13.38	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-15.29	1.46	-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:	66.5	65.3	62.2	60.8	68.1	68.4
Medium Trucks:	67.9	66.5	64.1	62.5	69.6	69.9
Heavy Trucks:	70.3	68.9	65.4	65.5	72.4	72.7
Vehicle Noise:	73.3	71.9	68.9	68.1	75.2	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	111	239	516	1,111
CNEL:	116	249	537	1,157

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Grove Av.
Road Segment: n/o Eucalyptus Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,560 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,081 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	88.30%
Medium Trucks:	69.4%	10.0%	20.6%	7.11%
Heavy Trucks:	69.0%	7.6%	23.4%	4.58%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.50	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-13.44	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-15.35	1.46	-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	66.7	63.7	62.2	69.5	69.8
Medium Trucks:	67.8	66.4	64.0	62.4	69.6	69.9
Heavy Trucks:	70.3	68.9	65.3	65.4	72.4	72.6
Vehicle Noise:	73.6	72.2	69.2	68.4	75.5	75.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	249	537	1,158
CNEL:	121	260	560	1,206

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Grove Av.
Road Segment: n/o Street A
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,141 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	569 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	84.34%
Medium Trucks:	69.4%	10.0%	20.6%	9.52%
Heavy Trucks:	69.0%	7.6%	23.4%	6.14%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.48	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-14.96	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-16.86	1.46	-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:	64.9	63.7	60.7	59.2	66.5	66.8
Medium Trucks:	66.3	64.9	62.5	60.9	68.0	68.4
Heavy Trucks:	68.8	67.4	63.8	63.9	70.9	71.1
Vehicle Noise:	71.7	70.4	67.3	66.6	73.6	73.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	188	405	873
CNEL:	91	196	422	909

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Grove Av.
Road Segment: n/o Merrill Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,978 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	556 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	83.98%
Medium Trucks:	69.4%	10.0%	20.6%	9.74%
Heavy Trucks:	69.0%	7.6%	23.4%	6.28%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.60	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-14.96	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-16.86	1.46	-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:	64.8	63.6	60.6	59.1	66.4	66.7
Medium Trucks:	66.3	64.9	62.5	60.9	68.0	68.4
Heavy Trucks:	68.8	67.4	63.8	63.9	70.9	71.1
Vehicle Noise:	71.7	70.3	67.3	66.5	73.6	73.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	404	870
CNEL:	91	195	420	906

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Archibald Av.
Road Segment: n/o SR-60
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,800	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,216	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.48%
Medium Trucks:	69.4%	10.0%	20.6%	11.26%
Heavy Trucks:	69.0%	7.6%	23.4%	7.26%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	0.27	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-8.32	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.23	0.61	-1.20	*-5.34*	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	68.6	65.6	64.1	71.4	71.7
Medium Trucks:	72.1	70.7	68.3	66.7	73.8	74.1
Heavy Trucks:	74.6	73.1	69.6	69.7	76.7	76.9
Vehicle Noise:	77.4	76.0	72.9	72.2	79.3	79.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	248	535	1,153	2,485
CNEL:	259	557	1,201	2,587

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Archibald Av.
Road Segment: n/o SR-60 EB Ramps
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,653	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,284	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.47%
Medium Trucks:	69.4%	10.0%	20.6%	11.27%
Heavy Trucks:	69.0%	7.6%	23.4%	7.26%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	0.40	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-8.19	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.10	0.61	-1.20	*-5.34*	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:	70.0	68.7	65.7	64.3	71.5	71.8
Medium Trucks:	72.2	70.8	68.4	66.8	74.0	74.3
Heavy Trucks:	74.7	73.3	69.7	69.8	76.8	77.0
Vehicle Noise:	77.5	76.1	73.0	72.3	79.4	79.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	254	546	1,177	2,535
CNEL:	264	569	1,225	2,640

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Archibald Av.
Road Segment: n/o Riverside Dr.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,208	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,408	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	80.27%
Medium Trucks:	69.4%	10.0%	20.6%	11.44%
Heavy Trucks:	69.0%	7.6%	23.4%	8.29%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	0.57	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-7.90	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.30	0.61	-1.20	*-5.34*	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:	70.2	68.9	65.9	64.4	71.7	72.0
Medium Trucks:	72.5	71.1	68.7	67.1	74.3	74.6
Heavy Trucks:	75.5	74.1	70.5	70.6	77.6	77.8
Vehicle Noise:	78.0	76.7	73.6	72.9	80.0	80.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	276	595	1,283	2,764
CNEL:	288	620	1,335	2,877

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Archibald Av.
Road Segment: n/o Chino Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,929	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,226	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	80.51%
Medium Trucks:	69.4%	10.0%	20.6%	11.25%
Heavy Trucks:	69.0%	7.6%	23.4%	8.24%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	0.24	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-8.31	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.66	0.61	-1.20	*-5.34*	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	68.6	65.6	64.1	71.4	71.7
Medium Trucks:	72.1	70.7	68.3	66.7	73.8	74.2
Heavy Trucks:	75.1	73.7	70.2	70.3	77.2	77.5
Vehicle Noise:	77.7	76.3	73.2	72.5	79.6	79.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	261	562	1,212	2,610
CNEL:	272	585	1,261	2,717

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Archibald Av.
Road Segment: n/o Schaefer Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,353	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,861	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	80.47%
Medium Trucks:	69.4%	10.0%	20.6%	11.15%
Heavy Trucks:	69.0%	7.6%	23.4%	8.37%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-0.95	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-9.54	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.78	0.61	-1.20	*-5.34*	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:	70.2	69.0	65.9	64.5	71.8	72.1
Medium Trucks:	72.3	70.9	68.5	66.9	74.0	74.3
Heavy Trucks:	75.0	73.6	70.1	70.2	77.1	77.4
Vehicle Noise:	77.7	76.3	73.3	72.6	79.6	79.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	263	567	1,221	2,630
CNEL:	274	590	1,271	2,738

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Archibald Av.
Road Segment: n/o Edison Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,353	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,861	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	80.47%
Medium Trucks:	69.4%	10.0%	20.6%	11.15%
Heavy Trucks:	69.0%	7.6%	23.4%	8.37%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-0.95	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-9.54	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.78	0.61	-1.20	*-5.34*	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:	70.2	69.0	65.9	64.5	71.8	72.1
Medium Trucks:	72.3	70.9	68.5	66.9	74.0	74.3
Heavy Trucks:	75.0	73.6	70.1	70.2	77.1	77.4
Vehicle Noise:	77.7	76.3	73.3	72.6	79.6	79.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	263	567	1,221	2,630
CNEL:	274	590	1,271	2,738

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Archibald Av.
Road Segment: n/o Eucalyptus Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,337	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,179	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	77.40%
Medium Trucks:	69.4%	10.0%	20.6%	12.51%
Heavy Trucks:	69.0%	7.6%	23.4%	10.09%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-0.44	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-8.35	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.29	0.61	-1.20	*-5.34*	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	69.5	66.5	65.0	72.3	72.6
Medium Trucks:	73.5	72.1	69.7	68.0	75.2	75.5
Heavy Trucks:	76.5	75.1	71.6	71.6	78.6	78.8
Vehicle Noise:	79.0	77.6	74.5	73.8	80.9	81.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	319	688	1,482	3,192
CNEL:	332	716	1,542	3,322

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Archibald Av.
Road Segment: n/o Merrill Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,136	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,163	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	77.37%
Medium Trucks:	69.4%	10.0%	20.6%	12.52%
Heavy Trucks:	69.0%	7.6%	23.4%	10.11%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-0.47	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-8.38	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.31	0.61	-1.20	*-5.34*	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	69.4	66.4	65.0	72.2	72.5
Medium Trucks:	73.4	72.0	69.7	68.0	75.2	75.5
Heavy Trucks:	76.5	75.1	71.5	71.6	78.6	78.8
Vehicle Noise:	78.9	77.6	74.4	73.8	80.9	81.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	318	685	1,476	3,179
CNEL:	331	713	1,536	3,309

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Archibald Av.
Road Segment: n/o Limonite Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,339	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,338	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	82.05%
Medium Trucks:	69.4%	10.0%	20.6%	10.63%
Heavy Trucks:	69.0%	7.6%	23.4%	7.32%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	0.12	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-8.75	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.37	0.61	-1.20	*-5.34*	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	70.0	67.0	65.6	72.8	73.1
Medium Trucks:	73.1	71.7	69.3	67.6	74.8	75.1
Heavy Trucks:	75.4	74.0	70.5	70.6	77.5	77.8
Vehicle Noise:	78.4	77.0	73.9	73.2	80.3	80.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	290	624	1,344	2,896
CNEL:	302	650	1,400	3,016

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Archibald Av.
Road Segment: n/o Schleisman Rd.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,532	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,115	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	120	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	110.0	feet
Centerline Dist. to Observer:	110.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.82%
Medium Trucks:	69.4%	10.0%	20.6%	11.05%
Heavy Trucks:	69.0%	7.6%	23.4%	7.12%

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:	92.331
Medium Trucks:	92.235
Heavy Trucks:	92.244

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	0.09	-4.10	-1.20	*-4.78*	0.000	0.000
Medium Trucks:	81.00	-8.61	-4.09	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.52	-4.09	-1.20	*-5.14*	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:	65.0	63.7	60.7	59.3	66.5	66.8
Medium Trucks:	67.1	65.7	63.3	61.7	68.8	69.2
Heavy Trucks:	69.6	68.2	64.6	64.7	71.7	71.9
Vehicle Noise:	72.4	71.0	67.9	67.2	74.3	74.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	212	458	986	2,125
CNEL:	221	477	1,027	2,213

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Archibald Av.
Road Segment: s/o Schleisman Rd.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,235	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,852	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	120	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	110.0	feet
Centerline Dist. to Observer:	110.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.89%
Medium Trucks:	69.4%	10.0%	20.6%	11.01%
Heavy Trucks:	69.0%	7.6%	23.4%	7.10%

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:	92.331
Medium Trucks:	92.235
Heavy Trucks:	92.244

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-0.49	-4.10	-1.20	*-4.78*	0.000	0.000
Medium Trucks:	81.00	-9.20	-4.09	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-11.11	-4.09	-1.20	*-5.14*	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:	64.4	63.2	60.1	58.7	66.0	66.3
Medium Trucks:	66.5	65.1	62.7	61.1	68.2	68.6
Heavy Trucks:	69.0	67.6	64.0	64.1	71.1	71.3
Vehicle Noise:	71.8	70.4	67.3	66.6	73.7	74.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	194	418	901	1,941
CNEL:	202	436	938	2,021

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Edison Av.
Road Segment: w/o Pipeline Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,398	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,821	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	82.22%
Medium Trucks:	69.4%	10.0%	20.6%	10.81%
Heavy Trucks:	69.0%	7.6%	23.4%	6.97%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.82	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.00	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.90	0.37	-1.20	*-5.34*	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	68.2	65.1	63.7	71.0	71.3
Medium Trucks:	71.6	70.2	67.8	66.2	73.4	73.7
Heavy Trucks:	74.5	73.1	69.6	69.6	76.6	76.8
Vehicle Noise:	77.1	75.7	72.6	72.0	79.0	79.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	240	517	1,114	2,401
CNEL:	250	538	1,160	2,499

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Edison Av.
Road Segment: w/o Ramona Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,389	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,422	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	82.37%
Medium Trucks:	69.4%	10.0%	20.6%	10.72%
Heavy Trucks:	69.0%	7.6%	23.4%	6.91%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.16	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.69	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.60	0.37	-1.20	*-5.34*	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	67.5	64.5	63.0	70.3	70.6
Medium Trucks:	70.9	69.5	67.2	65.5	72.7	73.0
Heavy Trucks:	73.8	72.4	68.9	68.9	75.9	76.1
Vehicle Noise:	76.4	75.1	72.0	71.3	78.3	78.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	216	465	1,002	2,159
CNEL:	225	484	1,043	2,248

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Edison Av.
Road Segment: w/o Central Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,054	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,997	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	82.58%
Medium Trucks:	69.4%	10.0%	20.6%	10.59%
Heavy Trucks:	69.0%	7.6%	23.4%	6.83%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.33	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-8.58	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.49	0.37	-1.20	*-5.34*	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	66.7	63.7	62.2	69.5	69.8
Medium Trucks:	70.0	68.6	66.3	64.6	71.8	72.1
Heavy Trucks:	72.9	71.5	68.0	68.1	75.0	75.3
Vehicle Noise:	75.6	74.2	71.1	70.4	77.5	77.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	189	406	875	1,886
CNEL:	196	423	911	1,963

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Edison Av.
Road Segment: w/o Mountain Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,989	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,310	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	82.52%
Medium Trucks:	69.4%	10.0%	20.6%	10.63%
Heavy Trucks:	69.0%	7.6%	23.4%	6.85%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.96	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.93	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.84	0.37	-1.20	*-5.34*	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:	68.6	67.3	64.3	62.8	70.1	70.4
Medium Trucks:	70.7	69.3	66.9	65.3	72.4	72.7
Heavy Trucks:	73.6	72.2	68.6	68.7	75.7	75.9
Vehicle Noise:	76.2	74.8	71.7	71.0	78.1	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	208	449	967	2,083
CNEL:	217	467	1,006	2,168

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Edison Av.
Road Segment: w/o San Antonio Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,921	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,986	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	82.83%
Medium Trucks:	69.4%	10.0%	20.6%	10.44%
Heavy Trucks:	69.0%	7.6%	23.4%	6.73%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.32	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-8.67	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.58	0.37	-1.20	*-5.34*	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	66.7	63.7	62.2	69.5	69.8
Medium Trucks:	69.9	68.6	66.2	64.5	71.7	72.0
Heavy Trucks:	72.8	71.4	67.9	68.0	74.9	75.2
Vehicle Noise:	75.5	74.1	71.0	70.3	77.4	77.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	186	402	866	1,865
CNEL:	194	418	901	1,941

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Edison Av.
Road Segment: w/o Euclid Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,451	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,630	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	83.15%
Medium Trucks:	69.4%	10.0%	20.6%	10.25%
Heavy Trucks:	69.0%	7.6%	23.4%	6.60%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.52	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-9.61	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-11.52	0.37	-1.20	*-5.34*	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:	67.1	65.8	62.8	61.4	68.6	68.9
Medium Trucks:	69.0	67.6	65.2	63.6	70.7	71.1
Heavy Trucks:	71.9	70.5	66.9	67.0	74.0	74.2
Vehicle Noise:	74.6	73.2	70.1	69.4	76.5	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	162	349	751	1,618
CNEL:	168	363	782	1,685

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Edison Av.
Road Segment: e/o Euclid Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,170	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,209	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	85.57%
Medium Trucks:	69.4%	10.0%	20.6%	8.78%
Heavy Trucks:	69.0%	7.6%	23.4%	5.66%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-2.15	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-12.04	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-13.95	2.47	-1.20	*-5.21*	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	68.0	65.0	63.6	70.8	71.1
Medium Trucks:	70.2	68.8	66.5	64.8	72.0	72.3
Heavy Trucks:	72.7	71.3	67.7	67.8	74.8	75.0
Vehicle Noise:	75.8	74.4	71.3	70.6	77.6	77.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	271	584	1,259	2,712
CNEL:	283	609	1,311	2,825

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Edison Av.
Road Segment: w/o Grove Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,206	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,052	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	86.19%
Medium Trucks:	69.4%	10.0%	20.6%	8.40%
Heavy Trucks:	69.0%	7.6%	23.4%	5.41%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-2.72	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-12.83	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-14.74	2.47	-1.20	*-5.21*	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	67.5	64.4	63.0	70.2	70.5
Medium Trucks:	69.4	68.0	65.7	64.0	71.2	71.5
Heavy Trucks:	71.9	70.5	66.9	67.0	74.0	74.2
Vehicle Noise:	75.0	73.6	70.6	69.8	76.9	77.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	242	521	1,123	2,419
CNEL:	252	543	1,169	2,519

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Edison Av.
Road Segment: w/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,043	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,040	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-3.02	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-11.58	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-13.49	2.47	-1.20	*-5.21*	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	67.2	64.1	62.7	69.9	70.2
Medium Trucks:	70.7	69.3	66.9	65.3	72.4	72.7
Heavy Trucks:	73.2	71.7	68.2	68.3	75.3	75.5
Vehicle Noise:	75.9	74.6	71.5	70.8	77.8	78.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	280	603	1,300	2,801
CNEL:	292	628	1,354	2,916

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Edison Av.
Road Segment: w/o Archibald Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,500	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,474	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	86.45%
Medium Trucks:	69.4%	10.0%	20.6%	8.24%
Heavy Trucks:	69.0%	7.6%	23.4%	5.31%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-1.24	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-11.45	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-13.36	2.47	-1.20	*-5.21*	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:	70.2	68.9	65.9	64.5	71.7	72.0
Medium Trucks:	70.8	69.4	67.0	65.4	72.6	72.9
Heavy Trucks:	73.3	71.9	68.3	68.4	75.4	75.6
Vehicle Noise:	76.4	75.0	72.0	71.2	78.3	78.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	300	646	1,392	3,000
CNEL:	312	673	1,450	3,125

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Edison Av.
Road Segment: w/o Haven Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,317	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,938	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.51%
Medium Trucks:	69.4%	10.0%	20.6%	10.55%
Heavy Trucks:	69.0%	7.6%	23.4%	7.94%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-0.31	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-9.19	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.42	2.47	-1.20	*-5.21*	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:	71.1	69.9	66.8	65.4	72.7	73.0
Medium Trucks:	73.1	71.7	69.3	67.7	74.8	75.1
Heavy Trucks:	76.2	74.8	71.3	71.4	78.3	78.5
Vehicle Noise:	78.8	77.4	74.3	73.6	80.7	80.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	432	931	2,007	4,323
CNEL:	450	969	2,088	4,499

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Edison Av.
Road Segment: e/o Haven Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,876	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,983	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.38%
Medium Trucks:	69.4%	10.0%	20.6%	10.65%
Heavy Trucks:	69.0%	7.6%	23.4%	7.97%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-0.22	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-9.05	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.31	2.47	-1.20	*-5.21*	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	70.0	66.9	65.5	72.8	73.0
Medium Trucks:	73.2	71.8	69.4	67.8	75.0	75.3
Heavy Trucks:	76.3	74.9	71.4	71.5	78.4	78.7
Vehicle Noise:	78.9	77.5	74.4	73.7	80.8	81.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	440	948	2,043	4,402
CNEL:	458	987	2,127	4,582

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Ontario Ranch Rd.
Road Segment: e/o Hamner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,527	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,832	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	78	feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.38%
Medium Trucks:	69.4%	10.0%	20.6%	10.85%
Heavy Trucks:	69.0%	7.6%	23.4%	7.77%

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	1.33	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	81.00	-7.42	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-8.87	-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:	68.5	67.2	64.2	62.8	70.0	70.3
Medium Trucks:	70.5	69.1	66.8	65.1	72.3	72.6
Heavy Trucks:	73.5	72.0	68.5	68.6	75.6	75.8
Vehicle Noise:	76.1	74.7	71.6	70.9	78.0	78.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	259	558	1,203	2,592
CNEL:	270	581	1,252	2,698

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Eucalyptus Av.
Road Segment: w/o Bon View Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,536	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	362	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	84.71%
Medium Trucks:	69.4%	10.0%	20.6%	9.30%
Heavy Trucks:	69.0%	7.6%	23.4%	5.99%

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:	66.51	-6.46	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-16.06	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-17.97	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:	60.1	58.9	55.9	54.4	61.7	62.0
Medium Trucks:	61.8	60.4	58.0	56.3	63.5	63.8
Heavy Trucks:	65.1	63.7	60.2	60.3	67.2	67.5
Vehicle Noise:	67.6	66.2	63.1	62.5	69.5	69.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	41	88	190	410
CNEL:	43	92	198	427

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Eucalyptus Av.
Road Segment: w/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,399	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	510	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	95.12%
Medium Trucks:	69.4%	10.0%	20.6%	2.97%
Heavy Trucks:	69.0%	7.6%	23.4%	1.91%

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:	66.51	-4.47	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-19.53	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-21.43	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:	62.1	60.9	57.8	56.4	63.7	64.0
Medium Trucks:	58.3	56.9	54.5	52.9	60.0	60.4
Heavy Trucks:	61.7	60.2	56.7	56.8	63.8	64.0
Vehicle Noise:	65.8	64.4	61.3	60.4	67.6	67.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	30	65	141	303
CNEL:	32	68	147	316

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Eucalyptus Av.
Road Segment: e/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,195	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	573	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	95.29%
Medium Trucks:	69.4%	10.0%	20.6%	2.87%
Heavy Trucks:	69.0%	7.6%	23.4%	1.85%

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:	66.51	-3.95	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-19.17	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-21.08	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:	62.6	61.4	58.4	56.9	64.2	64.5
Medium Trucks:	58.7	57.3	54.9	53.2	60.4	60.7
Heavy Trucks:	62.0	60.6	57.1	57.2	64.1	64.4
Vehicle Noise:	66.2	64.9	61.8	60.9	68.0	68.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	32	70	150	323
CNEL:	34	73	156	337

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Eucalyptus Av.
Road Segment: w/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,077	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	405	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	93.32%
Medium Trucks:	69.4%	10.0%	20.6%	4.06%
Heavy Trucks:	69.0%	7.6%	23.4%	2.62%

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:	66.51	-5.56	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-19.17	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-21.08	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:	61.0	59.8	56.8	55.3	62.6	62.9
Medium Trucks:	58.7	57.3	54.9	53.2	60.4	60.7
Heavy Trucks:	62.0	60.6	57.1	57.2	64.1	64.4
Vehicle Noise:	65.6	64.2	61.1	60.3	67.4	67.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	30	64	137	295
CNEL:	31	66	143	307

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Eucalyptus Av.
Road Segment: e/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,635 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	210 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	87.13%
Medium Trucks:	69.4%	10.0%	20.6%	7.83%
Heavy Trucks:	69.0%	7.6%	23.4%	5.05%

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:	66.51	-8.70	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-19.17	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-21.08	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:	57.9	56.6	53.6	52.2	59.4	59.7
Medium Trucks:	58.7	57.3	54.9	53.2	60.4	60.7
Heavy Trucks:	62.0	60.6	57.1	57.2	64.1	64.4
Vehicle Noise:	64.7	63.3	60.2	59.5	66.6	66.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	56	121	261
CNEL:	27	58	126	271

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Merrill Av.
Road Segment: e/o Euclid Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,576 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,082 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	72.83%
Medium Trucks:	69.4%	10.0%	20.6%	13.43%
Heavy Trucks:	69.0%	7.6%	23.4%	13.74%

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	-3.33	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.67	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-10.57	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:	67.0	65.7	62.7	61.2	68.5	68.8
Medium Trucks:	70.4	69.0	66.7	65.0	72.2	72.5
Heavy Trucks:	74.9	73.5	70.0	70.0	77.0	77.2
Vehicle Noise:	76.7	75.3	72.1	71.6	78.7	78.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	167	360	775	1,669
CNEL:	174	374	805	1,735

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Merrill Av.
Road Segment: w/o Grove Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,653 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,248 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	74.16%
Medium Trucks:	69.4%	10.0%	20.6%	13.03%
Heavy Trucks:	69.0%	7.6%	23.4%	12.81%

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	-2.63	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.18	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-10.26	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:	67.6	66.4	63.4	61.9	69.2	69.5
Medium Trucks:	70.9	69.5	67.2	65.5	72.7	73.0
Heavy Trucks:	75.2	73.8	70.3	70.4	77.3	77.6
Vehicle Noise:	77.1	75.7	72.6	72.0	79.1	79.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	177	382	823	1,772
CNEL:	184	397	855	1,843

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Merrill Av.
Road Segment: e/o Grove Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,311 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,220 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	76.26%
Medium Trucks:	69.4%	10.0%	20.6%	12.24%
Heavy Trucks:	69.0%	7.6%	23.4%	11.50%

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	-2.61	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.55	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-10.82	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:	67.7	66.4	63.4	62.0	69.2	69.5
Medium Trucks:	70.6	69.2	66.8	65.1	72.3	72.6
Heavy Trucks:	74.7	73.2	69.7	69.8	76.8	77.0
Vehicle Noise:	76.7	75.3	72.1	71.6	78.6	78.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	165	356	767	1,653
CNEL:	172	370	798	1,719

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Merrill Av.
Road Segment: e/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,600	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,323	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	36	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	76.66%
Medium Trucks:	69.4%	10.0%	20.6%	12.17%
Heavy Trucks:	69.0%	7.6%	23.4%	11.17%

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	-2.23	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-10.23	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-10.60	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:	68.0	66.8	63.8	62.3	69.6	69.9
Medium Trucks:	70.9	69.5	67.1	65.5	72.6	72.9
Heavy Trucks:	74.9	73.5	69.9	70.0	77.0	77.2
Vehicle Noise:	76.9	75.6	72.4	71.8	78.9	79.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	172	371	799	1,722
CNEL:	179	386	831	1,790

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Merrill Av.
Road Segment: w/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,901	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,347	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	36	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	76.92%
Medium Trucks:	69.4%	10.0%	20.6%	12.04%
Heavy Trucks:	69.0%	7.6%	23.4%	11.03%

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:	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	-2.14	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-10.19	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-10.57	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:	68.1	66.9	63.9	62.4	69.7	70.0
Medium Trucks:	70.9	69.5	67.1	65.5	72.7	73.0
Heavy Trucks:	74.9	73.5	69.9	70.0	77.0	77.2
Vehicle Noise:	77.0	75.6	72.4	71.9	78.9	79.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	173	373	803	1,731
CNEL:	180	388	835	1,800

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Merrill Av.
Road Segment: e/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,231	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,453	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	36	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	76.18%
Medium Trucks:	69.4%	10.0%	20.6%	12.18%
Heavy Trucks:	69.0%	7.6%	23.4%	11.64%

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	-1.85	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-9.81	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-10.01	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	67.2	64.2	62.7	70.0	70.3
Medium Trucks:	71.3	69.9	67.5	65.9	73.0	73.3
Heavy Trucks:	75.5	74.1	70.5	70.6	77.6	77.8
Vehicle Noise:	77.5	76.1	72.9	72.4	79.4	79.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	187	402	866	1,865
CNEL:	194	418	900	1,939

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Limonite
Road Segment: e/o Archibald Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,623	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,644	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	78	feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.74%
Medium Trucks:	69.4%	10.0%	20.6%	10.69%
Heavy Trucks:	69.0%	7.6%	23.4%	7.56%

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	-0.55	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-9.39	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.89	-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:	64.9	63.6	60.6	59.1	66.4	66.7
Medium Trucks:	67.0	65.6	63.2	61.6	68.8	69.1
Heavy Trucks:	70.3	68.9	65.4	65.4	72.4	72.6
Vehicle Noise:	72.8	71.4	68.3	67.6	74.7	74.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	156	335	723	1,557
CNEL:	162	349	752	1,620

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Limonite
Road Segment: w/o Sumner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,248	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,773	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	78	feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.72%
Medium Trucks:	69.4%	10.0%	20.6%	10.74%
Heavy Trucks:	69.0%	7.6%	23.4%	7.54%

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	-0.23	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-9.04	-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

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	65.2	63.9	60.9	59.5	66.7	67.0
Medium Trucks:	67.4	66.0	63.6	61.9	69.1	69.4
Heavy Trucks:	70.6	69.2	65.7	65.8	72.7	73.0
Vehicle Noise:	73.1	71.7	68.6	67.9	75.0	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	164	353	760	1,637
CNEL:	170	367	791	1,704

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Limonite
Road Segment: w/o Scholar Wy.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,683	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,728	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	78	feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.59%
Medium Trucks:	69.4%	10.0%	20.6%	10.81%
Heavy Trucks:	69.0%	7.6%	23.4%	7.60%

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	-0.35	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-9.12	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.65	-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:	65.1	63.8	60.8	59.3	66.6	66.9
Medium Trucks:	67.3	65.9	63.5	61.9	69.0	69.3
Heavy Trucks:	70.6	69.1	65.6	65.7	72.7	72.9
Vehicle Noise:	73.0	71.6	68.5	67.9	74.9	75.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	162	348	750	1,616
CNEL:	168	362	781	1,682

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Limonite
Road Segment: w/o Hamner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,261	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,774	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	78	feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.58%
Medium Trucks:	69.4%	10.0%	20.6%	10.82%
Heavy Trucks:	69.0%	7.6%	23.4%	7.60%

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	-0.23	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-9.00	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.54	-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:	65.2	63.9	60.9	59.5	66.7	67.0
Medium Trucks:	67.4	66.0	63.6	62.0	69.1	69.5
Heavy Trucks:	70.7	69.2	65.7	65.8	72.8	73.0
Vehicle Noise:	73.1	71.7	68.6	68.0	75.0	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	164	354	763	1,645
CNEL:	171	369	794	1,711

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: E+P Phase A + B + C
Road Name: Limonite
Road Segment: e/o Hamner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,592	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,880	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	78	feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.44%
Medium Trucks:	69.4%	10.0%	20.6%	10.93%
Heavy Trucks:	69.0%	7.6%	23.4%	7.63%

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	0.01	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-8.71	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.27	-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	64.2	61.1	59.7	67.0	67.3
Medium Trucks:	67.7	66.3	63.9	62.3	69.4	69.8
Heavy Trucks:	70.9	69.5	66.0	66.1	73.0	73.3
Vehicle Noise:	73.4	72.0	68.9	68.2	75.3	75.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	172	370	796	1,715
CNEL:	178	385	828	1,785

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o SR-60

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,322 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,054 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.63	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	77.72	-5.93	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-7.84	2.47	-1.20	-5.21	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	69.1	66.1	64.6	71.9	72.2
Medium Trucks:	73.1	71.7	69.3	67.6	74.8	75.1
Heavy Trucks:	76.4	75.0	71.5	71.6	78.5	78.7
Vehicle Noise:	78.7	77.4	74.2	73.6	80.7	80.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	432	931	2,006	4,323
CNEL:	450	969	2,088	4,498

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o SR-60 EB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,752 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,089 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.16	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-6.40	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.31	2.47	-1.20	-5.21	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	70.6	67.6	66.1	73.4	73.7
Medium Trucks:	74.3	72.9	70.5	68.9	76.1	76.4
Heavy Trucks:	77.2	75.8	72.2	72.3	79.3	79.5
Vehicle Noise:	79.8	78.4	75.3	74.6	81.7	82.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	505	1,089	2,346	5,054
CNEL:	526	1,133	2,442	5,261

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Walnut Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,334 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,215 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.34	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-6.22	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.13	2.47	-1.20	-5.21	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:	72.0	70.8	67.7	66.3	73.6	73.9
Medium Trucks:	74.5	73.1	70.7	69.1	76.2	76.5
Heavy Trucks:	77.4	76.0	72.4	72.5	79.5	79.7
Vehicle Noise:	80.0	78.6	75.5	74.8	81.9	82.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	519	1,118	2,409	5,191
CNEL:	540	1,164	2,508	5,403

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Riverside Dr.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,936 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,024 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.07	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-6.49	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.40	2.47	-1.20	-5.21	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	70.5	67.5	66.0	73.3	73.6
Medium Trucks:	74.2	72.8	70.5	68.8	76.0	76.3
Heavy Trucks:	77.1	75.7	72.2	72.3	79.2	79.4
Vehicle Noise:	79.7	78.3	75.2	74.5	81.6	81.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	498	1,074	2,313	4,983
CNEL:	519	1,118	2,408	5,187

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Chino Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,024 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,712 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.60	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-6.96	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.87	2.47	-1.20	-5.21	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	70.0	67.0	65.6	72.8	73.1
Medium Trucks:	73.8	72.4	70.0	68.3	75.5	75.8
Heavy Trucks:	76.6	75.2	71.7	71.8	78.8	79.0
Vehicle Noise:	79.2	77.8	74.7	74.1	81.1	81.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	463	998	2,151	4,634
CNEL:	482	1,039	2,239	4,824

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Schaefer Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,570 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,915 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.91	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-6.65	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.56	2.47	-1.20	-5.21	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	70.4	67.3	65.9	73.1	73.4
Medium Trucks:	74.1	72.7	70.3	68.6	75.8	76.1
Heavy Trucks:	77.0	75.5	72.0	72.1	79.1	79.3
Vehicle Noise:	79.5	78.1	75.0	74.4	81.4	81.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	486	1,048	2,257	4,863
CNEL:	506	1,091	2,349	5,062

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Edison Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,631 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,079 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.15	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-6.41	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.32	2.47	-1.20	-5.21	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	70.6	67.6	66.1	73.4	73.7
Medium Trucks:	74.3	72.9	70.5	68.9	76.0	76.4
Heavy Trucks:	77.2	75.8	72.2	72.3	79.3	79.5
Vehicle Noise:	79.8	78.4	75.3	74.6	81.7	81.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	504	1,087	2,341	5,044
CNEL:	525	1,131	2,437	5,250

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Eucalyptus Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,971 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,867 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.84	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-6.72	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.63	2.47	-1.20	-5.21	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	70.3	67.3	65.8	73.1	73.4
Medium Trucks:	74.0	72.6	70.2	68.6	75.7	76.1
Heavy Trucks:	76.9	75.5	71.9	72.0	79.0	79.2
Vehicle Noise:	79.5	78.1	75.0	74.3	81.4	81.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	481	1,036	2,232	4,810
CNEL:	501	1,079	2,324	5,006

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Merrill Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,446 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,905 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.03	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-7.54	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.44	2.47	-1.20	*-5.21*	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:	74.0	72.8	69.8	68.3	75.6	75.9
Medium Trucks:	76.1	74.7	72.4	70.7	77.9	78.2
Heavy Trucks:	78.2	76.8	73.3	73.4	80.3	80.5
Vehicle Noise:	81.2	79.9	76.8	76.0	83.1	83.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	629	1,356	2,921	6,293
CNEL:	656	1,412	3,043	6,555

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Kimball Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,998 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,028 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.21	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-7.35	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.26	2.47	-1.20	*-5.21*	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:	74.2	73.0	69.9	68.5	75.8	76.1
Medium Trucks:	76.3	74.9	72.5	70.9	78.1	78.4
Heavy Trucks:	78.4	77.0	73.4	73.5	80.5	80.7
Vehicle Noise:	81.4	80.0	77.0	76.2	83.3	83.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	647	1,394	3,003	6,471
CNEL:	674	1,452	3,128	6,740

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Bickmore Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,519 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,034 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.52	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-9.08	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.99	2.47	-1.20	*-5.21*	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:	72.5	71.2	68.2	66.8	74.0	74.3
Medium Trucks:	74.6	73.2	70.8	69.2	76.3	76.6
Heavy Trucks:	76.7	75.3	71.7	71.8	78.8	79.0
Vehicle Noise:	79.7	78.3	75.3	74.5	81.6	81.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	496	1,069	2,303	4,962
CNEL:	517	1,114	2,399	5,169

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Pine Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,689 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,968 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.66	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-9.23	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-11.13	2.47	-1.20	*-5.21*	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	71.1	68.1	66.6	73.9	74.2
Medium Trucks:	74.4	73.1	70.7	69.0	76.2	76.5
Heavy Trucks:	76.5	75.1	71.6	71.7	78.6	78.9
Vehicle Noise:	79.5	78.2	75.1	74.4	81.4	81.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	485	1,046	2,253	4,854
CNEL:	506	1,089	2,347	5,056

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: s/o Pine Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	43,097 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,435 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.75	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-6.81	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.72	2.47	-1.20	-5.21	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:	74.8	73.5	70.5	69.0	76.3	76.6
Medium Trucks:	76.9	75.5	73.1	71.4	78.6	78.9
Heavy Trucks:	78.9	77.5	74.0	74.1	81.1	81.3
Vehicle Noise:	82.0	80.6	77.5	76.8	83.8	84.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	704	1,516	3,266	7,037
CNEL:	733	1,579	3,402	7,330

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o SR-60

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,660 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,922 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.92	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-6.64	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.55	0.61	-1.20	-5.34	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	68.5	65.5	64.0	71.3	71.6
Medium Trucks:	72.2	70.8	68.4	66.8	74.0	74.3
Heavy Trucks:	75.1	73.7	70.2	70.2	77.2	77.4
Vehicle Noise:	77.7	76.3	73.2	72.5	79.6	79.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	262	564	1,215	2,617
CNEL:	272	587	1,264	2,724

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o SR-60 EB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,194 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,406 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.08	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-7.48	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.39	0.61	-1.20	-5.34	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:	68.9	67.7	64.7	63.2	70.5	70.8
Medium Trucks:	71.4	70.0	67.6	66.0	73.1	73.4
Heavy Trucks:	74.3	72.9	69.3	69.4	76.4	76.6
Vehicle Noise:	76.8	75.5	72.4	71.7	78.8	79.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	230	495	1,067	2,300
CNEL:	239	516	1,111	2,394

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o Walnut Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,327 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,939 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.14	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-8.42	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.33	0.61	-1.20	-5.34	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:	68.0	66.7	63.7	62.3	69.5	69.8
Medium Trucks:	70.4	69.0	66.7	65.0	72.2	72.5
Heavy Trucks:	73.3	71.9	68.4	68.5	75.4	75.7
Vehicle Noise:	75.9	74.5	71.4	70.8	77.8	78.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	199	429	924	1,991
CNEL:	207	447	962	2,073

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o Riverside Dr.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,156 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,367 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.37	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.94	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.84	0.61	-1.20	-5.34	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:	66.5	65.2	62.2	60.7	68.0	68.3
Medium Trucks:	68.9	67.5	65.2	63.5	70.7	71.0
Heavy Trucks:	71.8	70.4	66.9	66.9	73.9	74.1
Vehicle Noise:	74.4	73.0	69.9	69.2	76.3	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	158	340	732	1,578
CNEL:	164	354	762	1,642

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o Chino Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,694 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	932 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.50	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-12.06	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.97	1.46	-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:	66.9	65.7	62.7	61.2	68.5	68.8
Medium Trucks:	69.2	67.8	65.4	63.8	70.9	71.3
Heavy Trucks:	71.7	70.3	66.7	66.8	73.8	74.0
Vehicle Noise:	74.5	73.1	70.0	69.3	76.4	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	133	286	616	1,328
CNEL:	138	298	642	1,383

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o Schaefer Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,642 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	848 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.91	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-12.47	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.38	1.46	-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:	66.5	65.3	62.3	60.8	68.1	68.4
Medium Trucks:	68.8	67.4	65.0	63.4	70.5	70.8
Heavy Trucks:	71.3	69.8	66.3	66.4	73.4	73.6
Vehicle Noise:	74.1	72.7	69.6	68.9	76.0	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	125	269	579	1,247
CNEL:	130	280	603	1,299

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o Edison Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,450 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	753 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.42	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-12.98	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.89	1.46	-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:	66.0	64.8	61.7	60.3	67.6	67.8
Medium Trucks:	68.3	66.9	64.5	62.9	70.0	70.3
Heavy Trucks:	70.7	69.3	65.8	65.9	72.8	73.1
Vehicle Noise:	73.5	72.2	69.1	68.4	75.4	75.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	248	535	1,152
CNEL:	120	258	557	1,200

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o Eucalyptus Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,092	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	804	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	62	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.14	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-12.70	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-14.61	1.46	-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	65.0	62.0	60.6	67.8	68.1
Medium Trucks:	68.6	67.2	64.8	63.1	70.3	70.6
Heavy Trucks:	71.0	69.6	66.1	66.2	73.1	73.4
Vehicle Noise:	73.8	72.4	69.4	68.7	75.7	76.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	120	259	559	1,204
CNEL:	125	270	582	1,254

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o Street A

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,706	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	534	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	62	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.91	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-14.47	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-16.38	1.46	-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:	64.5	63.3	60.2	58.8	66.1	66.4
Medium Trucks:	66.8	65.4	63.0	61.4	68.5	68.8
Heavy Trucks:	69.3	67.8	64.3	64.4	71.4	71.6
Vehicle Noise:	72.0	70.7	67.6	66.9	73.9	74.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	426	917
CNEL:	95	206	443	955

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o Merrill Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,706	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	534	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	62	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.91	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-14.47	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-16.38	1.46	-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:	64.5	63.3	60.2	58.8	66.1	66.4
Medium Trucks:	66.8	65.4	63.0	61.4	68.5	68.8
Heavy Trucks:	69.3	67.8	64.3	64.4	71.4	71.6
Vehicle Noise:	72.0	70.7	67.6	66.9	73.9	74.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	426	917
CNEL:	95	206	443	955

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o SR-60

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,487	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,350	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.52	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-8.04	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.95	0.61	-1.20	*-5.34*	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	68.9	65.8	64.4	71.7	71.9
Medium Trucks:	72.4	71.0	68.6	66.9	74.1	74.4
Heavy Trucks:	74.8	73.4	69.9	70.0	76.9	77.2
Vehicle Noise:	77.6	76.3	73.2	72.5	79.5	79.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	259	558	1,203	2,592
CNEL:	270	582	1,253	2,699

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o SR-60 EB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,047 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,112 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.74	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-6.82	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-8.73	0.61	-1.20	-5.34	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	70.1	67.1	65.6	72.9	73.2
Medium Trucks:	73.6	72.2	69.8	68.2	75.3	75.6
Heavy Trucks:	76.1	74.6	71.1	71.2	78.2	78.4
Vehicle Noise:	78.9	77.5	74.4	73.7	80.8	81.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	313	673	1,451	3,126
CNEL:	325	701	1,511	3,255

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Riverside Dr.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,682 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,047 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.08	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-8.64	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-10.55	0.61	-1.20	-5.34	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:	69.5	68.3	65.2	63.8	71.1	71.3
Medium Trucks:	71.8	70.4	68.0	66.3	73.5	73.8
Heavy Trucks:	74.2	72.8	69.3	69.4	76.3	76.6
Vehicle Noise:	77.0	75.7	72.6	71.9	78.9	79.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	236	509	1,097	2,364
CNEL:	246	530	1,143	2,462

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Chino Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,266 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,253 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.34	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-8.23	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-10.13	0.61	-1.20	-5.34	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	68.7	65.7	64.2	71.5	71.8
Medium Trucks:	72.2	70.8	68.4	66.8	73.9	74.2
Heavy Trucks:	74.7	73.2	69.7	69.8	76.8	77.0
Vehicle Noise:	77.4	76.1	73.0	72.3	79.3	79.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	252	543	1,170	2,520
CNEL:	262	565	1,218	2,624

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Schaefer Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,276 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,855 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.92	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-9.48	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.39	0.61	-1.20	-5.34	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:	70.2	69.0	66.0	64.5	71.8	72.1
Medium Trucks:	72.3	70.9	68.6	66.9	74.1	74.4
Heavy Trucks:	74.4	73.0	69.5	69.5	76.5	76.7
Vehicle Noise:	77.4	76.1	73.0	72.2	79.3	79.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	251	540	1,164	2,508
CNEL:	261	563	1,213	2,612

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Edison Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,276 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,855 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.92	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-9.48	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-11.39	0.61	-1.20	*-5.34*	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:	70.2	69.0	66.0	64.5	71.8	72.1
Medium Trucks:	72.3	70.9	68.6	66.9	74.1	74.4
Heavy Trucks:	74.4	73.0	69.5	69.5	76.5	76.7
Vehicle Noise:	77.4	76.1	73.0	72.2	79.3	79.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	251	540	1,164	2,508
CNEL:	261	563	1,213	2,612

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Eucalyptus Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,291 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,334 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.08	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-8.48	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.39	0.61	-1.20	*-5.34*	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	70.0	67.0	65.5	72.8	73.1
Medium Trucks:	73.3	71.9	69.6	67.9	75.1	75.4
Heavy Trucks:	75.4	74.0	70.4	70.5	77.5	77.7
Vehicle Noise:	78.4	77.1	74.0	73.2	80.3	80.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	292	630	1,357	2,923
CNEL:	304	656	1,413	3,045

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Merrill Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,079 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,318 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.05	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-8.52	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.42	0.61	-1.20	*-5.34*	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	70.0	66.9	65.5	72.8	73.1
Medium Trucks:	73.3	71.9	69.5	67.9	75.0	75.4
Heavy Trucks:	75.4	74.0	70.4	70.5	77.5	77.7
Vehicle Noise:	78.4	77.0	74.0	73.2	80.3	80.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	291	627	1,350	2,909
CNEL:	303	653	1,406	3,030

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Limonite Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,578 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,357 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.12	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-8.44	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.35	0.61	-1.20	*-5.34*	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	70.0	67.0	65.6	72.8	73.1
Medium Trucks:	73.4	72.0	69.6	68.0	75.1	75.4
Heavy Trucks:	75.5	74.0	70.5	70.6	77.6	77.8
Vehicle Noise:	78.5	77.1	74.0	73.3	80.4	80.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	294	634	1,366	2,942
CNEL:	306	660	1,423	3,065

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Schleisman Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,811	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,296	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	120	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	110.0	feet
Centerline Dist. to Observer:	110.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	92.331
Medium Trucks:	92.235
Heavy Trucks:	92.244

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.42	-4.10	-1.20	*-4.78*	0.000	0.000
Medium Trucks:	81.00	-8.14	-4.09	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.05	-4.09	-1.20	*-5.14*	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	64.1	61.1	59.6	66.9	67.2
Medium Trucks:	67.6	66.2	63.8	62.1	69.3	69.6
Heavy Trucks:	70.0	68.6	65.1	65.2	72.1	72.4
Vehicle Noise:	72.8	71.5	68.4	67.7	74.7	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	227	490	1,056	2,275
CNEL:	237	510	1,099	2,369

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: s/o Schleisman Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,532	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,955	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	120	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	110.0	feet
Centerline Dist. to Observer:	110.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	92.331
Medium Trucks:	92.235
Heavy Trucks:	92.244

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.28	-4.10	-1.20	*-4.78*	0.000	0.000
Medium Trucks:	81.00	-8.84	-4.09	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.75	-4.09	-1.20	*-5.14*	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:	64.6	63.4	60.4	58.9	66.2	66.5
Medium Trucks:	66.9	65.5	63.1	61.4	68.6	68.9
Heavy Trucks:	69.3	67.9	64.4	64.5	71.4	71.7
Vehicle Noise:	72.1	70.8	67.7	67.0	74.0	74.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	204	440	948	2,043
CNEL:	213	458	988	2,128

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: w/o Pipeline Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,146	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,881	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.86	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-6.70	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.61	0.37	-1.20	*-5.34*	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:	69.5	68.2	65.2	63.7	71.0	71.3
Medium Trucks:	71.9	70.5	68.1	66.5	73.7	74.0
Heavy Trucks:	74.8	73.4	69.8	69.9	76.9	77.1
Vehicle Noise:	77.4	76.0	72.9	72.2	79.3	79.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	250	538	1,159	2,498
CNEL:	260	560	1,207	2,600

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: w/o Ramona Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,864	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,460	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.18	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.39	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.29	0.37	-1.20	*-5.34*	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	67.5	64.5	63.1	70.3	70.6
Medium Trucks:	71.2	69.8	67.5	65.8	73.0	73.3
Heavy Trucks:	74.1	72.7	69.2	69.3	76.2	76.5
Vehicle Noise:	76.7	75.3	72.2	71.5	78.6	78.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	225	484	1,043	2,248
CNEL:	234	504	1,086	2,340

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022
Road Name: Edison Av.
Road Segment: w/o Central Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,328 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,019 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.32	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-8.24	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.15	0.37	-1.20	-5.34	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	66.7	63.6	62.2	69.5	69.8
Medium Trucks:	70.4	69.0	66.6	64.9	72.1	72.4
Heavy Trucks:	73.3	71.8	68.3	68.4	75.4	75.6
Vehicle Noise:	75.8	74.4	71.4	70.7	77.7	78.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	197	424	915	1,970
CNEL:	205	442	952	2,051

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022
Road Name: Edison Av.
Road Segment: w/o Mountain Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,407 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,344 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.97	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-7.60	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.50	0.37	-1.20	-5.34	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:	68.6	67.3	64.3	62.8	70.1	70.4
Medium Trucks:	71.0	69.6	67.2	65.6	72.8	73.1
Heavy Trucks:	73.9	72.5	69.0	69.0	76.0	76.2
Vehicle Noise:	76.5	75.1	72.0	71.3	78.4	78.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	218	469	1,010	2,177
CNEL:	227	488	1,052	2,266

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022
Road Name: Edison Av.
Road Segment: w/o San Antonio Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,007 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,993 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.26	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-8.30	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.21	0.37	-1.20	-5.34	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	66.6	63.6	62.1	69.4	69.7
Medium Trucks:	70.3	68.9	66.5	64.9	72.1	72.4
Heavy Trucks:	73.2	71.8	68.2	68.3	75.3	75.5
Vehicle Noise:	75.8	74.4	71.3	70.6	77.7	78.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	195	421	907	1,954
CNEL:	203	438	944	2,034

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022
Road Name: Edison Av.
Road Segment: w/o Euclid Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,352 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,622 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.63	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.19	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.10	0.37	-1.20	-5.34	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:	67.0	65.7	62.7	61.2	68.5	68.8
Medium Trucks:	69.4	68.0	65.6	64.0	71.2	71.5
Heavy Trucks:	72.3	70.9	67.4	67.4	74.4	74.6
Vehicle Noise:	74.9	73.5	70.4	69.7	76.8	77.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	170	367	790	1,703
CNEL:	177	382	823	1,773

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: e/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,995 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,036 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.04	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-11.60	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-13.51	2.47	-1.20	-5.21	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	67.1	64.1	62.7	69.9	70.2
Medium Trucks:	70.7	69.3	66.9	65.2	72.4	72.7
Heavy Trucks:	73.1	71.7	68.2	68.3	75.2	75.5
Vehicle Noise:	75.9	74.5	71.5	70.8	77.8	78.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	279	602	1,297	2,794
CNEL:	291	627	1,350	2,909

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: w/o Grove Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,863 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	866 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.82	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-12.38	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-14.29	2.47	-1.20	-5.21	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:	67.6	66.4	63.3	61.9	69.2	69.4
Medium Trucks:	69.9	68.5	66.1	64.5	71.6	71.9
Heavy Trucks:	72.4	70.9	67.4	67.5	74.5	74.7
Vehicle Noise:	75.1	73.8	70.7	70.0	77.1	77.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	248	534	1,151	2,479
CNEL:	258	556	1,198	2,581

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: w/o Walker Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,118 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,125 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.68	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-11.24	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-13.15	2.47	-1.20	-5.21	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	67.5	64.5	63.0	70.3	70.6
Medium Trucks:	71.0	69.6	67.3	65.6	72.8	73.1
Heavy Trucks:	73.5	72.1	68.5	68.6	75.6	75.8
Vehicle Noise:	76.3	74.9	71.8	71.1	78.2	78.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	295	636	1,370	2,952
CNEL:	307	662	1,427	3,074

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: w/o Archibald Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,559 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,160 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.54	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-11.11	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-13.01	2.47	-1.20	-5.21	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:	68.9	67.6	64.6	63.2	70.4	70.7
Medium Trucks:	71.2	69.8	67.4	65.7	72.9	73.2
Heavy Trucks:	73.6	72.2	68.7	68.8	75.7	76.0
Vehicle Noise:	76.4	75.0	72.0	71.3	78.3	78.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	301	649	1,399	3,014
CNEL:	314	676	1,457	3,138

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: w/o Haven Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,662	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,806	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.62	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-9.18	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-11.09	2.47	-1.20	-5.21	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	69.6	66.5	65.1	72.3	72.6
Medium Trucks:	73.1	71.7	69.3	67.7	74.8	75.1
Heavy Trucks:	75.6	74.1	70.6	70.7	77.7	77.9
Vehicle Noise:	78.3	77.0	73.9	73.2	80.2	80.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	405	872	1,879	4,048
CNEL:	421	908	1,956	4,215

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: e/o Haven Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,381	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,863	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.49	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-9.05	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-10.96	2.47	-1.20	-5.21	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:	70.9	69.7	66.7	65.2	72.5	72.8
Medium Trucks:	73.2	71.8	69.4	67.8	75.0	75.3
Heavy Trucks:	75.7	74.3	70.7	70.8	77.8	78.0
Vehicle Noise:	78.5	77.1	74.0	73.3	80.4	80.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	413	890	1,918	4,133
CNEL:	430	927	1,997	4,303

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Ontario Ranch Rd. | Job Number: 12005
Road Segment: e/o Hamner Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,655	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,762	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	78	feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	1.22	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-7.34	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-9.25	-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:	68.4	67.1	64.1	62.7	69.9	70.2
Medium Trucks:	70.6	69.2	66.8	65.2	72.4	72.7
Heavy Trucks:	73.1	71.7	68.1	68.2	75.2	75.4
Vehicle Noise:	75.9	74.5	71.4	70.7	77.8	78.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	251	541	1,165	2,511
CNEL:	261	563	1,213	2,614

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Eucalyptus Av. | Job Number: 12005
Road Segment: w/o Bon View Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,388	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	350	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-6.78	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-15.35	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-17.25	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:	59.8	58.6	55.5	54.1	61.3	61.6
Medium Trucks:	62.5	61.1	58.7	57.1	64.2	64.5
Heavy Trucks:	65.8	64.4	60.9	61.0	68.0	68.2
Vehicle Noise:	68.2	66.8	63.7	63.0	70.1	70.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	96	208	447
CNEL:	47	100	216	465

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | *Project Name:* Merrill Commerce Center
Road Name: Eucalyptus Av. | *Job Number:* 12005
Road Segment: w/o Walker Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,076 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	165 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-10.03	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-18.60	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-20.50	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:	56.6	55.3	52.3	50.8	58.1	58.4
Medium Trucks:	59.2	57.8	55.5	53.8	61.0	61.3
Heavy Trucks:	62.6	61.2	57.6	57.7	64.7	64.9
Vehicle Noise:	64.9	63.5	60.4	59.8	66.9	67.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	126	271
CNEL:	28	61	131	282

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | *Project Name:* Merrill Commerce Center
Road Name: Eucalyptus Av. | *Job Number:* 12005
Road Segment: e/o Walker Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,229 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	178 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-9.73	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-18.29	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-20.20	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:	56.9	55.6	52.6	51.1	58.4	58.7
Medium Trucks:	59.5	58.1	55.8	54.1	61.3	61.6
Heavy Trucks:	62.9	61.5	57.9	58.0	65.0	65.2
Vehicle Noise:	65.2	63.8	60.7	60.1	67.2	67.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	132	285
CNEL:	30	64	137	296

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | *Project Name:* Merrill Commerce Center
Road Name: Eucalyptus Av. | *Job Number:* 12005
Road Segment: w/o Vineyard Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,229 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	178 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-9.73	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-18.29	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-20.20	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:	56.9	55.6	52.6	51.1	58.4	58.7
Medium Trucks:	59.5	58.1	55.8	54.1	61.3	61.6
Heavy Trucks:	62.9	61.5	57.9	58.0	65.0	65.2
Vehicle Noise:	65.2	63.8	60.7	60.1	67.2	67.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	132	285
CNEL:	30	64	137	296

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | *Project Name:* Merrill Commerce Center
Road Name: Eucalyptus Av. | *Job Number:* 12005
Road Segment: e/o Vineyard Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,229 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	178 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-9.73	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-18.29	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-20.20	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:	56.9	55.6	52.6	51.1	58.4	58.7
Medium Trucks:	59.5	58.1	55.8	54.1	61.3	61.6
Heavy Trucks:	62.9	61.5	57.9	58.0	65.0	65.2
Vehicle Noise:	65.2	63.8	60.7	60.1	67.2	67.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	132	285
CNEL:	30	64	137	296

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Merrill Av. | Job Number: 12005
Road Segment: e/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,274 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	978 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-3.29	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.85	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.76	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:	67.0	65.8	62.7	61.3	68.5	68.8
Medium Trucks:	69.3	67.9	65.5	63.8	71.0	71.3
Heavy Trucks:	71.7	70.3	66.8	66.9	73.8	74.1
Vehicle Noise:	74.5	73.1	70.1	69.4	76.4	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	118	254	548	1,180
CNEL:	123	265	570	1,228

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Merrill Av. | Job Number: 12005
Road Segment: w/o Grove Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,204 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,132 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-2.65	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.21	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.12	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:	67.6	66.4	63.4	61.9	69.2	69.5
Medium Trucks:	69.9	68.5	66.1	64.5	71.6	72.0
Heavy Trucks:	72.4	70.9	67.4	67.5	74.5	74.7
Vehicle Noise:	75.2	73.8	70.7	70.0	77.1	77.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	130	280	604	1,300
CNEL:	135	292	628	1,354

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Merrill Av. | Job Number: 12005
Road Segment: e/o Grove Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,206 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,132 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-2.65	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.21	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.12	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:	67.6	66.4	63.4	61.9	69.2	69.5
Medium Trucks:	69.9	68.5	66.1	64.5	71.6	72.0
Heavy Trucks:	72.4	70.9	67.4	67.5	74.5	74.7
Vehicle Noise:	75.2	73.8	70.7	70.0	77.1	77.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	130	280	604	1,300
CNEL:	135	292	629	1,354

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Merrill Av. | Job Number: 12005
Road Segment: e/o Walker Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,606 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,244 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-2.24	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.81	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.71	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:	68.0	66.8	63.8	62.3	69.6	69.9
Medium Trucks:	70.3	68.9	66.5	64.9	72.0	72.4
Heavy Trucks:	72.8	71.4	67.8	67.9	74.9	75.1
Vehicle Noise:	75.6	74.2	71.1	70.4	77.5	77.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	138	298	643	1,384
CNEL:	144	311	669	1,442

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Merrill Av. | Job Number: 12005
Road Segment: w/o Vineyard Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,361 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,224 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-2.31	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.87	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.78	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:	68.0	66.7	63.7	62.2	69.5	69.8
Medium Trucks:	70.2	68.8	66.5	64.8	72.0	72.3
Heavy Trucks:	72.7	71.3	67.7	67.8	74.8	75.0
Vehicle Noise:	75.5	74.1	71.0	70.3	77.4	77.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	137	295	636	1,370
CNEL:	143	307	662	1,426

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Merrill Av. | Job Number: 12005
Road Segment: e/o Vineyard Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,495 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,315 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-2.00	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.56	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.47	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:	68.3	67.0	64.0	62.6	69.8	70.1
Medium Trucks:	70.5	69.2	66.8	65.1	72.3	72.6
Heavy Trucks:	73.0	71.6	68.1	68.1	75.1	75.3
Vehicle Noise:	75.8	74.4	71.4	70.6	77.7	78.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	144	309	667	1,437
CNEL:	150	322	694	1,496

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Limonite | Job Number: 12005
Road Segment: e/o Archibald Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,551 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,718 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-0.38	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-8.95	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.85	-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:	65.0	63.8	60.8	59.3	66.6	66.9
Medium Trucks:	67.5	66.1	63.7	62.0	69.2	69.5
Heavy Trucks:	70.4	68.9	65.4	65.5	72.5	72.7
Vehicle Noise:	72.9	71.5	68.4	67.8	74.8	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	160	344	741	1,597
CNEL:	166	358	772	1,663

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Limonite | Job Number: 12005
Road Segment: w/o Sumner Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,253 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,853 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-0.05	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-8.62	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.52	-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	64.1	61.1	59.6	66.9	67.2
Medium Trucks:	67.8	66.4	64.0	62.4	69.5	69.8
Heavy Trucks:	70.7	69.3	65.7	65.8	72.8	73.0
Vehicle Noise:	73.3	71.9	68.8	68.1	75.2	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	168	362	780	1,680
CNEL:	175	377	812	1,749

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Limonite | Job Number: 12005
Road Segment: w/o Scholar Wy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,796 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,817 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-0.14	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-8.70	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.61	-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:	65.3	64.0	61.0	59.5	66.8	67.1
Medium Trucks:	67.7	66.3	63.9	62.3	69.4	69.8
Heavy Trucks:	70.6	69.2	65.6	65.7	72.7	72.9
Vehicle Noise:	73.2	71.8	68.7	68.0	75.1	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	166	357	770	1,658
CNEL:	173	372	801	1,726

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Limonite | Job Number: 12005
Road Segment: w/o Hamner Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,400 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,865 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-0.03	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-8.59	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.50	-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:	65.4	64.1	61.1	59.7	66.9	67.2
Medium Trucks:	67.8	66.4	64.0	62.4	69.6	69.9
Heavy Trucks:	70.7	69.3	65.8	65.8	72.8	73.0
Vehicle Noise:	73.3	71.9	68.8	68.1	75.2	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	169	364	783	1,687
CNEL:	176	378	815	1,756

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022 | Project Name: Merrill Commerce Center
Road Name: Limonite | Job Number: 12005
Road Segment: e/o Hamner Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,725 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,971 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	0.21	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-8.35	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.26	-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:	65.6	64.4	61.3	59.9	67.2	67.5
Medium Trucks:	68.1	66.7	64.3	62.6	69.8	70.1
Heavy Trucks:	71.0	69.5	66.0	66.1	73.1	73.3
Vehicle Noise:	73.5	72.1	69.0	68.4	75.4	75.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	175	377	812	1,750
CNEL:	182	393	846	1,822

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o SR-60

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,359 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,057 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.39%
Medium Trucks:	69.4%	10.0%	20.6%	11.32%
Heavy Trucks:	69.0%	7.6%	23.4%	7.29%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.63	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	77.72	-5.93	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-7.84	2.47	-1.20	-5.21	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	69.1	66.1	64.6	71.9	72.2
Medium Trucks:	73.1	71.7	69.3	67.6	74.8	75.1
Heavy Trucks:	76.4	75.0	71.5	71.6	78.5	78.7
Vehicle Noise:	78.7	77.4	74.2	73.6	80.7	80.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	432	931	2,007	4,323
CNEL:	450	969	2,088	4,498

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Euclid Av.
Road Segment: n/o SR-60 EB Ramps
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,252	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,128	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.90%
Medium Trucks:	69.4%	10.0%	20.6%	11.47%
Heavy Trucks:	69.0%	7.6%	23.4%	7.63%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.20	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-6.29	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.06	2.47	-1.20	-5.21	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	70.6	67.6	66.2	73.4	73.7
Medium Trucks:	74.4	73.0	70.7	69.0	76.2	76.5
Heavy Trucks:	77.5	76.0	72.5	72.6	79.6	79.8
Vehicle Noise:	79.9	78.6	75.5	74.8	81.9	82.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	519	1,119	2,411	5,194
CNEL:	541	1,165	2,509	5,405

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Euclid Av.
Road Segment: n/o Walnut Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,872	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,257	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.93%
Medium Trucks:	69.4%	10.0%	20.6%	11.46%
Heavy Trucks:	69.0%	7.6%	23.4%	7.61%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.37	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-6.12	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-7.90	2.47	-1.20	-5.21	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	70.8	67.8	66.3	73.6	73.9
Medium Trucks:	74.6	73.2	70.8	69.2	76.3	76.7
Heavy Trucks:	77.6	76.2	72.7	72.8	79.7	80.0
Vehicle Noise:	80.1	78.7	75.6	75.0	82.0	82.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	533	1,148	2,474	5,329
CNEL:	555	1,195	2,574	5,546

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Euclid Av.
Road Segment: n/o Riverside Dr.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,511	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,069	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.93%
Medium Trucks:	69.4%	10.0%	20.6%	11.46%
Heavy Trucks:	69.0%	7.6%	23.4%	7.62%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.11	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-6.38	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.15	2.47	-1.20	-5.21	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	70.6	67.5	66.1	73.3	73.6
Medium Trucks:	74.3	72.9	70.6	68.9	76.1	76.4
Heavy Trucks:	77.4	76.0	72.4	72.5	79.5	79.7
Vehicle Noise:	79.9	78.5	75.4	74.7	81.8	82.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	512	1,104	2,379	5,125
CNEL:	533	1,149	2,476	5,334

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Euclid Av.
Road Segment: n/o Chino Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,711	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,766	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.94%
Medium Trucks:	69.4%	10.0%	20.6%	11.43%
Heavy Trucks:	69.0%	7.6%	23.4%	7.63%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.66	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-6.84	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.59	2.47	-1.20	-5.21	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	70.1	67.1	65.6	72.9	73.2
Medium Trucks:	73.9	72.5	70.1	68.5	75.6	75.9
Heavy Trucks:	76.9	75.5	72.0	72.1	79.0	79.3
Vehicle Noise:	79.4	78.0	74.9	74.3	81.3	81.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	478	1,030	2,220	4,783
CNEL:	498	1,072	2,311	4,978

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Euclid Av.
Road Segment: n/o Schaefer Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,294 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,972 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.99%
Medium Trucks:	69.4%	10.0%	20.6%	11.41%
Heavy Trucks:	69.0%	7.6%	23.4%	7.60%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.98	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-6.53	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.30	2.47	-1.20	-5.21	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	70.4	67.4	65.9	73.2	73.5
Medium Trucks:	74.2	72.8	70.4	68.8	75.9	76.2
Heavy Trucks:	77.2	75.8	72.3	72.4	79.3	79.5
Vehicle Noise:	79.7	78.3	75.2	74.6	81.6	81.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	501	1,079	2,325	5,008
CNEL:	521	1,123	2,419	5,213

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Euclid Av.
Road Segment: n/o Edison Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,392 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,140 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.02%
Medium Trucks:	69.4%	10.0%	20.6%	11.40%
Heavy Trucks:	69.0%	7.6%	23.4%	7.58%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.22	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-6.30	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.07	2.47	-1.20	-5.21	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	70.7	67.6	66.2	73.4	73.7
Medium Trucks:	74.4	73.0	70.6	69.0	76.2	76.5
Heavy Trucks:	77.4	76.0	72.5	72.6	79.5	79.8
Vehicle Noise:	79.9	78.6	75.5	74.8	81.9	82.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	519	1,118	2,408	5,187
CNEL:	540	1,163	2,506	5,399

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Euclid Av.
Road Segment: n/o Eucalyptus Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,397 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,901 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.82%
Medium Trucks:	69.4%	10.0%	20.6%	11.51%
Heavy Trucks:	69.0%	7.6%	23.4%	7.67%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.86	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-6.60	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.37	2.47	-1.20	-5.21	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	70.3	67.3	65.8	73.1	73.4
Medium Trucks:	74.1	72.7	70.3	68.7	75.9	76.2
Heavy Trucks:	77.2	75.7	72.2	72.3	79.3	79.5
Vehicle Noise:	79.6	78.3	75.1	74.5	81.6	81.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	495	1,067	2,298	4,951
CNEL:	515	1,110	2,392	5,153

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Euclid Av.
Road Segment: n/o Merrill Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,723 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,927 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.75%
Medium Trucks:	69.4%	10.0%	20.6%	11.55%
Heavy Trucks:	69.0%	7.6%	23.4%	7.69%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.03	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-7.42	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.18	2.47	-1.20	-5.21	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:	74.0	72.8	69.8	68.3	75.6	75.9
Medium Trucks:	76.3	74.9	72.5	70.8	78.0	78.3
Heavy Trucks:	78.5	77.1	73.5	73.6	80.6	80.8
Vehicle Noise:	81.4	80.0	77.0	76.2	83.3	83.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	646	1,392	2,999	6,462
CNEL:	673	1,450	3,124	6,730

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Euclid Av.
Road Segment: n/o Kimball Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,517 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,070 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.14%
Medium Trucks:	69.4%	10.0%	20.6%	11.37%
Heavy Trucks:	69.0%	7.6%	23.4%	7.49%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.25	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-7.28	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.10	2.47	-1.20	-5.21	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:	74.3	73.0	70.0	68.5	75.8	76.1
Medium Trucks:	76.4	75.0	72.6	71.0	78.1	78.4
Heavy Trucks:	78.6	77.1	73.6	73.7	80.7	80.9
Vehicle Noise:	81.5	80.2	77.1	76.3	83.4	83.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	659	1,420	3,059	6,590
CNEL:	686	1,479	3,186	6,864

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Euclid Av.
Road Segment: n/o Bickmore Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,001 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,072 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.00%
Medium Trucks:	69.4%	10.0%	20.6%	11.41%
Heavy Trucks:	69.0%	7.6%	23.4%	7.59%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.46	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.97	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.74	2.47	-1.20	-5.21	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:	72.5	71.3	68.3	66.8	74.1	74.4
Medium Trucks:	74.7	73.3	70.9	69.3	76.4	76.8
Heavy Trucks:	76.9	75.5	72.0	72.1	79.0	79.2
Vehicle Noise:	79.9	78.5	75.4	74.7	81.7	82.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	510	1,098	2,366	5,097
CNEL:	531	1,144	2,464	5,308

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Euclid Av.
Road Segment: n/o Pine Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,171 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,006 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.99%
Medium Trucks:	69.4%	10.0%	20.6%	11.41%
Heavy Trucks:	69.0%	7.6%	23.4%	7.60%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.60	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.11	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.88	2.47	-1.20	-5.21	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	71.2	68.1	66.7	73.9	74.2
Medium Trucks:	74.6	73.2	70.8	69.1	76.3	76.6
Heavy Trucks:	76.8	75.4	71.8	71.9	78.9	79.1
Vehicle Noise:	79.7	78.3	75.3	74.5	81.6	81.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	499	1,075	2,316	4,990
CNEL:	520	1,120	2,412	5,197

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Euclid Av.
Road Segment: s/o Pine Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	43,579 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,473 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.15%
Medium Trucks:	69.4%	10.0%	20.6%	11.38%
Heavy Trucks:	69.0%	7.6%	23.4%	7.47%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.79	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-6.74	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.57	2.47	-1.20	-5.21	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:	74.8	73.6	70.5	69.1	76.3	76.6
Medium Trucks:	76.9	75.5	73.2	71.5	78.7	79.0
Heavy Trucks:	79.1	77.7	74.1	74.2	81.2	81.4
Vehicle Noise:	82.1	80.7	77.6	76.9	84.0	84.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	715	1,541	3,319	7,151
CNEL:	745	1,605	3,457	7,448

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Grove Av.
Road Segment: n/o SR-60

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,771 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,931 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.42%
Medium Trucks:	69.4%	10.0%	20.6%	11.30%
Heavy Trucks:	69.0%	7.6%	23.4%	7.28%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.94	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-6.64	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.55	0.61	-1.20	-5.34	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	68.5	65.5	64.1	71.3	71.6
Medium Trucks:	72.2	70.8	68.4	66.8	74.0	74.3
Heavy Trucks:	75.1	73.7	70.2	70.2	77.2	77.4
Vehicle Noise:	77.7	76.3	73.2	72.5	79.6	79.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	262	564	1,215	2,618
CNEL:	273	587	1,265	2,725

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Grove Av.
Road Segment: n/o SR-60 EB Ramps

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,417 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,424 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.50%
Medium Trucks:	69.4%	10.0%	20.6%	11.25%
Heavy Trucks:	69.0%	7.6%	23.4%	7.25%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.12	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-7.48	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.39	0.61	-1.20	-5.34	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	67.7	64.7	63.2	70.5	70.8
Medium Trucks:	71.4	70.0	67.6	66.0	73.1	73.4
Heavy Trucks:	74.3	72.9	69.3	69.4	76.4	76.6
Vehicle Noise:	76.8	75.5	72.4	71.7	78.8	79.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	230	496	1,068	2,302
CNEL:	240	516	1,112	2,396

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Grove Av.
Road Segment: n/o Walnut Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,625 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,963 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.59%
Medium Trucks:	69.4%	10.0%	20.6%	11.19%
Heavy Trucks:	69.0%	7.6%	23.4%	7.21%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.21	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-8.42	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.33	0.61	-1.20	-5.34	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	66.8	63.8	62.3	69.6	69.9
Medium Trucks:	70.4	69.0	66.7	65.0	72.2	72.5
Heavy Trucks:	73.3	71.9	68.4	68.5	75.4	75.7
Vehicle Noise:	75.9	74.5	71.4	70.8	77.8	78.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	199	430	926	1,994
CNEL:	208	447	963	2,076

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Grove Av.
Road Segment: n/o Riverside Dr.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,454 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,391 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.68%
Medium Trucks:	69.4%	10.0%	20.6%	11.14%
Heavy Trucks:	69.0%	7.6%	23.4%	7.18%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.28	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.94	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.84	0.61	-1.20	-5.34	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:	66.6	65.3	62.3	60.8	68.1	68.4
Medium Trucks:	68.9	67.5	65.2	63.5	70.7	71.0
Heavy Trucks:	71.8	70.4	66.9	66.9	73.9	74.1
Vehicle Noise:	74.4	73.0	69.9	69.2	76.3	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	158	341	734	1,581
CNEL:	165	355	764	1,646

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Grove Av.
Road Segment: n/o Chino Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,066 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	962 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.94%
Medium Trucks:	69.4%	10.0%	20.6%	10.98%
Heavy Trucks:	69.0%	7.6%	23.4%	7.08%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.33	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-12.06	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.97	1.46	-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:	67.1	65.9	62.8	61.4	68.6	68.9
Medium Trucks:	69.2	67.8	65.4	63.8	70.9	71.3
Heavy Trucks:	71.7	70.3	66.7	66.8	73.8	74.0
Vehicle Noise:	74.5	73.1	70.0	69.3	76.4	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	133	287	619	1,334
CNEL:	139	299	645	1,389

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Grove Av.
Road Segment: n/o Schaefer Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,014 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	878 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	82.00%
Medium Trucks:	69.4%	10.0%	20.6%	10.95%
Heavy Trucks:	69.0%	7.6%	23.4%	7.06%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.72	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-12.47	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.38	1.46	-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:	66.7	65.5	62.4	61.0	68.2	68.5
Medium Trucks:	68.8	67.4	65.0	63.4	70.5	70.8
Heavy Trucks:	71.3	69.8	66.3	66.4	73.4	73.6
Vehicle Noise:	74.1	72.7	69.6	68.9	76.0	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	125	270	582	1,253
CNEL:	130	281	606	1,305

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Grove Av.
Road Segment: n/o Edison Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,822 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	783 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	82.07%
Medium Trucks:	69.4%	10.0%	20.6%	10.90%
Heavy Trucks:	69.0%	7.6%	23.4%	7.03%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.22	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-12.98	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.89	1.46	-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:	66.2	65.0	61.9	60.5	67.8	68.1
Medium Trucks:	68.3	66.9	64.5	62.9	70.0	70.3
Heavy Trucks:	70.7	69.3	65.8	65.9	72.8	73.1
Vehicle Noise:	73.6	72.2	69.1	68.4	75.5	75.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	250	538	1,158
CNEL:	121	260	560	1,206

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Grove Av.
Road Segment: n/o Eucalyptus Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,246 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	896 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	83.28%
Medium Trucks:	69.4%	10.0%	20.6%	10.17%
Heavy Trucks:	69.0%	7.6%	23.4%	6.55%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.57	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-12.70	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.61	1.46	-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:	66.9	65.6	62.6	61.1	68.4	68.7
Medium Trucks:	68.6	67.2	64.8	63.1	70.3	70.6
Heavy Trucks:	71.0	69.6	66.1	66.2	73.1	73.4
Vehicle Noise:	73.9	72.6	69.5	68.7	75.8	76.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	122	263	567	1,222
CNEL:	127	274	591	1,273

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Grove Av.
Road Segment: n/o Street A
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,232 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	656 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	84.82%
Medium Trucks:	69.4%	10.0%	20.6%	9.23%
Heavy Trucks:	69.0%	7.6%	23.4%	5.95%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.84	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-14.47	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.38	1.46	-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:	65.6	64.3	61.3	59.9	67.1	67.4
Medium Trucks:	66.8	65.4	63.0	61.4	68.5	68.8
Heavy Trucks:	69.3	67.8	64.3	64.4	71.4	71.6
Vehicle Noise:	72.3	70.9	67.8	67.1	74.1	74.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	94	203	438	944
CNEL:	98	212	457	984

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Grove Av.
Road Segment: n/o Merrill Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,232 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	656 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	84.82%
Medium Trucks:	69.4%	10.0%	20.6%	9.23%
Heavy Trucks:	69.0%	7.6%	23.4%	5.95%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.84	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-14.47	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.38	1.46	-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:	65.6	64.3	61.3	59.9	67.1	67.4
Medium Trucks:	66.8	65.4	63.0	61.4	68.5	68.8
Heavy Trucks:	69.3	67.8	64.3	64.4	71.4	71.6
Vehicle Noise:	72.3	70.9	67.8	67.1	74.1	74.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	94	203	438	944
CNEL:	98	212	457	984

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Archibald Av.
Road Segment: n/o SR-60
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,525 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,353 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.39%
Medium Trucks:	69.4%	10.0%	20.6%	11.32%
Heavy Trucks:	69.0%	7.6%	23.4%	7.29%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.53	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-8.04	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-9.95	0.61	-1.20	-5.34	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	68.9	65.8	64.4	71.7	72.0
Medium Trucks:	72.4	71.0	68.6	66.9	74.1	74.4
Heavy Trucks:	74.8	73.4	69.9	70.0	76.9	77.2
Vehicle Noise:	77.6	76.3	73.2	72.5	79.5	79.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	259	559	1,203	2,593
CNEL:	270	582	1,253	2,700

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Archibald Av.
Road Segment: n/o SR-60 EB Ramps
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,084 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,115 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.38%
Medium Trucks:	69.4%	10.0%	20.6%	11.32%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.74	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-6.82	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-8.73	0.61	-1.20	-5.34	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	70.1	67.1	65.6	72.9	73.2
Medium Trucks:	73.6	72.2	69.8	68.2	75.3	75.6
Heavy Trucks:	76.1	74.6	71.1	71.2	78.2	78.4
Vehicle Noise:	78.9	77.5	74.4	73.7	80.8	81.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	313	674	1,451	3,126
CNEL:	326	701	1,511	3,255

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Archibald Av.
Road Segment: n/o Riverside Dr.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,164	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,085	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.01%
Medium Trucks:	69.4%	10.0%	20.6%	11.41%
Heavy Trucks:	69.0%	7.6%	23.4%	7.58%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.02	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-8.53	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.30	0.61	-1.20	*-5.34*	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:	69.6	68.3	65.3	63.8	71.1	71.4
Medium Trucks:	71.9	70.5	68.1	66.5	73.6	73.9
Heavy Trucks:	74.5	73.1	69.5	69.6	76.6	76.8
Vehicle Noise:	77.2	75.8	72.7	72.0	79.1	79.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	243	523	1,128	2,429
CNEL:	253	545	1,174	2,529

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Archibald Av.
Road Segment: n/o Chino Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,860	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,300	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.11%
Medium Trucks:	69.4%	10.0%	20.6%	11.36%
Heavy Trucks:	69.0%	7.6%	23.4%	7.53%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.41	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-8.12	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.91	0.61	-1.20	*-5.34*	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:	70.0	68.8	65.7	64.3	71.5	71.8
Medium Trucks:	72.3	70.9	68.5	66.9	74.0	74.3
Heavy Trucks:	74.9	73.5	69.9	70.0	77.0	77.2
Vehicle Noise:	77.6	76.2	73.1	72.4	79.5	79.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	258	557	1,200	2,585
CNEL:	269	580	1,249	2,691

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Archibald Av.
Road Segment: n/o Schaefer Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,907	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,905	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.09%
Medium Trucks:	69.4%	10.0%	20.6%	11.35%
Heavy Trucks:	69.0%	7.6%	23.4%	7.57%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.82	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-9.36	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-11.12	0.61	-1.20	*-5.34*	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	69.1	66.1	64.6	71.9	72.2
Medium Trucks:	72.5	71.1	68.7	67.0	74.2	74.5
Heavy Trucks:	74.7	73.3	69.7	69.8	76.8	77.0
Vehicle Noise:	77.6	76.2	73.2	72.4	79.5	79.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	258	557	1,200	2,585
CNEL:	269	580	1,250	2,692

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Archibald Av.
Road Segment: n/o Edison Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,907	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,905	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.09%
Medium Trucks:	69.4%	10.0%	20.6%	11.35%
Heavy Trucks:	69.0%	7.6%	23.4%	7.57%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.82	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-9.36	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-11.12	0.61	-1.20	*-5.34*	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	69.1	66.1	64.6	71.9	72.2
Medium Trucks:	72.5	71.1	68.7	67.0	74.2	74.5
Heavy Trucks:	74.7	73.3	69.7	69.8	76.8	77.0
Vehicle Noise:	77.6	76.2	73.2	72.4	79.5	79.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	258	557	1,200	2,585
CNEL:	269	580	1,250	2,692

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Archibald Av.
Road Segment: n/o Eucalyptus Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,733 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,370 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.41%
Medium Trucks:	69.4%	10.0%	20.6%	11.67%
Heavy Trucks:	69.0%	7.6%	23.4%	7.93%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.09	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-8.29	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.97	0.61	-1.20	-5.34	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	70.0	67.0	65.5	72.8	73.1
Medium Trucks:	73.5	72.1	69.7	68.1	75.3	75.6
Heavy Trucks:	75.8	74.4	70.9	71.0	77.9	78.2
Vehicle Noise:	78.7	77.3	74.3	73.5	80.6	80.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	305	658	1,417	3,053
CNEL:	318	685	1,476	3,180

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Archibald Av.
Road Segment: n/o Merrill Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,522 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,353 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.40%
Medium Trucks:	69.4%	10.0%	20.6%	11.67%
Heavy Trucks:	69.0%	7.6%	23.4%	7.93%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.06	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-8.32	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.00	0.61	-1.20	-5.34	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	70.0	67.0	65.5	72.8	73.1
Medium Trucks:	73.5	72.1	69.7	68.1	75.2	75.5
Heavy Trucks:	75.8	74.4	70.8	70.9	77.9	78.1
Vehicle Noise:	78.7	77.3	74.2	73.5	80.6	80.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	304	655	1,411	3,040
CNEL:	317	682	1,469	3,165

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Archibald Av.
Road Segment: n/o Limonite Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,267 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,412 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.48%
Medium Trucks:	69.4%	10.0%	20.6%	11.20%
Heavy Trucks:	69.0%	7.6%	23.4%	7.32%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.23	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-8.39	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.24	0.61	-1.20	-5.34	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	70.1	67.1	65.7	72.9	73.2
Medium Trucks:	73.4	72.0	69.6	68.0	75.2	75.5
Heavy Trucks:	75.6	74.1	70.6	70.7	77.7	77.9
Vehicle Noise:	78.6	77.2	74.1	73.4	80.4	80.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	298	643	1,385	2,984
CNEL:	311	670	1,442	3,108

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Archibald Av.
Road Segment: n/o Schleisman Rd.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,960 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,308 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	120 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	110.0 feet
Centerline Dist. to Observer:	110.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.46%
Medium Trucks:	69.4%	10.0%	20.6%	11.27%
Heavy Trucks:	69.0%	7.6%	23.4%	7.26%

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:	92.331
Medium Trucks:	92.235
Heavy Trucks:	92.244

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.45	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	81.00	-8.14	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-10.05	-4.09	-1.20	-5.14	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	64.1	61.1	59.6	66.9	67.2
Medium Trucks:	67.6	66.2	63.8	62.1	69.3	69.6
Heavy Trucks:	70.0	68.6	65.1	65.2	72.1	72.4
Vehicle Noise:	72.8	71.5	68.4	67.7	74.7	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	228	490	1,057	2,276
CNEL:	237	511	1,100	2,370

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Archibald Av.
Road Segment: s/o Schleisman Rd.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,681 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,967 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	120 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	110.0 feet
Centerline Dist. to Observer:	110.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.48%
Medium Trucks:	69.4%	10.0%	20.6%	11.26%
Heavy Trucks:	69.0%	7.6%	23.4%	7.26%

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:	92.331
Medium Trucks:	92.235
Heavy Trucks:	92.244

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.25	-4.10	-1.20	*-4.78*	0.000	0.000
Medium Trucks:	81.00	-8.84	-4.09	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.75	-4.09	-1.20	*-5.14*	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	63.4	60.4	58.9	66.2	66.5
Medium Trucks:	66.9	65.5	63.1	61.4	68.6	68.9
Heavy Trucks:	69.3	67.9	64.4	64.5	71.4	71.7
Vehicle Noise:	72.1	70.8	67.7	67.0	74.0	74.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	205	441	949	2,045
CNEL:	213	459	988	2,130

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Edison Av.
Road Segment: w/o Pipeline Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,519 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,911 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.56%
Medium Trucks:	69.4%	10.0%	20.6%	11.22%
Heavy Trucks:	69.0%	7.6%	23.4%	7.23%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.92	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-6.70	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.61	0.37	-1.20	*-5.34*	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:	69.5	68.3	65.2	63.8	71.1	71.4
Medium Trucks:	71.9	70.5	68.1	66.5	73.7	74.0
Heavy Trucks:	74.8	73.4	69.8	69.9	76.9	77.1
Vehicle Noise:	77.4	76.0	72.9	72.2	79.3	79.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	250	539	1,161	2,501
CNEL:	260	561	1,208	2,603

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Edison Av.
Road Segment: w/o Ramona Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,236 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,490 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.59%
Medium Trucks:	69.4%	10.0%	20.6%	11.20%
Heavy Trucks:	69.0%	7.6%	23.4%	7.21%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.24	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.39	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.29	0.37	-1.20	*-5.34*	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	67.6	64.6	63.1	70.4	70.7
Medium Trucks:	71.2	69.8	67.5	65.8	73.0	73.3
Heavy Trucks:	74.1	72.7	69.2	69.3	76.2	76.5
Vehicle Noise:	76.7	75.3	72.2	71.5	78.6	78.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	225	485	1,045	2,251
CNEL:	234	505	1,088	2,343

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Edison Av.
Road Segment: w/o Central Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,700 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,048 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.64%
Medium Trucks:	69.4%	10.0%	20.6%	11.17%
Heavy Trucks:	69.0%	7.6%	23.4%	7.20%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.40	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-8.24	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.15	0.37	-1.20	*-5.34*	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:	68.0	66.8	63.7	62.3	69.5	69.8
Medium Trucks:	70.4	69.0	66.6	64.9	72.1	72.4
Heavy Trucks:	73.3	71.8	68.3	68.4	75.4	75.6
Vehicle Noise:	75.8	74.5	71.4	70.7	77.8	78.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	197	425	916	1,974
CNEL:	205	443	954	2,055

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Edison Av.
Road Segment: w/o Mountain Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,816	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,376	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.62%
Medium Trucks:	69.4%	10.0%	20.6%	11.18%
Heavy Trucks:	69.0%	7.6%	23.4%	7.20%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.04	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.60	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.50	0.37	-1.20	*-5.34*	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:	68.6	67.4	64.4	62.9	70.2	70.5
Medium Trucks:	71.0	69.6	67.2	65.6	72.8	73.1
Heavy Trucks:	73.9	72.5	69.0	69.0	76.0	76.2
Vehicle Noise:	76.5	75.1	72.0	71.3	78.4	78.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	218	470	1,012	2,180
CNEL:	227	489	1,053	2,269

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Edison Av.
Road Segment: w/o San Antonio Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,454	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,029	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.69%
Medium Trucks:	69.4%	10.0%	20.6%	11.13%
Heavy Trucks:	69.0%	7.6%	23.4%	7.17%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.36	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-8.30	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.21	0.37	-1.20	*-5.34*	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:	68.0	66.7	63.7	62.2	69.5	69.8
Medium Trucks:	70.3	68.9	66.5	64.9	72.1	72.4
Heavy Trucks:	73.2	71.8	68.2	68.3	75.3	75.5
Vehicle Noise:	75.8	74.4	71.3	70.6	77.7	78.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	196	422	909	1,958
CNEL:	204	439	946	2,038

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Edison Av.
Road Segment: w/o Euclid Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,798	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,658	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.77%
Medium Trucks:	69.4%	10.0%	20.6%	11.09%
Heavy Trucks:	69.0%	7.6%	23.4%	7.15%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.52	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-9.19	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-11.10	0.37	-1.20	*-5.34*	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:	67.1	65.8	62.8	61.4	68.6	68.9
Medium Trucks:	69.4	68.0	65.6	64.0	71.2	71.5
Heavy Trucks:	72.3	70.9	67.4	67.4	74.4	74.6
Vehicle Noise:	74.9	73.5	70.4	69.7	76.8	77.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	171	368	793	1,708
CNEL:	178	383	825	1,777

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Edison Av.
Road Segment: e/o Euclid Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,777	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,098	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	82.42%
Medium Trucks:	69.4%	10.0%	20.6%	10.69%
Heavy Trucks:	69.0%	7.6%	23.4%	6.89%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-2.73	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-11.60	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-13.51	2.47	-1.20	*-5.21*	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	67.5	64.4	63.0	70.2	70.5
Medium Trucks:	70.7	69.3	66.9	65.2	72.4	72.7
Heavy Trucks:	73.1	71.7	68.2	68.3	75.2	75.5
Vehicle Noise:	76.0	74.6	71.5	70.8	77.9	78.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	282	607	1,307	2,816
CNEL:	293	632	1,361	2,932

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Edison Av.
Road Segment: w/o Grove Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,644 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	928 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	82.62%
Medium Trucks:	69.4%	10.0%	20.6%	10.57%
Heavy Trucks:	69.0%	7.6%	23.4%	6.81%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.45	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-12.38	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-14.29	2.47	-1.20	-5.21	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:	68.0	66.7	63.7	62.3	69.5	69.8
Medium Trucks:	69.9	68.5	66.1	64.5	71.6	71.9
Heavy Trucks:	72.4	70.9	67.4	67.5	74.5	74.7
Vehicle Noise:	75.2	73.8	70.8	70.0	77.1	77.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	250	539	1,162	2,503
CNEL:	261	562	1,210	2,606

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Edison Av.
Road Segment: w/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,118 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,125 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.68	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-11.24	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-13.15	2.47	-1.20	-5.21	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	67.5	64.5	63.0	70.3	70.6
Medium Trucks:	71.0	69.6	67.3	65.6	72.8	73.1
Heavy Trucks:	73.5	72.1	68.5	68.6	75.6	75.8
Vehicle Noise:	76.3	74.9	71.8	71.1	78.2	78.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	295	636	1,370	2,952
CNEL:	307	662	1,427	3,074

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Edison Av.
Road Segment: w/o Archibald Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,713 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,252 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	82.74%
Medium Trucks:	69.4%	10.0%	20.6%	10.50%
Heavy Trucks:	69.0%	7.6%	23.4%	6.77%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.14	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-11.11	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-13.01	2.47	-1.20	-5.21	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	68.0	65.0	63.6	70.8	71.1
Medium Trucks:	71.2	69.8	67.4	65.7	72.9	73.2
Heavy Trucks:	73.6	72.2	68.7	68.8	75.7	76.0
Vehicle Noise:	76.5	75.1	72.0	71.3	78.4	78.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	305	656	1,414	3,045
CNEL:	317	683	1,472	3,171

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Edison Av.
Road Segment: w/o Haven Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,591 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,880 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.32%
Medium Trucks:	69.4%	10.0%	20.6%	11.20%
Heavy Trucks:	69.0%	7.6%	23.4%	7.48%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.45	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-9.06	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-10.82	2.47	-1.20	-5.21	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	69.7	66.7	65.3	72.5	72.8
Medium Trucks:	73.2	71.8	69.4	67.8	74.9	75.3
Heavy Trucks:	75.8	74.4	70.9	71.0	77.9	78.2
Vehicle Noise:	78.6	77.2	74.1	73.4	80.5	80.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	418	902	1,942	4,185
CNEL:	436	939	2,022	4,357

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Edison Av.
Road Segment: e/o Haven Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,272 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,935 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.29%
Medium Trucks:	69.4%	10.0%	20.6%	11.22%
Heavy Trucks:	69.0%	7.6%	23.4%	7.48%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.33	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-8.93	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.69	2.47	-1.20	*-5.21*	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:	71.1	69.9	66.8	65.4	72.6	72.9
Medium Trucks:	73.3	72.0	69.6	67.9	75.1	75.4
Heavy Trucks:	76.0	74.5	71.0	71.1	78.1	78.3
Vehicle Noise:	78.7	77.3	74.2	73.5	80.6	80.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	427	919	1,981	4,268
CNEL:	444	957	2,062	4,443

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Ontario Ranch Rd.
Road Segment: e/o Hamner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,546 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,833 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.32%
Medium Trucks:	69.4%	10.0%	20.6%	11.26%
Heavy Trucks:	69.0%	7.6%	23.4%	7.43%

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	1.33	-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	-9.07	-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:	68.5	67.2	64.2	62.8	70.0	70.3
Medium Trucks:	70.7	69.3	66.9	65.3	72.4	72.8
Heavy Trucks:	73.3	71.9	68.3	68.4	75.4	75.6
Vehicle Noise:	76.0	74.6	71.6	70.9	77.9	78.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	257	553	1,191	2,566
CNEL:	267	576	1,240	2,672

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Eucalyptus Av.
Road Segment: w/o Bon View Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,574 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	365 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	82.13%
Medium Trucks:	69.4%	10.0%	20.6%	10.87%
Heavy Trucks:	69.0%	7.6%	23.4%	7.00%

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:	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:	66.51	-6.56	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-15.35	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-17.25	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:	60.0	58.8	55.8	54.3	61.6	61.9
Medium Trucks:	62.5	61.1	58.7	57.1	64.2	64.5
Heavy Trucks:	65.8	64.4	60.9	61.0	68.0	68.2
Vehicle Noise:	68.2	66.8	63.7	63.1	70.1	70.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	208	449
CNEL:	47	101	217	467

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Eucalyptus Av.
Road Segment: w/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,076 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	165 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-10.03	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-18.60	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-20.50	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:	56.6	55.3	52.3	50.8	58.1	58.4
Medium Trucks:	59.2	57.8	55.5	53.8	61.0	61.3
Heavy Trucks:	62.6	61.2	57.6	57.7	64.7	64.9
Vehicle Noise:	64.9	63.5	60.4	59.8	66.9	67.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	126	271
CNEL:	28	61	131	282

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Eucalyptus Av.
Road Segment: e/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,229 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	178 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-9.73	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-18.29	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-20.20	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:	56.9	55.6	52.6	51.1	58.4	58.7
Medium Trucks:	59.5	58.1	55.8	54.1	61.3	61.6
Heavy Trucks:	62.9	61.5	57.9	58.0	65.0	65.2
Vehicle Noise:	65.2	63.8	60.7	60.1	67.2	67.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	132	285
CNEL:	30	64	137	296

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Eucalyptus Av.
Road Segment: w/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,229 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	178 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-9.73	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-18.29	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-20.20	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:	56.9	55.6	52.6	51.1	58.4	58.7
Medium Trucks:	59.5	58.1	55.8	54.1	61.3	61.6
Heavy Trucks:	62.9	61.5	57.9	58.0	65.0	65.2
Vehicle Noise:	65.2	63.8	60.7	60.1	67.2	67.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	132	285
CNEL:	30	64	137	296

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Eucalyptus Av.
Road Segment: e/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,229 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	178 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-9.73	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-18.29	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-20.20	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:	56.9	55.6	52.6	51.1	58.4	58.7
Medium Trucks:	59.5	58.1	55.8	54.1	61.3	61.6
Heavy Trucks:	62.9	61.5	57.9	58.0	65.0	65.2
Vehicle Noise:	65.2	63.8	60.7	60.1	67.2	67.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	132	285
CNEL:	30	64	137	296

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Merrill Av.
Road Segment: e/o Euclid Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,070 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,042 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	78.97%
Medium Trucks:	69.4%	10.0%	20.6%	12.08%
Heavy Trucks:	69.0%	7.6%	23.4%	8.95%

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:	40.460
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	-3.14	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.30	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.60	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:	67.1	65.9	62.9	61.4	68.7	69.0
Medium Trucks:	69.8	68.4	66.0	64.4	71.5	71.9
Heavy Trucks:	72.9	71.5	67.9	68.0	75.0	75.2
Vehicle Noise:	75.3	74.0	70.8	70.2	77.3	77.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	134	289	622	1,341
CNEL:	140	301	648	1,396

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Merrill Av.
Road Segment: w/o Grove Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,037 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,198 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	79.33%
Medium Trucks:	69.4%	10.0%	20.6%	11.95%
Heavy Trucks:	69.0%	7.6%	23.4%	8.71%

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	-2.51	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.73	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.11	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:	67.8	66.5	63.5	62.0	69.3	69.6
Medium Trucks:	70.4	69.0	66.6	65.0	72.1	72.4
Heavy Trucks:	73.4	72.0	68.4	68.5	75.5	75.7
Vehicle Noise:	75.9	74.5	71.4	70.7	77.8	78.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	145	313	675	1,455
CNEL:	151	326	703	1,514

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Merrill Av.
Road Segment: e/o Grove Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,533 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,397 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	82.27%
Medium Trucks:	69.4%	10.0%	20.6%	10.25%
Heavy Trucks:	69.0%	7.6%	23.4%	7.47%

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	-1.69	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.73	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.11	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:	68.6	67.3	64.3	62.9	70.1	70.4
Medium Trucks:	70.4	69.0	66.6	65.0	72.1	72.4
Heavy Trucks:	73.4	72.0	68.4	68.5	75.5	75.7
Vehicle Noise:	76.0	74.6	71.5	70.9	77.9	78.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	148	320	689	1,484
CNEL:	154	333	717	1,545

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Merrill Av.
Road Segment: e/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,823 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,500 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	83.08%
Medium Trucks:	69.4%	10.0%	20.6%	9.99%
Heavy Trucks:	69.0%	7.6%	23.4%	6.93%

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:	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	-1.34	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.54	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.13	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:	68.9	67.7	64.7	63.2	70.5	70.8
Medium Trucks:	70.6	69.2	66.8	65.2	72.3	72.6
Heavy Trucks:	73.4	71.9	68.4	68.5	75.5	75.7
Vehicle Noise:	76.1	74.7	71.7	70.9	78.0	78.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	151	325	699	1,507
CNEL:	157	338	728	1,569

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Merrill Av.
Road Segment: w/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,199 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,371 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.68%
Medium Trucks:	69.4%	10.0%	20.6%	11.21%
Heavy Trucks:	69.0%	7.6%	23.4%	8.11%

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	-1.86	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.43	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-11.84	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	67.2	64.2	62.7	70.0	70.3
Medium Trucks:	70.7	69.3	66.9	65.3	72.4	72.7
Heavy Trucks:	73.7	72.2	68.7	68.8	75.8	76.0
Vehicle Noise:	76.2	74.8	71.7	71.1	78.1	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	153	330	711	1,532
CNEL:	159	344	740	1,595

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Merrill Av.
Road Segment: e/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,663 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,408 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	79.99%
Medium Trucks:	69.4%	10.0%	20.6%	11.65%
Heavy Trucks:	69.0%	7.6%	23.4%	8.36%

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	-1.78	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-10.15	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-11.59	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:	68.5	67.3	64.2	62.8	70.0	70.3
Medium Trucks:	71.0	69.6	67.2	65.5	72.7	73.0
Heavy Trucks:	73.9	72.5	68.9	69.0	76.0	76.2
Vehicle Noise:	76.4	75.1	72.0	71.3	78.4	78.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	159	342	737	1,588
CNEL:	165	356	767	1,653

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Limonite
Road Segment: e/o Archibald Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,091 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,761 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.40%
Medium Trucks:	69.4%	10.0%	20.6%	11.23%
Heavy Trucks:	69.0%	7.6%	23.4%	7.37%

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	-0.27	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-8.88	-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:	65.1	63.9	60.9	59.4	66.7	67.0
Medium Trucks:	67.5	66.1	63.8	62.1	69.3	69.6
Heavy Trucks:	70.5	69.1	65.5	65.6	72.6	72.8
Vehicle Noise:	73.0	71.7	68.6	67.9	75.0	75.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	163	351	755	1,627
CNEL:	169	365	786	1,694

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Limonite
Road Segment: w/o Sumner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,793 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,896 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.40%
Medium Trucks:	69.4%	10.0%	20.6%	11.23%
Heavy Trucks:	69.0%	7.6%	23.4%	7.37%

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	0.05	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-8.55	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.39	-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:	65.5	64.2	61.2	59.7	67.0	67.3
Medium Trucks:	67.9	66.5	64.1	62.4	69.6	69.9
Heavy Trucks:	70.8	69.4	65.9	66.0	72.9	73.2
Vehicle Noise:	73.4	72.0	68.9	68.2	75.3	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	171	368	793	1,709
CNEL:	178	383	826	1,779

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Limonite
Road Segment: w/o Scholar Wy.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,299 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,857 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.25%
Heavy Trucks:	69.0%	7.6%	23.4%	7.38%

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	-0.04	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-8.64	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.47	-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	64.1	61.1	59.6	66.9	67.2
Medium Trucks:	67.8	66.4	64.0	62.3	69.5	69.8
Heavy Trucks:	70.7	69.3	65.8	65.9	72.8	73.1
Vehicle Noise:	73.3	71.9	68.8	68.1	75.2	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	169	364	783	1,687
CNEL:	176	378	815	1,756

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Limonite
Road Segment: w/o Hamner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,902 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,905 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.25%
Heavy Trucks:	69.0%	7.6%	23.4%	7.38%

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	0.07	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-8.53	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.36	-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:	65.5	64.2	61.2	59.8	67.0	67.3
Medium Trucks:	67.9	66.5	64.1	62.5	69.6	69.9
Heavy Trucks:	70.9	69.4	65.9	66.0	73.0	73.2
Vehicle Noise:	73.4	72.0	68.9	68.2	75.3	75.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	172	370	797	1,716
CNEL:	179	385	829	1,786

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2022+A
Road Name: Limonite
Road Segment: e/o Hamner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,190 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,008 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.34%
Medium Trucks:	69.4%	10.0%	20.6%	11.27%
Heavy Trucks:	69.0%	7.6%	23.4%	7.39%

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	0.29	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-8.29	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.13	-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:	65.7	64.5	61.4	60.0	67.2	67.5
Medium Trucks:	68.1	66.7	64.3	62.7	69.9	70.2
Heavy Trucks:	71.1	69.7	66.1	66.2	73.2	73.4
Vehicle Noise:	73.6	72.2	69.1	68.5	75.5	75.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	178	383	825	1,778
CNEL:	185	399	859	1,851

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025
Road Name: Euclid Av.
Road Segment: n/o SR-60
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,770 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,249 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.90	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	77.72	-5.67	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-7.57	2.47	-1.20	*-5.21*	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	69.4	66.4	64.9	72.2	72.5
Medium Trucks:	73.3	71.9	69.5	67.9	75.1	75.4
Heavy Trucks:	76.7	75.3	71.7	71.8	78.8	79.0
Vehicle Noise:	79.0	77.6	74.5	73.9	80.9	81.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	450	971	2,091	4,505
CNEL:	469	1,010	2,176	4,687

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025
Road Name: Euclid Av.
Road Segment: n/o SR-60 EB Ramps
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	41,994 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,347 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.51	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-6.05	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-7.96	2.47	-1.20	*-5.21*	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:	72.2	71.0	67.9	66.5	73.7	74.0
Medium Trucks:	74.7	73.3	70.9	69.2	76.4	76.7
Heavy Trucks:	77.6	76.1	72.6	72.7	79.7	79.9
Vehicle Noise:	80.1	78.7	75.6	75.0	82.0	82.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	533	1,149	2,475	5,332
CNEL:	555	1,196	2,576	5,551

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Walnut Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,442 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,542 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.76	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-5.80	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-7.71	2.47	-1.20	-5.21	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	71.2	68.2	66.7	74.0	74.3
Medium Trucks:	74.9	73.5	71.1	69.5	76.7	77.0
Heavy Trucks:	77.8	76.4	72.8	72.9	79.9	80.1
Vehicle Noise:	80.4	79.0	75.9	75.2	82.3	82.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	554	1,193	2,570	5,538
CNEL:	576	1,242	2,676	5,764

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Riverside Dr.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	41,929 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,342 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.51	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-6.06	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-7.96	2.47	-1.20	-5.21	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:	72.2	70.9	67.9	66.5	73.7	74.0
Medium Trucks:	74.7	73.3	70.9	69.2	76.4	76.7
Heavy Trucks:	77.6	76.1	72.6	72.7	79.7	79.9
Vehicle Noise:	80.1	78.7	75.6	75.0	82.0	82.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	533	1,148	2,473	5,327
CNEL:	554	1,195	2,574	5,545

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Chino Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,923 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,022 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.07	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-6.49	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.40	2.47	-1.20	-5.21	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	70.5	67.5	66.0	73.3	73.6
Medium Trucks:	74.2	72.8	70.5	68.8	76.0	76.3
Heavy Trucks:	77.1	75.7	72.2	72.3	79.2	79.4
Vehicle Noise:	79.7	78.3	75.2	74.5	81.6	81.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	498	1,073	2,312	4,982
CNEL:	519	1,117	2,407	5,186

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Schaefer Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,686 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,243 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.38	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-6.19	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.09	2.47	-1.20	-5.21	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	70.8	67.8	66.3	73.6	73.9
Medium Trucks:	74.5	73.1	70.8	69.1	76.3	76.6
Heavy Trucks:	77.4	76.0	72.5	72.6	79.5	79.8
Vehicle Noise:	80.0	78.6	75.5	74.8	81.9	82.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	522	1,125	2,423	5,221
CNEL:	543	1,171	2,523	5,435

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Edison Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	42,939 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,422 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.61	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-5.95	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-7.86	2.47	-1.20	-5.21	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	71.0	68.0	66.6	73.8	74.1
Medium Trucks:	74.8	73.4	71.0	69.3	76.5	76.8
Heavy Trucks:	77.7	76.2	72.7	72.8	79.8	80.0
Vehicle Noise:	80.2	78.8	75.7	75.1	82.1	82.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	541	1,166	2,512	5,412
CNEL:	563	1,214	2,615	5,634

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Eucalyptus Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,317 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,213 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.34	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-6.23	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.13	2.47	-1.20	-5.21	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:	72.0	70.8	67.7	66.3	73.6	73.9
Medium Trucks:	74.5	73.1	70.7	69.1	76.2	76.5
Heavy Trucks:	77.4	76.0	72.4	72.5	79.5	79.7
Vehicle Noise:	79.9	78.6	75.5	74.8	81.9	82.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	519	1,118	2,409	5,190
CNEL:	540	1,164	2,507	5,402

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Merrill Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,448 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,224 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.48	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-7.08	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.99	2.47	-1.20	-5.21	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:	74.5	73.2	70.2	68.8	76.0	76.3
Medium Trucks:	76.6	75.2	72.8	71.2	78.3	78.6
Heavy Trucks:	78.7	77.3	73.7	73.8	80.8	81.0
Vehicle Noise:	81.7	80.3	77.3	76.5	83.6	83.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	675	1,453	3,131	6,746
CNEL:	703	1,514	3,261	7,027

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Kimball Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	41,956 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,344 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.64	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-6.92	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.83	2.47	-1.20	-5.21	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:	74.6	73.4	70.4	68.9	76.2	76.5
Medium Trucks:	76.8	75.4	73.0	71.3	78.5	78.8
Heavy Trucks:	78.8	77.4	73.9	74.0	80.9	81.2
Vehicle Noise:	81.8	80.5	77.4	76.7	83.7	84.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	691	1,489	3,208	6,912
CNEL:	720	1,551	3,342	7,200

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Bickmore Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,843 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,299 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.01	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.55	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.46	2.47	-1.20	-5.21	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:	73.0	71.8	68.7	67.3	74.6	74.9
Medium Trucks:	75.1	73.7	71.3	69.7	76.9	77.2
Heavy Trucks:	77.2	75.8	72.2	72.3	79.3	79.5
Vehicle Noise:	80.2	78.8	75.8	75.0	82.1	82.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	538	1,160	2,499	5,384
CNEL:	561	1,208	2,603	5,608

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Pine Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,789 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,215 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.15	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.71	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.62	2.47	-1.20	-5.21	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	71.6	68.6	67.1	74.4	74.7
Medium Trucks:	75.0	73.6	71.2	69.5	76.7	77.0
Heavy Trucks:	77.0	75.6	72.1	72.2	79.1	79.4
Vehicle Noise:	80.1	78.7	75.6	74.9	81.9	82.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	525	1,132	2,438	5,252
CNEL:	547	1,179	2,539	5,471

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: s/o Pine Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,245 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,765 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.15	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-6.41	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.32	2.47	-1.20	-5.21	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:	75.2	73.9	70.9	69.4	76.7	77.0
Medium Trucks:	77.3	75.9	73.5	71.8	79.0	79.3
Heavy Trucks:	79.3	77.9	74.4	74.5	81.4	81.7
Vehicle Noise:	82.4	81.0	77.9	77.2	84.2	84.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	748	1,612	3,473	7,482
CNEL:	779	1,679	3,617	7,793

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o SR-60

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,985 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,107 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.19	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-6.37	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.28	0.61	-1.20	-5.34	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:	70.0	68.8	65.8	64.3	71.6	71.9
Medium Trucks:	72.5	71.1	68.7	67.1	74.2	74.5
Heavy Trucks:	75.4	74.0	70.4	70.5	77.5	77.7
Vehicle Noise:	77.9	76.6	73.5	72.8	79.9	80.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	273	587	1,266	2,727
CNEL:	284	611	1,317	2,838

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o SR-60 EB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,147 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,562 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.35	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.21	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.12	0.61	-1.20	*-5.34*	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	68.0	64.9	63.5	70.7	71.0
Medium Trucks:	71.7	70.3	67.9	66.2	73.4	73.7
Heavy Trucks:	74.5	73.1	69.6	69.7	76.6	76.9
Vehicle Noise:	77.1	75.7	72.6	72.0	79.0	79.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	240	517	1,113	2,398
CNEL:	250	538	1,158	2,496

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o Walnut Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,946 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,068 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.42	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-8.14	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.05	0.61	-1.20	*-5.34*	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	67.0	64.0	62.5	69.8	70.1
Medium Trucks:	70.7	69.3	66.9	65.3	72.5	72.8
Heavy Trucks:	73.6	72.2	68.7	68.7	75.7	75.9
Vehicle Noise:	76.2	74.8	71.7	71.0	78.1	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	208	448	965	2,078
CNEL:	216	466	1,004	2,164

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o Riverside Dr.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,365 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,464 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.08	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-9.64	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-11.55	0.61	-1.20	*-5.34*	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:	66.8	65.5	62.5	61.0	68.3	68.6
Medium Trucks:	69.2	67.8	65.4	63.8	71.0	71.3
Heavy Trucks:	72.1	70.7	67.1	67.2	74.2	74.4
Vehicle Noise:	74.7	73.3	70.2	69.5	76.6	76.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	165	356	766	1,651
CNEL:	172	370	798	1,718

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o Chino Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,619 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,006 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.17	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-11.73	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-13.64	1.46	-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:	67.3	66.0	63.0	61.5	68.8	69.1
Medium Trucks:	69.5	68.1	65.8	64.1	71.3	71.6
Heavy Trucks:	72.0	70.6	67.0	67.1	74.1	74.3
Vehicle Noise:	74.8	73.4	70.3	69.6	76.7	77.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	140	301	649	1,397
CNEL:	146	313	675	1,455

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o Schaefer Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,503 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	917 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.57	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-12.13	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.04	1.46	-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:	66.9	65.6	62.6	61.1	68.4	68.7
Medium Trucks:	69.1	67.7	65.4	63.7	70.9	71.2
Heavy Trucks:	71.6	70.2	66.6	66.7	73.7	73.9
Vehicle Noise:	74.4	73.0	69.9	69.2	76.3	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	283	610	1,314
CNEL:	137	295	635	1,368

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o Edison Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,237 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	816 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.07	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-12.64	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.54	1.46	-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:	66.4	65.1	62.1	60.6	67.9	68.2
Medium Trucks:	68.6	67.2	64.9	63.2	70.4	70.7
Heavy Trucks:	71.1	69.7	66.1	66.2	73.2	73.4
Vehicle Noise:	73.9	72.5	69.4	68.7	75.8	76.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	122	262	564	1,215
CNEL:	127	273	587	1,266

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o Eucalyptus Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,440 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	912 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.59	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-12.15	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.06	1.46	-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:	66.8	65.6	62.6	61.1	68.4	68.7
Medium Trucks:	69.1	67.7	65.3	63.7	70.8	71.2
Heavy Trucks:	71.6	70.2	66.6	66.7	73.7	73.9
Vehicle Noise:	74.4	73.0	69.9	69.2	76.3	76.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	282	608	1,309
CNEL:	136	294	633	1,363

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o Street A

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,350 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	586 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.51	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-14.08	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.98	1.46	-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:	64.9	63.7	60.6	59.2	66.5	66.8
Medium Trucks:	67.2	65.8	63.4	61.8	68.9	69.2
Heavy Trucks:	69.7	68.2	64.7	64.8	71.8	72.0
Vehicle Noise:	72.4	71.1	68.0	67.3	74.3	74.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	210	452	975
CNEL:	101	219	471	1,015

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025
Road Name: Grove Av.
Road Segment: n/o Merrill Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,350 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	586 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.51	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-14.08	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-15.98	1.46	-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:	64.9	63.7	60.6	59.2	66.5	66.8
Medium Trucks:	67.2	65.8	63.4	61.8	68.9	69.2
Heavy Trucks:	69.7	68.2	64.7	64.8	71.8	72.0
Vehicle Noise:	72.4	71.1	68.0	67.3	74.3	74.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	210	452	975
CNEL:	101	219	471	1,015

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025
Road Name: Archibald Av.
Road Segment: n/o SR-60
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,402 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,503 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.79	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-7.77	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.68	0.61	-1.20	*-5.34*	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	69.1	66.1	64.7	71.9	72.2
Medium Trucks:	72.6	71.3	68.9	67.2	74.4	74.7
Heavy Trucks:	75.1	73.7	70.1	70.2	77.2	77.4
Vehicle Noise:	77.9	76.5	73.5	72.7	79.8	80.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	270	582	1,255	2,703
CNEL:	281	606	1,307	2,815

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025
Road Name: Archibald Av.
Road Segment: n/o SR-60 EB Ramps
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,233 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,649 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.04	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-7.52	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.43	0.61	-1.20	*-5.34*	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	69.4	66.4	64.9	72.2	72.5
Medium Trucks:	72.9	71.5	69.1	67.5	74.6	74.9
Heavy Trucks:	75.4	73.9	70.4	70.5	77.5	77.7
Vehicle Noise:	78.2	76.8	73.7	73.0	80.1	80.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	281	605	1,303	2,807
CNEL:	292	630	1,357	2,923

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025
Road Name: Archibald Av.
Road Segment: n/o Riverside Dr.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,160 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,244 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.32	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-8.24	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.15	0.61	-1.20	*-5.34*	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	68.7	65.6	64.2	71.5	71.7
Medium Trucks:	72.2	70.8	68.4	66.7	73.9	74.2
Heavy Trucks:	74.6	73.2	69.7	69.8	76.7	77.0
Vehicle Noise:	77.4	76.1	73.0	72.3	79.3	79.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	251	542	1,167	2,514
CNEL:	262	564	1,215	2,618

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | *Project Name:* Merrill Commerce Center
Road Name: Archibald Av. | *Job Number:* 12005
Road Segment: n/o Chino Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,875	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,461	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	0.72	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-7.84	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.75	0.61	-1.20	*-5.34*	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	69.1	66.0	64.6	71.9	72.1
Medium Trucks:	72.6	71.2	68.8	67.1	74.3	74.6
Heavy Trucks:	75.0	73.6	70.1	70.2	77.1	77.4
Vehicle Noise:	77.8	76.5	73.4	72.7	79.7	80.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	267	576	1,241	2,673
CNEL:	278	600	1,292	2,783

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | *Project Name:* Merrill Commerce Center
Road Name: Archibald Av. | *Job Number:* 12005
Road Segment: n/o Schaefer Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,607	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,041	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-0.51	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-9.07	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.98	0.61	-1.20	*-5.34*	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	69.4	66.4	64.9	72.2	72.5
Medium Trucks:	72.7	71.4	69.0	67.3	74.5	74.8
Heavy Trucks:	74.8	73.4	69.9	70.0	76.9	77.2
Vehicle Noise:	77.8	76.5	73.4	72.7	79.7	80.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	267	576	1,241	2,673
CNEL:	278	600	1,292	2,784

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | *Project Name:* Merrill Commerce Center
Road Name: Archibald Av. | *Job Number:* 12005
Road Segment: n/o Edison Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,607	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,041	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-0.51	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-9.07	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.98	0.61	-1.20	*-5.34*	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	69.4	66.4	64.9	72.2	72.5
Medium Trucks:	72.7	71.4	69.0	67.3	74.5	74.8
Heavy Trucks:	74.8	73.4	69.9	70.0	76.9	77.2
Vehicle Noise:	77.8	76.5	73.4	72.7	79.7	80.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	267	576	1,241	2,673
CNEL:	278	600	1,292	2,784

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | *Project Name:* Merrill Commerce Center
Road Name: Archibald Av. | *Job Number:* 12005
Road Segment: n/o Eucalyptus Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,545	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,594	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	0.53	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-8.03	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.94	0.61	-1.20	*-5.34*	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	70.5	67.4	66.0	73.2	73.5
Medium Trucks:	73.8	72.4	70.0	68.4	75.5	75.8
Heavy Trucks:	75.9	74.5	70.9	71.0	78.0	78.2
Vehicle Noise:	78.9	77.5	74.5	73.7	80.8	81.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	314	676	1,456	3,136
CNEL:	327	704	1,516	3,266

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | *Project Name:* Merrill Commerce Center
Road Name: Archibald Av. | *Job Number:* 12005
Road Segment: n/o Merrill Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,321	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,576	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	0.50	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-8.06	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.97	0.61	-1.20	*-5.34*	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	70.4	67.4	65.9	73.2	73.5
Medium Trucks:	73.8	72.4	70.0	68.3	75.5	75.8
Heavy Trucks:	75.8	74.4	70.9	71.0	77.9	78.2
Vehicle Noise:	78.9	77.5	74.4	73.7	80.7	81.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	312	672	1,449	3,121
CNEL:	325	700	1,509	3,251

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | *Project Name:* Merrill Commerce Center
Road Name: Archibald Av. | *Job Number:* 12005
Road Segment: n/o Limonite Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,479	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,589	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	0.53	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-8.04	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.94	0.61	-1.20	*-5.34*	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	70.4	67.4	66.0	73.2	73.5
Medium Trucks:	73.8	72.4	70.0	68.4	75.5	75.8
Heavy Trucks:	75.9	74.4	70.9	71.0	78.0	78.2
Vehicle Noise:	78.9	77.5	74.4	73.7	80.8	81.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	313	675	1,454	3,132
CNEL:	326	703	1,514	3,262

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | *Project Name:* Merrill Commerce Center
Road Name: Archibald Av. | *Job Number:* 12005
Road Segment: n/o Schleisman Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,501	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,511	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	120	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	110.0	feet
Centerline Dist. to Observer:	110.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	92.331
Medium Trucks:	92.235
Heavy Trucks:	92.244

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	0.81	-4.10	-1.20	*-4.78*	0.000	0.000
Medium Trucks:	81.00	-7.75	-4.09	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.66	-4.09	-1.20	*-5.14*	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:	65.7	64.5	61.4	60.0	67.3	67.6
Medium Trucks:	68.0	66.6	64.2	62.5	69.7	70.0
Heavy Trucks:	70.4	69.0	65.5	65.6	72.5	72.8
Vehicle Noise:	73.2	71.8	68.8	68.0	75.1	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	241	520	1,121	2,414
CNEL:	251	542	1,167	2,514

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | *Project Name:* Merrill Commerce Center
Road Name: Archibald Av. | *Job Number:* 12005
Road Segment: s/o Schleisman Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,423	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,106	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	120	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	110.0	feet
Centerline Dist. to Observer:	110.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	92.331
Medium Trucks:	92.235
Heavy Trucks:	92.244

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	0.04	-4.10	-1.20	*-4.78*	0.000	0.000
Medium Trucks:	81.00	-8.52	-4.09	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.43	-4.09	-1.20	*-5.14*	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:	64.9	63.7	60.7	59.2	66.5	66.8
Medium Trucks:	67.2	65.8	63.4	61.8	68.9	69.2
Heavy Trucks:	69.7	68.2	64.7	64.8	71.8	72.0
Vehicle Noise:	72.5	71.1	68.0	67.3	74.4	74.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	215	463	997	2,147
CNEL:	224	482	1,038	2,236

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: w/o Pipeline Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,573 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,074 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.14	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-6.42	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.33	0.37	-1.20	-5.34	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:	69.7	68.5	65.5	64.0	71.3	71.6
Medium Trucks:	72.2	70.8	68.4	66.8	73.9	74.3
Heavy Trucks:	75.1	73.7	70.1	70.2	77.2	77.4
Vehicle Noise:	77.7	76.3	73.2	72.5	79.6	79.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	261	562	1,211	2,608
CNEL:	271	585	1,260	2,715

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: w/o Ramona Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,989 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,629 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.47	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-7.10	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.00	0.37	-1.20	-5.34	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:	69.1	67.8	64.8	63.3	70.6	70.9
Medium Trucks:	71.5	70.1	67.7	66.1	73.3	73.6
Heavy Trucks:	74.4	73.0	69.5	69.5	76.5	76.7
Vehicle Noise:	77.0	75.6	72.5	71.8	78.9	79.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	235	506	1,091	2,350
CNEL:	245	527	1,135	2,446

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: w/o Central Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,201 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,168 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.63	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-7.93	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.84	0.37	-1.20	-5.34	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:	68.2	67.0	64.0	62.5	69.8	70.1
Medium Trucks:	70.7	69.3	66.9	65.3	72.4	72.7
Heavy Trucks:	73.6	72.2	68.6	68.7	75.7	75.9
Vehicle Noise:	76.1	74.8	71.7	71.0	78.1	78.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	207	445	959	2,066
CNEL:	215	463	998	2,151

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: w/o Mountain Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,582 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,517 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.28	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-7.29	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.19	0.37	-1.20	-5.34	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:	68.9	67.6	64.6	63.2	70.4	70.7
Medium Trucks:	71.3	69.9	67.6	65.9	73.1	73.4
Heavy Trucks:	74.2	72.8	69.3	69.4	76.3	76.6
Vehicle Noise:	76.8	75.4	72.3	71.6	78.7	79.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	228	492	1,059	2,283
CNEL:	238	512	1,103	2,376

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: w/o San Antonio Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,975 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,150 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.59	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-7.97	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.88	0.37	-1.20	-5.34	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:	68.2	67.0	63.9	62.5	69.7	70.0
Medium Trucks:	70.6	69.3	66.9	65.2	72.4	72.7
Heavy Trucks:	73.5	72.1	68.6	68.7	75.6	75.9
Vehicle Noise:	76.1	74.7	71.6	71.0	78.0	78.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	205	443	954	2,055
CNEL:	214	461	993	2,139

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: w/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,096 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,761 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.28	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-8.84	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.75	0.37	-1.20	-5.34	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:	67.3	66.1	63.1	61.6	68.9	69.2
Medium Trucks:	69.8	68.4	66.0	64.4	71.5	71.8
Heavy Trucks:	72.7	71.3	67.7	67.8	74.8	75.0
Vehicle Noise:	75.2	73.9	70.8	70.1	77.2	77.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	180	388	835	1,799
CNEL:	187	403	869	1,873

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: e/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,152 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,128 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.67	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-11.23	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-13.14	2.47	-1.20	-5.21	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	67.5	64.5	63.0	70.3	70.6
Medium Trucks:	71.0	69.6	67.3	65.6	72.8	73.1
Heavy Trucks:	73.5	72.1	68.5	68.6	75.6	75.8
Vehicle Noise:	76.3	74.9	71.8	71.1	78.2	78.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	296	637	1,373	2,957
CNEL:	308	663	1,429	3,079

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: w/o Grove Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,857 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	945 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.44	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-12.00	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-13.91	2.47	-1.20	-5.21	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:	68.0	66.7	63.7	62.3	69.5	69.8
Medium Trucks:	70.3	68.9	66.5	64.8	72.0	72.3
Heavy Trucks:	72.7	71.3	67.8	67.9	74.8	75.1
Vehicle Noise:	75.5	74.2	71.1	70.4	77.4	77.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	263	566	1,220	2,628
CNEL:	274	590	1,270	2,737

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: w/o Walker Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,173 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,209 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.37	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-10.93	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.84	2.47	-1.20	-5.21	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:	69.1	67.8	64.8	63.3	70.6	70.9
Medium Trucks:	71.3	70.0	67.6	65.9	73.1	73.4
Heavy Trucks:	73.8	72.4	68.8	68.9	75.9	76.1
Vehicle Noise:	76.6	75.2	72.1	71.4	78.5	78.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	310	667	1,438	3,098
CNEL:	323	695	1,497	3,226

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: w/o Archibald Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,647 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,247 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.23	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-10.79	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.70	2.47	-1.20	-5.21	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	68.0	64.9	63.5	70.7	71.0
Medium Trucks:	71.5	70.1	67.7	66.1	73.2	73.5
Heavy Trucks:	73.9	72.5	69.0	69.1	76.0	76.3
Vehicle Noise:	76.7	75.4	72.3	71.6	78.6	78.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	316	681	1,468	3,162
CNEL:	329	709	1,528	3,292

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: w/o Haven Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,780 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,975 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.23	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-8.80	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-10.71	2.47	-1.20	-5.21	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	69.9	66.9	65.5	72.7	73.0
Medium Trucks:	73.5	72.1	69.7	68.1	75.2	75.5
Heavy Trucks:	75.9	74.5	71.0	71.1	78.0	78.3
Vehicle Noise:	78.7	77.4	74.3	73.6	80.6	80.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	430	926	1,994	4,296
CNEL:	447	964	2,076	4,473

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: e/o Haven Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,510 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,033 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.11	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-8.67	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-10.58	2.47	-1.20	-5.21	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	70.1	67.0	65.6	72.9	73.2
Medium Trucks:	73.6	72.2	69.8	68.2	75.3	75.7
Heavy Trucks:	76.1	74.6	71.1	71.2	78.2	78.4
Vehicle Noise:	78.9	77.5	74.4	73.7	80.8	81.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	438	944	2,033	4,380
CNEL:	456	983	2,117	4,561

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Ontario Ranch Rd. | Job Number: 12005
Road Segment: e/o Hamner Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,454 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,985 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	1.56	-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	-8.91	-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	67.5	64.4	63.0	70.3	70.5
Medium Trucks:	71.0	69.6	67.2	65.5	72.7	73.0
Heavy Trucks:	73.4	72.0	68.5	68.6	75.5	75.8
Vehicle Noise:	76.2	74.8	71.8	71.1	78.1	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	264	570	1,227	2,644
CNEL:	275	593	1,278	2,753

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Eucalyptus Av. | Job Number: 12005
Road Segment: w/o Bon View Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,959 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	395 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-6.25	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-14.81	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-16.72	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:	60.3	59.1	56.1	54.6	61.9	62.2
Medium Trucks:	63.0	61.6	59.2	57.6	64.7	65.1
Heavy Trucks:	66.4	65.0	61.4	61.5	68.5	68.7
Vehicle Noise:	68.7	67.3	64.2	63.6	70.6	70.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	225	485
CNEL:	50	109	234	505

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Eucalyptus Av. | Job Number: 12005
Road Segment: w/o Walker Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,408 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	192 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-9.39	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-17.95	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-19.86	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:	57.2	56.0	52.9	51.5	58.7	59.0
Medium Trucks:	59.9	58.5	56.1	54.5	61.6	61.9
Heavy Trucks:	63.2	61.8	58.3	58.4	65.3	65.6
Vehicle Noise:	65.6	64.2	61.1	60.4	67.5	67.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	139	300
CNEL:	31	67	145	312

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Eucalyptus Av. | Job Number: 12005
Road Segment: e/o Walker Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,571 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	205 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-9.11	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-17.67	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-19.58	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:	57.5	56.2	53.2	51.8	59.0	59.3
Medium Trucks:	60.2	58.8	56.4	54.7	61.9	62.2
Heavy Trucks:	63.5	62.1	58.6	58.7	65.6	65.9
Vehicle Noise:	65.9	64.5	61.3	60.7	67.8	68.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	145	313
CNEL:	33	70	151	326

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025
Road Name: Eucalyptus Av.
Road Segment: w/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,571 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	205 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-9.11	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-17.67	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-19.58	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:	57.5	56.2	53.2	51.8	59.0	59.3
Medium Trucks:	60.2	58.8	56.4	54.7	61.9	62.2
Heavy Trucks:	63.5	62.1	58.6	58.7	65.6	65.9
Vehicle Noise:	65.9	64.5	61.3	60.7	67.8	68.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	145	313
CNEL:	33	70	151	326

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025
Road Name: Eucalyptus Av.
Road Segment: e/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,571 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	205 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-9.11	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-17.67	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-19.58	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:	57.5	56.2	53.2	51.8	59.0	59.3
Medium Trucks:	60.2	58.8	56.4	54.7	61.9	62.2
Heavy Trucks:	63.5	62.1	58.6	58.7	65.6	65.9
Vehicle Noise:	65.9	64.5	61.3	60.7	67.8	68.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	145	313
CNEL:	33	70	151	326

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025
Road Name: Merrill Av.
Road Segment: e/o Euclid Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,914 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,109 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-2.74	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.30	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:	67.5	66.3	63.3	61.8	69.1	69.4
Medium Trucks:	69.8	68.4	66.0	64.4	71.5	71.9
Heavy Trucks:	72.3	70.9	67.3	67.4	74.4	74.6
Vehicle Noise:	75.1	73.7	70.6	69.9	77.0	77.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	128	276	595	1,283
CNEL:	134	288	620	1,335

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025
Road Name: Merrill Av.
Road Segment: w/o Grove Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,891 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,267 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-2.16	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.73	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.63	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:	68.1	66.9	63.8	62.4	69.7	70.0
Medium Trucks:	70.4	69.0	66.6	65.0	72.1	72.4
Heavy Trucks:	72.9	71.4	67.9	68.0	75.0	75.2
Vehicle Noise:	75.6	74.3	71.2	70.5	77.5	77.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	140	302	650	1,401
CNEL:	146	314	677	1,459

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | *Project Name:* Merrill Commerce Center
Road Name: Merrill Av. | *Job Number:* 12005
Road Segment: e/o Grove Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,127 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,285 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-2.10	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-10.66	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-12.57	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:	68.2	66.9	63.9	62.5	69.7	70.0
Medium Trucks:	70.4	69.1	66.7	65.0	72.2	72.5
Heavy Trucks:	72.9	71.5	68.0	68.0	75.0	75.2
Vehicle Noise:	75.7	74.3	71.3	70.5	77.6	77.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	305	657	1,415
CNEL:	147	317	684	1,474

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | *Project Name:* Merrill Commerce Center
Road Name: Merrill Av. | *Job Number:* 12005
Road Segment: e/o Walker Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,634 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,405 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-1.71	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-10.27	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-12.18	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:	68.6	67.3	64.3	62.8	70.1	70.4
Medium Trucks:	70.8	69.4	67.1	65.4	72.6	72.9
Heavy Trucks:	73.3	71.9	68.3	68.4	75.4	75.6
Vehicle Noise:	76.1	74.7	71.6	70.9	78.0	78.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	150	324	697	1,502
CNEL:	156	337	726	1,564

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | *Project Name:* Merrill Commerce Center
Road Name: Merrill Av. | *Job Number:* 12005
Road Segment: w/o Vineyard Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,104 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,363 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-1.85	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	-12.32	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	67.2	64.2	62.7	70.0	70.3
Medium Trucks:	70.7	69.3	66.9	65.3	72.4	72.8
Heavy Trucks:	73.2	71.8	68.2	68.3	75.3	75.5
Vehicle Noise:	76.0	74.6	71.5	70.8	77.9	78.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	147	317	683	1,472
CNEL:	153	330	711	1,532

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | *Project Name:* Merrill Commerce Center
Road Name: Merrill Av. | *Job Number:* 12005
Road Segment: e/o Vineyard Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,731 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,493 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-1.45	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-10.01	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-11.92	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	67.6	64.6	63.1	70.4	70.7
Medium Trucks:	71.1	69.7	67.3	65.7	72.8	73.2
Heavy Trucks:	73.6	72.1	68.6	68.7	75.7	75.9
Vehicle Noise:	76.4	75.0	71.9	71.2	78.3	78.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	156	337	726	1,564
CNEL:	163	351	756	1,628

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Limonite | Job Number: 12005
Road Segment: e/o Archibald Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,326 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,939 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	0.14	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-8.42	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.33	-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:	65.5	64.3	61.3	59.8	67.1	67.4
Medium Trucks:	68.0	66.6	64.2	62.6	69.7	70.0
Heavy Trucks:	70.9	69.5	65.9	66.0	73.0	73.2
Vehicle Noise:	73.5	72.1	69.0	68.3	75.4	75.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	173	373	804	1,732
CNEL:	180	388	837	1,802

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Limonite | Job Number: 12005
Road Segment: w/o Sumner Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,117 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,082 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	0.45	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-8.11	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.02	-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:	65.9	64.6	61.6	60.1	67.4	67.7
Medium Trucks:	68.3	66.9	64.5	62.9	70.0	70.3
Heavy Trucks:	71.2	69.8	66.2	66.3	73.3	73.5
Vehicle Noise:	73.8	72.4	69.3	68.6	75.7	75.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	182	391	843	1,815
CNEL:	189	407	877	1,890

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Limonite | Job Number: 12005
Road Segment: w/o Scholar Wy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,611 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,041 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	0.37	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-8.20	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.10	-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:	65.8	64.5	61.5	60.1	67.3	67.6
Medium Trucks:	68.2	66.8	64.4	62.8	69.9	70.3
Heavy Trucks:	71.1	69.7	66.1	66.2	73.2	73.4
Vehicle Noise:	73.7	72.3	69.2	68.5	75.6	75.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	179	386	832	1,792
CNEL:	187	402	866	1,865

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Limonite | Job Number: 12005
Road Segment: w/o Hamner Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,245 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,092 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	0.47	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-8.09	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.00	-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:	65.9	64.6	61.6	60.2	67.4	67.7
Medium Trucks:	68.3	66.9	64.5	62.9	70.1	70.4
Heavy Trucks:	71.2	69.8	66.2	66.3	73.3	73.5
Vehicle Noise:	73.8	72.4	69.3	68.6	75.7	76.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	182	392	845	1,821
CNEL:	190	408	880	1,896

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025 | Project Name: Merrill Commerce Center
Road Name: Limonite | Job Number: 12005
Road Segment: e/o Hamner Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,472 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,190 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	0.67	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-7.89	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.80	-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:	66.1	64.8	61.8	60.4	67.6	67.9
Medium Trucks:	68.5	67.1	64.7	63.1	70.3	70.6
Heavy Trucks:	71.4	70.0	66.4	66.5	73.5	73.7
Vehicle Noise:	74.0	72.6	69.5	68.8	75.9	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	188	405	872	1,878
CNEL:	195	421	907	1,955

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o SR-60

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,890 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,259 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.42%
Medium Trucks:	69.4%	10.0%	20.6%	11.30%
Heavy Trucks:	69.0%	7.6%	23.4%	7.28%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.91	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	77.72	-5.67	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-7.57	2.47	-1.20	-5.21	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	69.4	66.4	64.9	72.2	72.5
Medium Trucks:	73.3	71.9	69.5	67.9	75.1	75.4
Heavy Trucks:	76.7	75.3	71.7	71.8	78.8	79.0
Vehicle Noise:	79.0	77.6	74.5	73.9	80.9	81.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	451	971	2,092	4,506
CNEL:	469	1,010	2,176	4,689

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o SR-60 EB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	43,582 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,474 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.06%
Medium Trucks:	69.4%	10.0%	20.6%	11.74%
Heavy Trucks:	69.0%	7.6%	23.4%	8.20%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.60	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-5.73	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-7.29	2.47	-1.20	-5.21	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	71.0	68.0	66.6	73.8	74.1
Medium Trucks:	75.0	73.6	71.2	69.6	76.7	77.0
Heavy Trucks:	78.2	76.8	73.3	73.4	80.3	80.6
Vehicle Noise:	80.6	79.2	76.1	75.5	82.5	82.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	575	1,239	2,668	5,749
CNEL:	598	1,289	2,777	5,982

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Walnut Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	46,151 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,678 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.18%
Medium Trucks:	69.4%	10.0%	20.6%	11.69%
Heavy Trucks:	69.0%	7.6%	23.4%	8.13%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.86	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-5.50	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-7.08	2.47	-1.20	-5.21	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:	72.5	71.3	68.3	66.8	74.1	74.4
Medium Trucks:	75.2	73.8	71.4	69.8	77.0	77.3
Heavy Trucks:	78.4	77.0	73.5	73.6	80.5	80.8
Vehicle Noise:	80.8	79.4	76.3	75.7	82.8	83.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	595	1,282	2,761	5,949
CNEL:	619	1,334	2,873	6,190

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Euclid Av.
Road Segment: n/o Riverside Dr.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	43,759	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,488	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.17%
Medium Trucks:	69.4%	10.0%	20.6%	11.68%
Heavy Trucks:	69.0%	7.6%	23.4%	8.16%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.63	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-5.74	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-7.30	2.47	-1.20	-5.21	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	71.1	68.0	66.6	73.9	74.1
Medium Trucks:	75.0	73.6	71.2	69.6	76.7	77.0
Heavy Trucks:	78.2	76.8	73.3	73.4	80.3	80.5
Vehicle Noise:	80.6	79.2	76.1	75.5	82.5	82.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	575	1,238	2,668	5,747
CNEL:	598	1,288	2,776	5,981

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Euclid Av.
Road Segment: n/o Chino Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,115	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,197	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.23%
Medium Trucks:	69.4%	10.0%	20.6%	11.60%
Heavy Trucks:	69.0%	7.6%	23.4%	8.17%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.25	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-6.14	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-7.67	2.47	-1.20	-5.21	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	70.7	67.7	66.2	73.5	73.8
Medium Trucks:	74.6	73.2	70.8	69.2	76.3	76.6
Heavy Trucks:	77.8	76.4	72.9	73.0	80.0	80.2
Vehicle Noise:	80.2	78.8	75.7	75.1	82.1	82.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	542	1,168	2,516	5,421
CNEL:	564	1,215	2,618	5,641

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Euclid Av.
Road Segment: n/o Schaefer Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	42,998	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,427	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.36%
Medium Trucks:	69.4%	10.0%	20.6%	11.55%
Heavy Trucks:	69.0%	7.6%	23.4%	8.09%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.56	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-5.86	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-7.41	2.47	-1.20	-5.21	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:	72.2	71.0	68.0	66.5	73.8	74.1
Medium Trucks:	74.9	73.5	71.1	69.4	76.6	76.9
Heavy Trucks:	78.1	76.7	73.1	73.2	80.2	80.4
Vehicle Noise:	80.5	79.1	76.0	75.4	82.4	82.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	565	1,218	2,624	5,653
CNEL:	588	1,267	2,730	5,882

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Euclid Av.
Road Segment: n/o Edison Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,372	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,616	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.46%
Medium Trucks:	69.4%	10.0%	20.6%	11.51%
Heavy Trucks:	69.0%	7.6%	23.4%	8.03%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.80	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-5.64	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-7.21	2.47	-1.20	-5.21	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:	72.5	71.2	68.2	66.8	74.0	74.3
Medium Trucks:	75.1	73.7	71.3	69.7	76.8	77.1
Heavy Trucks:	78.3	76.9	73.3	73.4	80.4	80.6
Vehicle Noise:	80.7	79.3	76.2	75.6	82.6	82.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	584	1,258	2,710	5,838
CNEL:	608	1,309	2,820	6,075

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Euclid Av.
Road Segment: n/o Eucalyptus Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	41,665 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,321 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	79.89%
Medium Trucks:	69.4%	10.0%	20.6%	11.82%
Heavy Trucks:	69.0%	7.6%	23.4%	8.28%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.40	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-5.90	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-7.44	2.47	-1.20	-5.21	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	70.8	67.8	66.4	73.6	73.9
Medium Trucks:	74.8	73.4	71.0	69.4	76.6	76.9
Heavy Trucks:	78.1	76.7	73.1	73.2	80.2	80.4
Vehicle Noise:	80.4	79.1	75.9	75.3	82.4	82.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	561	1,208	2,603	5,608
CNEL:	584	1,257	2,709	5,835

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Euclid Av.
Road Segment: n/o Merrill Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	41,313 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,293 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	79.66%
Medium Trucks:	69.4%	10.0%	20.6%	11.96%
Heavy Trucks:	69.0%	7.6%	23.4%	8.38%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.48	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-6.76	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.30	2.47	-1.20	-5.21	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:	74.5	73.2	70.2	68.8	76.0	76.3
Medium Trucks:	76.9	75.5	73.1	71.5	78.7	79.0
Heavy Trucks:	79.4	77.9	74.4	74.5	81.5	81.7
Vehicle Noise:	82.1	80.8	77.7	77.0	84.0	84.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	725	1,561	3,364	7,247
CNEL:	755	1,626	3,503	7,546

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Euclid Av.
Road Segment: n/o Kimball Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	43,617 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,476 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.76%
Medium Trucks:	69.4%	10.0%	20.6%	11.45%
Heavy Trucks:	69.0%	7.6%	23.4%	7.80%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.77	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-6.71	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.38	2.47	-1.20	-5.21	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:	74.8	73.5	70.5	69.1	76.3	76.6
Medium Trucks:	77.0	75.6	73.2	71.5	78.7	79.0
Heavy Trucks:	79.3	77.9	74.3	74.4	81.4	81.6
Vehicle Noise:	82.2	80.8	77.7	77.0	84.1	84.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	727	1,566	3,374	7,270
CNEL:	757	1,631	3,514	7,571

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Euclid Av.
Road Segment: n/o Bickmore Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,384 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,422 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.42%
Medium Trucks:	69.4%	10.0%	20.6%	11.54%
Heavy Trucks:	69.0%	7.6%	23.4%	8.04%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.19	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.25	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.81	2.47	-1.20	-5.21	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	71.9	68.9	67.5	74.7	75.0
Medium Trucks:	75.4	74.0	71.7	70.0	77.2	77.5
Heavy Trucks:	77.8	76.4	72.9	73.0	80.0	80.2
Vehicle Noise:	80.7	79.3	76.2	75.5	82.6	82.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	578	1,246	2,685	5,784
CNEL:	602	1,298	2,795	6,023

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Euclid Av.
Road Segment: n/o Pine Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,330	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,338	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	80.38%
Medium Trucks:	69.4%	10.0%	20.6%	11.55%
Heavy Trucks:	69.0%	7.6%	23.4%	8.07%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	0.03	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-8.40	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.95	2.47	-1.20	*-5.21*	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:	73.0	71.8	68.8	67.3	74.6	74.9
Medium Trucks:	75.3	73.9	71.5	69.9	77.0	77.3
Heavy Trucks:	77.7	76.3	72.7	72.8	79.8	80.0
Vehicle Noise:	80.5	79.1	76.1	75.4	82.4	82.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	566	1,219	2,625	5,656
CNEL:	589	1,269	2,734	5,890

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Euclid Av.
Road Segment: s/o Pine Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	48,785	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,888	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	80.77%
Medium Trucks:	69.4%	10.0%	20.6%	11.46%
Heavy Trucks:	69.0%	7.6%	23.4%	7.76%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	2.26	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-6.22	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-7.91	2.47	-1.20	*-5.21*	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:	75.3	74.0	71.0	69.5	76.8	77.1
Medium Trucks:	77.5	76.1	73.7	72.0	79.2	79.5
Heavy Trucks:	79.8	78.3	74.8	74.9	81.9	82.1
Vehicle Noise:	82.6	81.3	78.2	77.5	84.5	84.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	782	1,685	3,631	7,823
CNEL:	815	1,755	3,782	8,147

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Grove Av.
Road Segment: n/o SR-60
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,346	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,136	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.54%
Medium Trucks:	69.4%	10.0%	20.6%	11.23%
Heavy Trucks:	69.0%	7.6%	23.4%	7.23%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	2.24	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-6.37	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.28	0.61	-1.20	*-5.34*	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	68.8	65.8	64.4	71.6	71.9
Medium Trucks:	72.5	71.1	68.7	67.1	74.2	74.5
Heavy Trucks:	75.4	74.0	70.4	70.5	77.5	77.7
Vehicle Noise:	78.0	76.6	73.5	72.8	79.9	80.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	273	588	1,267	2,730
CNEL:	284	612	1,319	2,841

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Grove Av.
Road Segment: n/o SR-60 EB Ramps
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,871	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,620	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.78%
Medium Trucks:	69.4%	10.0%	20.6%	11.08%
Heavy Trucks:	69.0%	7.6%	23.4%	7.14%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.47	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.21	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.12	0.61	-1.20	*-5.34*	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	68.1	65.0	63.6	70.9	71.2
Medium Trucks:	71.7	70.3	67.9	66.2	73.4	73.7
Heavy Trucks:	74.5	73.1	69.6	69.7	76.6	76.9
Vehicle Noise:	77.1	75.7	72.7	72.0	79.0	79.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	240	518	1,116	2,404
CNEL:	250	539	1,162	2,503

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Grove Av.
Road Segment: n/o Walnut Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,911 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,145 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	82.03%
Medium Trucks:	69.4%	10.0%	20.6%	10.92%
Heavy Trucks:	69.0%	7.6%	23.4%	7.04%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.62	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-8.14	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.05	0.61	-1.20	-5.34	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	67.2	64.2	62.7	70.0	70.3
Medium Trucks:	70.7	69.3	66.9	65.3	72.5	72.8
Heavy Trucks:	73.6	72.2	68.7	68.7	75.7	75.9
Vehicle Noise:	76.2	74.8	71.7	71.1	78.1	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	209	450	969	2,088
CNEL:	217	468	1,009	2,173

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Grove Av.
Road Segment: n/o Riverside Dr.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,329 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,541 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	82.30%
Medium Trucks:	69.4%	10.0%	20.6%	10.77%
Heavy Trucks:	69.0%	7.6%	23.4%	6.94%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.81	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.64	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.55	0.61	-1.20	-5.34	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:	67.0	65.8	62.8	61.3	68.6	68.9
Medium Trucks:	69.2	67.8	65.4	63.8	71.0	71.3
Heavy Trucks:	72.1	70.7	67.1	67.2	74.2	74.4
Vehicle Noise:	74.7	73.3	70.2	69.6	76.6	76.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	166	358	771	1,661
CNEL:	173	373	803	1,729

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Grove Av.
Road Segment: n/o Chino Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,825 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,102 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	82.99%
Medium Trucks:	69.4%	10.0%	20.6%	10.34%
Heavy Trucks:	69.0%	7.6%	23.4%	6.67%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.68	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-11.73	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.64	1.46	-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:	67.7	66.5	63.5	62.0	69.3	69.6
Medium Trucks:	69.5	68.1	65.8	64.1	71.3	71.6
Heavy Trucks:	72.0	70.6	67.0	67.1	74.1	74.3
Vehicle Noise:	74.9	73.5	70.4	69.7	76.8	77.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	305	657	1,415
CNEL:	147	317	684	1,474

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Grove Av.
Road Segment: n/o Schaefer Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,708 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,013 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	83.13%
Medium Trucks:	69.4%	10.0%	20.6%	10.26%
Heavy Trucks:	69.0%	7.6%	23.4%	6.61%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.04	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-12.13	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.04	1.46	-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:	67.4	66.1	63.1	61.7	68.9	69.2
Medium Trucks:	69.1	67.7	65.4	63.7	70.9	71.2
Heavy Trucks:	71.6	70.2	66.6	66.7	73.7	73.9
Vehicle Noise:	74.5	73.1	70.0	69.3	76.4	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	133	287	618	1,332
CNEL:	139	299	644	1,387

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Grove Av.
Road Segment: n/o Edison Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,443 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	912 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	83.33%
Medium Trucks:	69.4%	10.0%	20.6%	10.14%
Heavy Trucks:	69.0%	7.6%	23.4%	6.53%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.49	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-12.64	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.54	1.46	-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:	66.9	65.7	62.7	61.2	68.5	68.8
Medium Trucks:	68.6	67.2	64.9	63.2	70.4	70.7
Heavy Trucks:	71.1	69.7	66.1	66.2	73.2	73.4
Vehicle Noise:	74.0	72.6	69.5	68.8	75.9	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	266	573	1,234
CNEL:	129	277	597	1,286

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Grove Av.
Road Segment: n/o Eucalyptus Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,178 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,210 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	85.96%
Medium Trucks:	69.4%	10.0%	20.6%	8.54%
Heavy Trucks:	69.0%	7.6%	23.4%	5.50%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.13	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-12.15	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.06	1.46	-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:	68.3	67.1	64.0	62.6	69.8	70.1
Medium Trucks:	69.1	67.7	65.3	63.7	70.8	71.2
Heavy Trucks:	71.6	70.2	66.6	66.7	73.7	73.9
Vehicle Noise:	74.7	73.3	70.2	69.5	76.5	76.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	137	294	634	1,365
CNEL:	142	306	660	1,422

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Grove Av.
Road Segment: n/o Street A
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,294 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	980 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	88.86%
Medium Trucks:	69.4%	10.0%	20.6%	6.77%
Heavy Trucks:	69.0%	7.6%	23.4%	4.37%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.90	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-14.08	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.98	1.46	-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:	67.5	66.3	63.3	61.8	69.1	69.4
Medium Trucks:	67.2	65.8	63.4	61.8	68.9	69.2
Heavy Trucks:	69.7	68.2	64.7	64.8	71.8	72.0
Vehicle Noise:	73.0	71.7	68.6	67.8	74.9	75.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	228	492	1,060
CNEL:	110	238	513	1,104

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Grove Av.
Road Segment: n/o Merrill Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,294 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	980 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	88.86%
Medium Trucks:	69.4%	10.0%	20.6%	6.77%
Heavy Trucks:	69.0%	7.6%	23.4%	4.37%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.90	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-14.08	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.98	1.46	-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:	67.5	66.3	63.3	61.8	69.1	69.4
Medium Trucks:	67.2	65.8	63.4	61.8	68.9	69.2
Heavy Trucks:	69.7	68.2	64.7	64.8	71.8	72.0
Vehicle Noise:	73.0	71.7	68.6	67.8	74.9	75.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	228	492	1,060
CNEL:	110	238	513	1,104

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Archibald Av.
Road Segment: n/o SR-60
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,523	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,512	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.44%
Medium Trucks:	69.4%	10.0%	20.6%	11.29%
Heavy Trucks:	69.0%	7.6%	23.4%	7.27%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	0.81	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-7.77	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.68	0.61	-1.20	*-5.34*	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	69.2	66.1	64.7	71.9	72.2
Medium Trucks:	72.6	71.3	68.9	67.2	74.4	74.7
Heavy Trucks:	75.1	73.7	70.1	70.2	77.2	77.4
Vehicle Noise:	77.9	76.5	73.5	72.7	79.8	80.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	270	583	1,255	2,705
CNEL:	282	607	1,307	2,816

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Archibald Av.
Road Segment: n/o SR-60 EB Ramps
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,353	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,658	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.43%
Medium Trucks:	69.4%	10.0%	20.6%	11.29%
Heavy Trucks:	69.0%	7.6%	23.4%	7.28%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	1.06	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-7.52	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.43	0.61	-1.20	*-5.34*	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	69.4	66.4	64.9	72.2	72.5
Medium Trucks:	72.9	71.5	69.1	67.5	74.6	74.9
Heavy Trucks:	75.4	73.9	70.4	70.5	77.5	77.7
Vehicle Noise:	78.2	76.8	73.7	73.0	80.1	80.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	281	605	1,304	2,809
CNEL:	292	630	1,357	2,925

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Archibald Av.
Road Segment: n/o Riverside Dr.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,701	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,367	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	80.39%
Medium Trucks:	69.4%	10.0%	20.6%	11.54%
Heavy Trucks:	69.0%	7.6%	23.4%	8.06%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	0.50	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-7.93	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.49	0.61	-1.20	*-5.34*	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	68.8	65.8	64.4	71.6	71.9
Medium Trucks:	72.5	71.1	68.7	67.1	74.2	74.5
Heavy Trucks:	75.3	73.9	70.3	70.4	77.4	77.6
Vehicle Noise:	77.9	76.5	73.4	72.8	79.8	80.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	271	584	1,257	2,709
CNEL:	282	608	1,309	2,820

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Archibald Av.
Road Segment: n/o Chino Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,778	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,612	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	80.69%
Medium Trucks:	69.4%	10.0%	20.6%	11.40%
Heavy Trucks:	69.0%	7.6%	23.4%	7.91%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	0.94	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-7.56	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.14	0.61	-1.20	*-5.34*	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:	70.5	69.3	66.3	64.8	72.1	72.4
Medium Trucks:	72.9	71.5	69.1	67.4	74.6	74.9
Heavy Trucks:	75.6	74.2	70.7	70.8	77.7	78.0
Vehicle Noise:	78.3	76.9	73.8	73.1	80.2	80.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	287	618	1,331	2,867
CNEL:	298	643	1,385	2,984

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Archibald Av.
Road Segment: n/o Schaefer Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,630 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,202 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.65%
Medium Trucks:	69.4%	10.0%	20.6%	11.36%
Heavy Trucks:	69.0%	7.6%	23.4%	7.99%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.21	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-8.73	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.25	0.61	-1.20	*-5.34*	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:	70.9	69.7	66.7	65.2	72.5	72.8
Medium Trucks:	73.1	71.7	69.3	67.7	74.8	75.1
Heavy Trucks:	75.6	74.1	70.6	70.7	77.7	77.9
Vehicle Noise:	78.4	77.0	73.9	73.2	80.3	80.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	290	625	1,347	2,902
CNEL:	302	651	1,403	3,022

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Archibald Av.
Road Segment: n/o Edison Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,630 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,202 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.65%
Medium Trucks:	69.4%	10.0%	20.6%	11.36%
Heavy Trucks:	69.0%	7.6%	23.4%	7.99%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.21	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-8.73	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.25	0.61	-1.20	*-5.34*	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:	70.9	69.7	66.7	65.2	72.5	72.8
Medium Trucks:	73.1	71.7	69.3	67.7	74.8	75.1
Heavy Trucks:	75.6	74.1	70.6	70.7	77.7	77.9
Vehicle Noise:	78.4	77.0	73.9	73.2	80.3	80.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	290	625	1,347	2,902
CNEL:	302	651	1,403	3,022

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Archibald Av.
Road Segment: n/o Eucalyptus Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,939 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,705 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	78.74%
Medium Trucks:	69.4%	10.0%	20.6%	12.27%
Heavy Trucks:	69.0%	7.6%	23.4%	8.99%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.57	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-7.50	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-8.85	0.61	-1.20	*-5.34*	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	70.5	67.5	66.0	73.3	73.6
Medium Trucks:	74.3	72.9	70.5	68.9	76.1	76.4
Heavy Trucks:	77.0	75.5	72.0	72.1	79.1	79.3
Vehicle Noise:	79.6	78.2	75.2	74.5	81.5	81.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	352	758	1,634	3,520
CNEL:	367	790	1,701	3,665

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Archibald Av.
Road Segment: n/o Merrill Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,715 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,687 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	78.72%
Medium Trucks:	69.4%	10.0%	20.6%	12.28%
Heavy Trucks:	69.0%	7.6%	23.4%	9.01%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.54	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-7.53	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-8.87	0.61	-1.20	*-5.34*	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	70.5	67.4	66.0	73.3	73.5
Medium Trucks:	74.3	72.9	70.5	68.9	76.0	76.3
Heavy Trucks:	76.9	75.5	72.0	72.1	79.0	79.3
Vehicle Noise:	79.6	78.2	75.1	74.4	81.5	81.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	351	756	1,628	3,507
CNEL:	365	787	1,695	3,651

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Limonite Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,696 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,765 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.73%
Medium Trucks:	69.4%	10.0%	20.6%	10.95%
Heavy Trucks:	69.0%	7.6%	23.4%	7.32%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.83	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-7.90	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.65	0.61	-1.20	-5.34	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:	72.0	70.8	67.7	66.3	73.5	73.8
Medium Trucks:	73.9	72.5	70.1	68.5	75.7	76.0
Heavy Trucks:	76.2	74.7	71.2	71.3	78.3	78.5
Vehicle Noise:	79.1	77.8	74.7	73.9	81.0	81.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	326	701	1,511	3,256
CNEL:	339	731	1,574	3,391

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Schleisman Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,983 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,549 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	120 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	110.0 feet
Centerline Dist. to Observer:	110.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.65%
Medium Trucks:	69.4%	10.0%	20.6%	11.16%
Heavy Trucks:	69.0%	7.6%	23.4%	7.19%

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:	92.331
Medium Trucks:	92.235
Heavy Trucks:	92.244

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.89	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	81.00	-7.75	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-9.66	-4.09	-1.20	-5.14	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:	65.8	64.6	61.5	60.1	67.3	67.6
Medium Trucks:	68.0	66.6	64.2	62.5	69.7	70.0
Heavy Trucks:	70.4	69.0	65.5	65.6	72.5	72.8
Vehicle Noise:	73.2	71.9	68.8	68.1	75.1	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	242	521	1,123	2,419
CNEL:	252	543	1,169	2,519

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: s/o Schleisman Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,905 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,144 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	120 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	110.0 feet
Centerline Dist. to Observer:	110.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.70%
Medium Trucks:	69.4%	10.0%	20.6%	11.13%
Heavy Trucks:	69.0%	7.6%	23.4%	7.17%

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:	92.331
Medium Trucks:	92.235
Heavy Trucks:	92.244

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.14	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	81.00	-8.52	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-10.43	-4.09	-1.20	-5.14	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:	65.0	63.8	60.8	59.3	66.6	66.9
Medium Trucks:	67.2	65.8	63.4	61.8	68.9	69.2
Heavy Trucks:	69.7	68.2	64.7	64.8	71.8	72.0
Vehicle Noise:	72.5	71.1	68.0	67.3	74.4	74.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	215	464	999	2,152
CNEL:	224	483	1,040	2,241

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: w/o Pipeline Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,779 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,170 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.93%
Medium Trucks:	69.4%	10.0%	20.6%	10.99%
Heavy Trucks:	69.0%	7.6%	23.4%	7.08%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.31	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-6.42	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.33	0.37	-1.20	-5.34	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	68.7	65.6	64.2	71.5	71.8
Medium Trucks:	72.2	70.8	68.4	66.8	73.9	74.3
Heavy Trucks:	75.1	73.7	70.1	70.2	77.2	77.4
Vehicle Noise:	77.7	76.3	73.2	72.5	79.6	79.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	262	564	1,215	2,618
CNEL:	273	587	1,265	2,725

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Edison Av.
Road Segment: w/o Ramona Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,195	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,725	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	82.02%
Medium Trucks:	69.4%	10.0%	20.6%	10.93%
Heavy Trucks:	69.0%	7.6%	23.4%	7.04%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.66	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-7.10	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.00	0.37	-1.20	-5.34	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	68.0	65.0	63.5	70.8	71.1
Medium Trucks:	71.5	70.1	67.7	66.1	73.3	73.6
Heavy Trucks:	74.4	73.0	69.5	69.5	76.5	76.7
Vehicle Noise:	77.0	75.6	72.5	71.9	78.9	79.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	236	509	1,096	2,360
CNEL:	246	529	1,140	2,457

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Edison Av.
Road Segment: w/o Central Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,407	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,264	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	82.16%
Medium Trucks:	69.4%	10.0%	20.6%	10.85%
Heavy Trucks:	69.0%	7.6%	23.4%	6.99%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.86	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-7.93	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.84	0.37	-1.20	-5.34	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	67.2	64.2	62.7	70.0	70.3
Medium Trucks:	70.7	69.3	66.9	65.3	72.4	72.7
Heavy Trucks:	73.6	72.2	68.6	68.7	75.7	75.9
Vehicle Noise:	76.2	74.8	71.7	71.0	78.1	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	208	448	964	2,077
CNEL:	216	466	1,004	2,163

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Edison Av.
Road Segment: w/o Mountain Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,908	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,623	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	82.12%
Medium Trucks:	69.4%	10.0%	20.6%	10.87%
Heavy Trucks:	69.0%	7.6%	23.4%	7.01%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.49	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-7.29	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.19	0.37	-1.20	-5.34	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:	69.1	67.9	64.8	63.4	70.6	70.9
Medium Trucks:	71.3	69.9	67.6	65.9	73.1	73.4
Heavy Trucks:	74.2	72.8	69.3	69.4	76.3	76.6
Vehicle Noise:	76.8	75.4	72.3	71.7	78.7	79.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	229	494	1,065	2,294
CNEL:	239	515	1,109	2,388

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Edison Av.
Road Segment: w/o San Antonio Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,421	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,265	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	82.32%
Medium Trucks:	69.4%	10.0%	20.6%	10.75%
Heavy Trucks:	69.0%	7.6%	23.4%	6.93%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.87	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-7.97	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.88	0.37	-1.20	-5.34	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	67.2	64.2	62.7	70.0	70.3
Medium Trucks:	70.6	69.3	66.9	65.2	72.4	72.7
Heavy Trucks:	73.5	72.1	68.6	68.7	75.6	75.9
Vehicle Noise:	76.2	74.8	71.7	71.0	78.1	78.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	207	446	960	2,068
CNEL:	215	464	999	2,153

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Edison Av.
Road Segment: w/o Euclid Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,543 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,876 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	82.51%
Medium Trucks:	69.4%	10.0%	20.6%	10.63%
Heavy Trucks:	69.0%	7.6%	23.4%	6.85%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.06	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-8.84	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.75	0.37	-1.20	-5.34	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:	67.7	66.4	63.4	61.9	69.2	69.5
Medium Trucks:	69.8	68.4	66.0	64.4	71.5	71.8
Heavy Trucks:	72.7	71.3	67.7	67.8	74.8	75.0
Vehicle Noise:	75.3	73.9	70.8	70.1	77.2	77.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	181	391	842	1,813
CNEL:	189	407	876	1,888

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Edison Av.
Road Segment: e/o Euclid Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,685 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,330 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	84.19%
Medium Trucks:	69.4%	10.0%	20.6%	9.61%
Heavy Trucks:	69.0%	7.6%	23.4%	6.19%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.80	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-11.23	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-13.14	2.47	-1.20	-5.21	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:	69.6	68.4	65.3	63.9	71.2	71.5
Medium Trucks:	71.0	69.6	67.3	65.6	72.8	73.1
Heavy Trucks:	73.5	72.1	68.5	68.6	75.6	75.8
Vehicle Noise:	76.5	75.1	72.0	71.3	78.4	78.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	303	652	1,405	3,027
CNEL:	315	679	1,463	3,153

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Edison Av.
Road Segment: w/o Grove Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,389 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,147 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	84.65%
Medium Trucks:	69.4%	10.0%	20.6%	9.34%
Heavy Trucks:	69.0%	7.6%	23.4%	6.02%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.42	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-12.00	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-13.91	2.47	-1.20	-5.21	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	67.8	64.7	63.3	70.5	70.8
Medium Trucks:	70.3	68.9	66.5	64.8	72.0	72.3
Heavy Trucks:	72.7	71.3	67.8	67.9	74.8	75.1
Vehicle Noise:	75.7	74.4	71.3	70.5	77.6	77.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	270	582	1,254	2,702
CNEL:	281	606	1,306	2,814

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Edison Av.
Road Segment: w/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,173 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,209 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.37	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-10.93	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.84	2.47	-1.20	-5.21	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:	69.1	67.8	64.8	63.3	70.6	70.9
Medium Trucks:	71.3	70.0	67.6	65.9	73.1	73.4
Heavy Trucks:	73.8	72.4	68.8	68.9	75.9	76.1
Vehicle Noise:	76.6	75.2	72.1	71.4	78.5	78.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	310	667	1,438	3,098
CNEL:	323	695	1,497	3,226

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Edison Av.
Road Segment: w/o Archibald Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,385 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,545 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	84.96%
Medium Trucks:	69.4%	10.0%	20.6%	9.15%
Heavy Trucks:	69.0%	7.6%	23.4%	5.89%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.11	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-10.79	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.70	2.47	-1.20	-5.21	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	69.1	66.0	64.6	71.9	72.2
Medium Trucks:	71.5	70.1	67.7	66.1	73.2	73.5
Heavy Trucks:	73.9	72.5	69.0	69.1	76.0	76.3
Vehicle Noise:	77.0	75.6	72.5	71.8	78.8	79.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	326	703	1,514	3,262
CNEL:	340	732	1,577	3,397

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Edison Av.
Road Segment: w/o Haven Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,768 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,213 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.30%
Medium Trucks:	69.4%	10.0%	20.6%	10.97%
Heavy Trucks:	69.0%	7.6%	23.4%	7.73%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.26	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-8.44	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-9.96	2.47	-1.20	-5.21	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	70.4	67.4	66.0	73.2	73.5
Medium Trucks:	73.8	72.4	70.1	68.4	75.6	75.9
Heavy Trucks:	76.7	75.3	71.7	71.8	78.8	79.0
Vehicle Noise:	79.3	77.9	74.8	74.2	81.2	81.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	471	1,014	2,184	4,706
CNEL:	490	1,056	2,274	4,899

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Edison Av.
Road Segment: e/o Haven Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,377 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,262 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.22%
Medium Trucks:	69.4%	10.0%	20.6%	11.02%
Heavy Trucks:	69.0%	7.6%	23.4%	7.76%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.35	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-8.33	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-9.85	2.47	-1.20	-5.21	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	70.5	67.5	66.0	73.3	73.6
Medium Trucks:	73.9	72.6	70.2	68.5	75.7	76.0
Heavy Trucks:	76.8	75.4	71.8	71.9	78.9	79.1
Vehicle Noise:	79.4	78.0	74.9	74.3	81.3	81.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	478	1,031	2,221	4,784
CNEL:	498	1,073	2,312	4,980

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Ontario Ranch Rd.
Road Segment: e/o Hamner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,321 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,214 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.26%
Medium Trucks:	69.4%	10.0%	20.6%	11.12%
Heavy Trucks:	69.0%	7.6%	23.4%	7.62%

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	1.87	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-6.77	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-8.41	-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	67.8	64.8	63.3	70.6	70.9
Medium Trucks:	71.2	69.8	67.4	65.8	72.9	73.2
Heavy Trucks:	73.9	72.5	69.0	69.1	76.0	76.3
Vehicle Noise:	76.6	75.2	72.1	71.5	78.5	78.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	281	606	1,305	2,811
CNEL:	293	631	1,359	2,927

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Eucalyptus Av.
Road Segment: w/o Bon View Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,562 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	443 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	83.39%
Medium Trucks:	69.4%	10.0%	20.6%	10.10%
Heavy Trucks:	69.0%	7.6%	23.4%	6.51%

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:	66.51	-5.65	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-14.81	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-16.72	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:	60.9	59.7	56.7	55.2	62.5	62.8
Medium Trucks:	63.0	61.6	59.2	57.6	64.7	65.1
Heavy Trucks:	66.4	65.0	61.4	61.5	68.5	68.7
Vehicle Noise:	68.8	67.4	64.3	63.7	70.7	71.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	228	491
CNEL:	51	110	237	511

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Eucalyptus Av.
Road Segment: w/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,408 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	192 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-9.39	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-17.95	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-19.86	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:	57.2	56.0	52.9	51.5	58.7	59.0
Medium Trucks:	59.9	58.5	56.1	54.5	61.6	61.9
Heavy Trucks:	63.2	61.8	58.3	58.4	65.3	65.6
Vehicle Noise:	65.6	64.2	61.1	60.4	67.5	67.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	139	300
CNEL:	31	67	145	312

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Eucalyptus Av.
Road Segment: e/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,571 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	205 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-9.11	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-17.67	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-19.58	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:	57.5	56.2	53.2	51.8	59.0	59.3
Medium Trucks:	60.2	58.8	56.4	54.7	61.9	62.2
Heavy Trucks:	63.5	62.1	58.6	58.7	65.6	65.9
Vehicle Noise:	65.9	64.5	61.3	60.7	67.8	68.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	145	313
CNEL:	33	70	151	326

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Eucalyptus Av.
Road Segment: w/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,571 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	205 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-9.11	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-17.67	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-19.58	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:	57.5	56.2	53.2	51.8	59.0	59.3
Medium Trucks:	60.2	58.8	56.4	54.7	61.9	62.2
Heavy Trucks:	63.5	62.1	58.6	58.7	65.6	65.9
Vehicle Noise:	65.9	64.5	61.3	60.7	67.8	68.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	145	313
CNEL:	33	70	151	326

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Eucalyptus Av.
Road Segment: e/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,571 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	205 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-9.11	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-17.67	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-19.58	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:	57.5	56.2	53.2	51.8	59.0	59.3
Medium Trucks:	60.2	58.8	56.4	54.7	61.9	62.2
Heavy Trucks:	63.5	62.1	58.6	58.7	65.6	65.9
Vehicle Noise:	65.9	64.5	61.3	60.7	67.8	68.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	145	313
CNEL:	33	70	151	326

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Merrill Av.
Road Segment: e/o Euclid Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,441 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,310 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	75.47%
Medium Trucks:	69.4%	10.0%	20.6%	13.22%
Heavy Trucks:	69.0%	7.6%	23.4%	11.32%

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	-2.34	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	-10.58	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:	67.9	66.7	63.7	62.2	69.5	69.8
Medium Trucks:	71.2	69.8	67.4	65.8	72.9	73.3
Heavy Trucks:	74.9	73.5	69.9	70.0	77.0	77.2
Vehicle Noise:	77.0	75.6	72.5	71.9	79.0	79.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	174	375	808	1,741
CNEL:	181	390	841	1,811

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Merrill Av.
Road Segment: w/o Grove Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,538 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,477 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	76.25%
Medium Trucks:	69.4%	10.0%	20.6%	12.93%
Heavy Trucks:	69.0%	7.6%	23.4%	10.82%

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	-1.78	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-9.48	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-10.26	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:	68.5	67.3	64.2	62.8	70.0	70.3
Medium Trucks:	71.6	70.2	67.9	66.2	73.4	73.7
Heavy Trucks:	75.2	73.8	70.3	70.4	77.3	77.6
Vehicle Noise:	77.4	76.0	72.9	72.3	79.3	79.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	185	398	856	1,845
CNEL:	192	414	891	1,920

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Merrill Av.
Road Segment: e/o Grove Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,962 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,069 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	83.98%
Medium Trucks:	69.4%	10.0%	20.6%	8.88%
Heavy Trucks:	69.0%	7.6%	23.4%	7.14%

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	0.10	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-9.65	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-10.60	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:	70.4	69.1	66.1	64.7	71.9	72.2
Medium Trucks:	71.5	70.1	67.7	66.0	73.2	73.5
Heavy Trucks:	74.9	73.5	69.9	70.0	77.0	77.2
Vehicle Noise:	77.5	76.1	73.0	72.3	79.4	79.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	185	399	860	1,853
CNEL:	193	416	895	1,929

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Merrill Av.
Road Segment: e/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,213 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,930 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.67%
Medium Trucks:	69.4%	10.0%	20.6%	10.22%
Heavy Trucks:	69.0%	7.6%	23.4%	8.11%

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	-0.32	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-9.34	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-10.35	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:	70.0	68.7	65.7	64.2	71.5	71.8
Medium Trucks:	71.8	70.4	68.0	66.3	73.5	73.8
Heavy Trucks:	75.1	73.7	70.2	70.3	77.2	77.5
Vehicle Noise:	77.6	76.2	73.1	72.5	79.5	79.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	190	409	880	1,897
CNEL:	197	425	916	1,974

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Merrill Av.
Road Segment: w/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,236 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,772 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.48%
Medium Trucks:	69.4%	10.0%	20.6%	10.86%
Heavy Trucks:	69.0%	7.6%	23.4%	8.66%

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	-0.75	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-9.45	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-10.44	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:	69.5	68.3	65.3	63.8	71.1	71.4
Medium Trucks:	71.7	70.3	67.9	66.2	73.4	73.7
Heavy Trucks:	75.0	73.6	70.1	70.2	77.2	77.4
Vehicle Noise:	77.5	76.1	72.9	72.3	79.4	79.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	186	400	861	1,855
CNEL:	193	416	896	1,930

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Merrill Av.
Road Segment: e/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,704 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,810 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	78.28%
Medium Trucks:	69.4%	10.0%	20.6%	11.97%
Heavy Trucks:	69.0%	7.6%	23.4%	9.75%

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	-0.78	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-8.94	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-9.83	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:	69.5	68.3	65.2	63.8	71.0	71.3
Medium Trucks:	72.2	70.8	68.4	66.8	73.9	74.2
Heavy Trucks:	75.7	74.2	70.7	70.8	77.8	78.0
Vehicle Noise:	77.9	76.5	73.4	72.8	79.9	80.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	200	431	929	2,001
CNEL:	208	449	966	2,082

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Limonite
Road Segment: e/o Archibald Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,061 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,077 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.50%
Medium Trucks:	69.4%	10.0%	20.6%	11.03%
Heavy Trucks:	69.0%	7.6%	23.4%	7.46%

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	0.45	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-8.24	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.93	-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:	65.9	64.6	61.6	60.1	67.4	67.7
Medium Trucks:	68.2	66.8	64.4	62.7	69.9	70.2
Heavy Trucks:	71.3	69.9	66.3	66.4	73.4	73.6
Vehicle Noise:	73.8	72.4	69.3	68.6	75.7	75.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	182	392	845	1,820
CNEL:	189	408	879	1,894

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Limonite
Road Segment: w/o Sumner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,852	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,220	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	78	feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.49%
Medium Trucks:	69.4%	10.0%	20.6%	11.05%
Heavy Trucks:	69.0%	7.6%	23.4%	7.45%

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	0.74	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-7.94	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.65	-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:	66.1	64.9	61.9	60.4	67.7	68.0
Medium Trucks:	68.5	67.1	64.7	63.0	70.2	70.5
Heavy Trucks:	71.6	70.1	66.6	66.7	73.7	73.9
Vehicle Noise:	74.1	72.7	69.6	68.9	76.0	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	190	410	883	1,902
CNEL:	198	426	919	1,980

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Limonite
Road Segment: w/o Scholar Wy.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,226	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,170	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	78	feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.41%
Medium Trucks:	69.4%	10.0%	20.6%	11.10%
Heavy Trucks:	69.0%	7.6%	23.4%	7.49%

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	0.63	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-8.02	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.73	-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:	66.0	64.8	61.8	60.3	67.6	67.9
Medium Trucks:	68.4	67.0	64.6	63.0	70.1	70.4
Heavy Trucks:	71.5	70.1	66.5	66.6	73.6	73.8
Vehicle Noise:	74.0	72.6	69.5	68.8	75.9	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	188	405	872	1,878
CNEL:	195	421	907	1,955

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Limonite
Road Segment: w/o Hamner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,859	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,220	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	78	feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.41%
Medium Trucks:	69.4%	10.0%	20.6%	11.10%
Heavy Trucks:	69.0%	7.6%	23.4%	7.49%

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	0.73	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-7.92	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.63	-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:	66.1	64.9	61.9	60.4	67.7	68.0
Medium Trucks:	68.5	67.1	64.7	63.1	70.2	70.5
Heavy Trucks:	71.6	70.2	66.6	66.7	73.7	73.9
Vehicle Noise:	74.1	72.7	69.6	68.9	76.0	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	191	411	885	1,907
CNEL:	198	428	921	1,985

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2025+A+B
Road Name: Limonite
Road Segment: e/o Hamner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,966	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,309	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	78	feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.33%
Medium Trucks:	69.4%	10.0%	20.6%	11.16%
Heavy Trucks:	69.0%	7.6%	23.4%	7.51%

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	0.90	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-7.73	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.45	-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:	66.3	65.1	62.0	60.6	67.8	68.1
Medium Trucks:	68.7	67.3	64.9	63.3	70.4	70.7
Heavy Trucks:	71.8	70.3	66.8	66.9	73.9	74.1
Vehicle Noise:	74.3	72.9	69.8	69.1	76.2	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	196	422	910	1,961
CNEL:	204	440	947	2,041

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o SR-60

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	41,617 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,317 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.99	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	77.72	-5.58	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-7.48	2.47	-1.20	*-5.21*	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	69.5	66.4	65.0	72.3	72.6
Medium Trucks:	73.4	72.0	69.6	68.0	75.1	75.5
Heavy Trucks:	76.8	75.4	71.8	71.9	78.9	79.1
Vehicle Noise:	79.1	77.7	74.6	74.0	81.0	81.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	457	984	2,120	4,567
CNEL:	475	1,024	2,206	4,752

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o SR-60 EB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	43,105 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,435 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.63	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-5.93	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-7.84	2.47	-1.20	*-5.21*	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	71.1	68.0	66.6	73.9	74.1
Medium Trucks:	74.8	73.4	71.0	69.4	76.5	76.8
Heavy Trucks:	77.7	76.3	72.7	72.8	79.8	80.0
Vehicle Noise:	80.2	78.9	75.8	75.1	82.2	82.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	543	1,169	2,519	5,426
CNEL:	565	1,217	2,622	5,648

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Walnut Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,843 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,654 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.89	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-5.67	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-7.58	2.47	-1.20	*-5.21*	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	71.3	68.3	66.9	74.1	74.4
Medium Trucks:	75.1	73.7	71.3	69.6	76.8	77.1
Heavy Trucks:	77.9	76.5	73.0	73.1	80.0	80.3
Vehicle Noise:	80.5	79.1	76.0	75.4	82.4	82.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	565	1,218	2,624	5,653
CNEL:	588	1,268	2,731	5,885

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Riverside Dr.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	43,290 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,450 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.65	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-5.92	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-7.82	2.47	-1.20	*-5.21*	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	71.1	68.1	66.6	73.9	74.2
Medium Trucks:	74.8	73.4	71.0	69.4	76.5	76.9
Heavy Trucks:	77.7	76.3	72.7	72.8	79.8	80.0
Vehicle Noise:	80.3	78.9	75.8	75.1	82.2	82.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	544	1,172	2,526	5,442
CNEL:	566	1,220	2,629	5,664

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Chino Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,249 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,128 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.22	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-6.34	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.25	2.47	-1.20	-5.21	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	70.7	67.6	66.2	73.4	73.7
Medium Trucks:	74.4	73.0	70.6	69.0	76.1	76.4
Heavy Trucks:	77.3	75.8	72.3	72.4	79.4	79.6
Vehicle Noise:	79.8	78.4	75.4	74.7	81.7	82.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	510	1,098	2,366	5,097
CNEL:	531	1,143	2,463	5,306

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Schaefer Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	42,085 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,354 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.52	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-6.04	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-7.95	2.47	-1.20	-5.21	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:	72.2	71.0	67.9	66.5	73.7	74.0
Medium Trucks:	74.7	73.3	70.9	69.3	76.4	76.7
Heavy Trucks:	77.6	76.2	72.6	72.7	79.7	79.9
Vehicle Noise:	80.1	78.8	75.7	75.0	82.0	82.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	534	1,151	2,479	5,340
CNEL:	556	1,198	2,580	5,559

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Edison Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,404 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,539 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.76	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-5.81	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-7.71	2.47	-1.20	-5.21	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	71.2	68.2	66.7	74.0	74.3
Medium Trucks:	74.9	73.5	71.1	69.5	76.6	77.0
Heavy Trucks:	77.8	76.4	72.8	72.9	79.9	80.1
Vehicle Noise:	80.4	79.0	75.9	75.2	82.3	82.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	553	1,192	2,569	5,535
CNEL:	576	1,241	2,674	5,761

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Eucalyptus Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	41,793 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,331 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.49	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-6.07	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-7.98	2.47	-1.20	-5.21	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:	72.2	70.9	67.9	66.5	73.7	74.0
Medium Trucks:	74.7	73.3	70.9	69.2	76.4	76.7
Heavy Trucks:	77.5	76.1	72.6	72.7	79.6	79.9
Vehicle Noise:	80.1	78.7	75.6	75.0	82.0	82.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	532	1,145	2,467	5,315
CNEL:	553	1,192	2,568	5,533

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Merrill Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	41,810	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,332	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.62	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-6.94	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-8.85	2.47	-1.20	*-5.21*	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:	74.6	73.4	70.4	68.9	76.2	76.5
Medium Trucks:	76.7	75.3	73.0	71.3	78.5	78.8
Heavy Trucks:	78.8	77.4	73.9	73.9	80.9	81.1
Vehicle Noise:	81.8	80.4	77.4	76.6	83.7	84.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	690	1,486	3,201	6,896
CNEL:	718	1,548	3,334	7,183

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Kimball Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	43,304	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,451	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.78	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-6.79	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-8.69	2.47	-1.20	*-5.21*	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:	74.8	73.5	70.5	69.1	76.3	76.6
Medium Trucks:	76.9	75.5	73.1	71.5	78.6	78.9
Heavy Trucks:	79.0	77.5	74.0	74.1	81.1	81.3
Vehicle Noise:	82.0	80.6	77.5	76.8	83.9	84.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	706	1,521	3,277	7,060
CNEL:	735	1,584	3,413	7,354

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Bickmore Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,970	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,389	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.18	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-8.38	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.29	2.47	-1.20	*-5.21*	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	71.9	68.9	67.5	74.7	75.0
Medium Trucks:	75.3	73.9	71.5	69.9	77.0	77.3
Heavy Trucks:	77.4	76.0	72.4	72.5	79.5	79.7
Vehicle Noise:	80.4	79.0	75.9	75.2	82.3	82.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	552	1,190	2,564	5,524
CNEL:	575	1,240	2,671	5,754

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Pine Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,841	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,299	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.01	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-8.55	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.46	2.47	-1.20	*-5.21*	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:	73.0	71.8	68.7	67.3	74.6	74.9
Medium Trucks:	75.1	73.7	71.3	69.7	76.9	77.2
Heavy Trucks:	77.2	75.8	72.2	72.3	79.3	79.5
Vehicle Noise:	80.2	78.8	75.8	75.0	82.1	82.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	538	1,160	2,499	5,384
CNEL:	561	1,208	2,603	5,608

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: s/o Pine Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	48,661	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,878	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.28	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-6.28	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-8.19	2.47	-1.20	*-5.21*	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:	75.3	74.0	71.0	69.6	76.8	77.1
Medium Trucks:	77.4	76.0	73.6	72.0	79.1	79.4
Heavy Trucks:	79.5	78.1	74.5	74.6	81.6	81.8
Vehicle Noise:	82.5	81.1	78.1	77.3	84.4	84.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	763	1,644	3,542	7,631
CNEL:	795	1,712	3,689	7,948

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o SR-60

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,823	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,616	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.44	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.12	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.03	0.61	-1.20	*-5.34*	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	68.0	65.0	63.6	70.8	71.1
Medium Trucks:	71.7	70.3	68.0	66.3	73.5	73.8
Heavy Trucks:	74.6	73.2	69.7	69.8	76.7	77.0
Vehicle Noise:	77.2	75.8	72.7	72.1	79.1	79.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	243	524	1,128	2,431
CNEL:	253	545	1,175	2,531

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o SR-60 EB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,823	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,616	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.44	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.12	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.03	0.61	-1.20	*-5.34*	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	68.0	65.0	63.6	70.8	71.1
Medium Trucks:	71.7	70.3	68.0	66.3	73.5	73.8
Heavy Trucks:	74.6	73.2	69.7	69.8	76.7	77.0
Vehicle Noise:	77.2	75.8	72.7	72.1	79.1	79.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	243	524	1,128	2,431
CNEL:	253	545	1,175	2,531

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o Walnut Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,505	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,112	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.51	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-8.05	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.96	0.61	-1.20	*-5.34*	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	67.1	64.1	62.6	69.9	70.2
Medium Trucks:	70.8	69.4	67.0	65.4	72.5	72.9
Heavy Trucks:	73.7	72.3	68.7	68.8	75.8	76.0
Vehicle Noise:	76.3	74.9	71.8	71.1	78.2	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	211	454	979	2,108
CNEL:	219	473	1,019	2,194

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o Riverside Dr.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,782 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,497 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.98	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.54	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.45	0.61	-1.20	-5.34	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:	66.9	65.6	62.6	61.1	68.4	68.7
Medium Trucks:	69.3	67.9	65.5	63.9	71.1	71.4
Heavy Trucks:	72.2	70.8	67.2	67.3	74.3	74.5
Vehicle Noise:	74.8	73.4	70.3	69.6	76.7	77.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	168	361	778	1,676
CNEL:	174	376	810	1,744

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o Chino Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,937 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,031 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.06	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-11.62	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.53	1.46	-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:	67.4	66.1	63.1	61.6	68.9	69.2
Medium Trucks:	69.6	68.2	65.9	64.2	71.4	71.7
Heavy Trucks:	72.1	70.7	67.1	67.2	74.2	74.4
Vehicle Noise:	74.9	73.5	70.4	69.7	76.8	77.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	306	659	1,421
CNEL:	148	319	687	1,479

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o Schaefer Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,798 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	940 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.46	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-12.02	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.93	1.46	-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:	67.0	65.7	62.7	61.2	68.5	68.8
Medium Trucks:	69.2	67.8	65.5	63.8	71.0	71.3
Heavy Trucks:	71.7	70.3	66.7	66.8	73.8	74.0
Vehicle Noise:	74.5	73.1	70.0	69.3	76.4	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	134	288	620	1,336
CNEL:	139	300	646	1,391

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o Edison Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,507 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	837 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.96	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-12.52	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.43	1.46	-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:	66.5	65.2	62.2	60.7	68.0	68.3
Medium Trucks:	68.7	67.3	65.0	63.3	70.5	70.8
Heavy Trucks:	71.2	69.8	66.2	66.3	73.3	73.5
Vehicle Noise:	74.0	72.6	69.5	68.8	75.9	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	124	266	574	1,237
CNEL:	129	277	598	1,288

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o Eucalyptus Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,897 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	948 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.42	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-11.98	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-13.89	1.46	-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:	67.0	65.8	62.7	61.3	68.6	68.8
Medium Trucks:	69.3	67.9	65.5	63.9	71.0	71.3
Heavy Trucks:	71.7	70.3	66.8	66.9	73.8	74.1
Vehicle Noise:	74.5	73.2	70.1	69.4	76.4	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	134	289	624	1,343
CNEL:	140	301	649	1,399

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o Street A

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,569 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	603 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.39	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-13.95	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-15.86	1.46	-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:	65.0	63.8	60.8	59.3	66.6	66.9
Medium Trucks:	67.3	65.9	63.5	61.9	69.0	69.4
Heavy Trucks:	69.8	68.4	64.8	64.9	71.9	72.1
Vehicle Noise:	72.6	71.2	68.1	67.4	74.5	74.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	214	461	994
CNEL:	103	223	480	1,035

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o Merrill Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,569 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	603 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.39	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-13.95	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-15.86	1.46	-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:	65.0	63.8	60.8	59.3	66.6	66.9
Medium Trucks:	67.3	65.9	63.5	61.9	69.0	69.4
Heavy Trucks:	69.8	68.4	64.8	64.9	71.9	72.1
Vehicle Noise:	72.6	71.2	68.1	67.4	74.5	74.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	214	461	994
CNEL:	103	223	480	1,035

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o SR-60

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,038 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,713 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.14	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-7.42	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.33	0.61	-1.20	*-5.34*	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	69.5	66.5	65.0	72.3	72.6
Medium Trucks:	73.0	71.6	69.2	67.6	74.7	75.0
Heavy Trucks:	75.5	74.0	70.5	70.6	77.6	77.8
Vehicle Noise:	78.3	76.9	73.8	73.1	80.2	80.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	285	615	1,324	2,853
CNEL:	297	640	1,379	2,970

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o SR-60 EB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,038 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,713 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.14	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-7.42	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-9.33	0.61	-1.20	-5.34	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	69.5	66.5	65.0	72.3	72.6
Medium Trucks:	73.0	71.6	69.2	67.6	74.7	75.0
Heavy Trucks:	75.5	74.0	70.5	70.6	77.6	77.8
Vehicle Noise:	78.3	76.9	73.8	73.1	80.2	80.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	285	615	1,324	2,853
CNEL:	297	640	1,379	2,970

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Riverside Dr.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,006 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,312 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.45	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-8.11	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-10.02	0.61	-1.20	-5.34	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:	70.0	68.8	65.8	64.3	71.6	71.9
Medium Trucks:	72.3	70.9	68.5	66.9	74.0	74.4
Heavy Trucks:	74.8	73.3	69.8	69.9	76.9	77.1
Vehicle Noise:	77.6	76.2	73.1	72.4	79.5	79.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	256	552	1,190	2,564
CNEL:	267	575	1,239	2,670

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Chino Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,767 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,532 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.84	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-7.72	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-9.63	0.61	-1.20	-5.34	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	69.2	66.2	64.7	72.0	72.3
Medium Trucks:	72.7	71.3	68.9	67.3	74.4	74.7
Heavy Trucks:	75.2	73.7	70.2	70.3	77.3	77.5
Vehicle Noise:	78.0	76.6	73.5	72.8	79.9	80.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	272	587	1,264	2,724
CNEL:	284	611	1,317	2,837

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Schaefer Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,402 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,104 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.37	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-8.94	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.84	0.61	-1.20	-5.34	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	69.5	66.5	65.1	72.3	72.6
Medium Trucks:	72.9	71.5	69.1	67.5	74.6	74.9
Heavy Trucks:	75.0	73.5	70.0	70.1	77.1	77.3
Vehicle Noise:	78.0	76.6	73.5	72.8	79.9	80.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	273	588	1,266	2,728
CNEL:	284	612	1,319	2,841

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Edison Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,402 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,104 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.37	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-8.94	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.84	0.61	-1.20	-5.34	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	69.5	66.5	65.1	72.3	72.6
Medium Trucks:	72.9	71.5	69.1	67.5	74.6	74.9
Heavy Trucks:	75.0	73.5	70.0	70.1	77.1	77.3
Vehicle Noise:	78.0	76.6	73.5	72.8	79.9	80.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	273	588	1,266	2,728
CNEL:	284	612	1,319	2,841

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Eucalyptus Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,651 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,682 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.68	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-7.88	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.79	0.61	-1.20	-5.34	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	70.6	67.6	66.1	73.4	73.7
Medium Trucks:	73.9	72.5	70.2	68.5	75.7	76.0
Heavy Trucks:	76.0	74.6	71.1	71.1	78.1	78.3
Vehicle Noise:	79.0	77.7	74.6	73.8	80.9	81.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	321	691	1,488	3,207
CNEL:	334	720	1,550	3,340

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Merrill Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,424 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,664 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.65	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-7.91	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.82	0.61	-1.20	-5.34	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	70.6	67.5	66.1	73.4	73.7
Medium Trucks:	73.9	72.5	70.1	68.5	75.6	76.0
Heavy Trucks:	76.0	74.6	71.0	71.1	78.1	78.3
Vehicle Noise:	79.0	77.6	74.6	73.8	80.9	81.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	319	688	1,482	3,192
CNEL:	332	716	1,543	3,325

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Limonite Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,469 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,667 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.66	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-7.91	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.81	0.61	-1.20	-5.34	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	70.6	67.5	66.1	73.4	73.7
Medium Trucks:	73.9	72.5	70.1	68.5	75.6	76.0
Heavy Trucks:	76.0	74.6	71.0	71.1	78.1	78.3
Vehicle Noise:	79.0	77.6	74.6	73.8	80.9	81.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	319	688	1,483	3,195
CNEL:	333	717	1,545	3,328

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 *Project Name:* Merrill Commerce Center
Road Name: Archibald Av. *Job Number:* 12005
Road Segment: n/o Schleisman Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,420	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,584	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	120	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	110.0	feet
Centerline Dist. to Observer:	110.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	92.331
Medium Trucks:	92.235
Heavy Trucks:	92.244

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	0.93	-4.10	-1.20	*-4.78*	0.000	0.000
Medium Trucks:	81.00	-7.63	-4.09	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.54	-4.09	-1.20	*-5.14*	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:	65.8	64.6	61.6	60.1	67.4	67.7
Medium Trucks:	68.1	66.7	64.3	62.7	69.8	70.1
Heavy Trucks:	70.5	69.1	65.6	65.7	72.7	72.9
Vehicle Noise:	73.3	72.0	68.9	68.2	75.2	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	246	530	1,142	2,461
CNEL:	256	552	1,189	2,562

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 *Project Name:* Merrill Commerce Center
Road Name: Archibald Av. *Job Number:* 12005
Road Segment: s/o Schleisman Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,073	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,158	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	120	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	110.0	feet
Centerline Dist. to Observer:	110.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	92.331
Medium Trucks:	92.235
Heavy Trucks:	92.244

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	0.15	-4.10	-1.20	*-4.78*	0.000	0.000
Medium Trucks:	81.00	-8.41	-4.09	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.32	-4.09	-1.20	*-5.14*	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:	65.1	63.8	60.8	59.3	66.6	66.9
Medium Trucks:	67.3	65.9	63.5	61.9	69.0	69.3
Heavy Trucks:	69.8	68.3	64.8	64.9	71.9	72.1
Vehicle Noise:	72.6	71.2	68.1	67.4	74.5	74.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	218	470	1,013	2,182
CNEL:	227	490	1,055	2,272

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 *Project Name:* Merrill Commerce Center
Road Name: Edison Av. *Job Number:* 12005
Road Segment: w/o Pipeline Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,411	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,141	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	2.24	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-6.32	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.23	0.37	-1.20	*-5.34*	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	68.6	65.6	64.1	71.4	71.7
Medium Trucks:	72.3	70.9	68.5	66.9	74.0	74.3
Heavy Trucks:	75.2	73.8	70.2	70.3	77.3	77.5
Vehicle Noise:	77.8	76.4	73.3	72.6	79.7	79.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	265	570	1,228	2,646
CNEL:	275	593	1,278	2,754

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 *Project Name:* Merrill Commerce Center
Road Name: Edison Av. *Job Number:* 12005
Road Segment: w/o Ramona Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,723	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,688	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.56	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.00	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.91	0.37	-1.20	*-5.34*	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	67.9	64.9	63.4	70.7	71.0
Medium Trucks:	71.6	70.2	67.8	66.2	73.4	73.7
Heavy Trucks:	74.5	73.1	69.5	69.6	76.6	76.8
Vehicle Noise:	77.1	75.7	72.6	71.9	79.0	79.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	238	514	1,107	2,385
CNEL:	248	535	1,152	2,482

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 *Project Name:* Merrill Commerce Center
Road Name: Edison Av. *Job Number:* 12005
Road Segment: w/o Central Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,846	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,219	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.73	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.83	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.74	0.37	-1.20	*-5.34*	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	67.1	64.1	62.6	69.9	70.2
Medium Trucks:	70.8	69.4	67.0	65.4	72.5	72.8
Heavy Trucks:	73.7	72.3	68.7	68.8	75.8	76.0
Vehicle Noise:	76.2	74.9	71.8	71.1	78.2	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	210	452	974	2,099
CNEL:	218	471	1,014	2,185

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 *Project Name:* Merrill Commerce Center
Road Name: Edison Av. *Job Number:* 12005
Road Segment: w/o Mountain Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,331	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,577	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.38	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.18	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.09	0.37	-1.20	*-5.34*	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	67.7	64.7	63.3	70.5	70.8
Medium Trucks:	71.4	70.0	67.7	66.0	73.2	73.5
Heavy Trucks:	74.3	72.9	69.4	69.5	76.4	76.7
Vehicle Noise:	76.9	75.5	72.4	71.7	78.8	79.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	232	500	1,076	2,319
CNEL:	241	520	1,120	2,413

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 *Project Name:* Merrill Commerce Center
Road Name: Edison Av. *Job Number:* 12005
Road Segment: w/o San Antonio Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,650	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,204	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.70	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.86	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.77	0.37	-1.20	*-5.34*	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	67.1	64.0	62.6	69.8	70.1
Medium Trucks:	70.8	69.4	67.0	65.3	72.5	72.8
Heavy Trucks:	73.6	72.2	68.7	68.8	75.7	76.0
Vehicle Noise:	76.2	74.8	71.7	71.1	78.1	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	209	450	970	2,089
CNEL:	217	468	1,009	2,174

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 *Project Name:* Merrill Commerce Center
Road Name: Edison Av. *Job Number:* 12005
Road Segment: w/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,693	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,809	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.16	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-8.72	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.63	0.37	-1.20	*-5.34*	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:	67.4	66.2	63.2	61.7	69.0	69.3
Medium Trucks:	69.9	68.5	66.1	64.5	71.6	71.9
Heavy Trucks:	72.8	71.4	67.8	67.9	74.9	75.1
Vehicle Noise:	75.4	74.0	70.9	70.2	77.3	77.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	183	395	850	1,831
CNEL:	191	411	885	1,906

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: e/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,548 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,160 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.55	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-11.11	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-13.02	2.47	-1.20	-5.21	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:	68.9	67.6	64.6	63.2	70.4	70.7
Medium Trucks:	71.2	69.8	67.4	65.7	72.9	73.2
Heavy Trucks:	73.6	72.2	68.7	68.8	75.7	76.0
Vehicle Noise:	76.4	75.0	72.0	71.2	78.3	78.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	301	649	1,398	3,012
CNEL:	314	676	1,456	3,137

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: w/o Grove Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,197 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	972 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.31	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-11.88	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-13.78	2.47	-1.20	-5.21	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	66.9	63.8	62.4	69.7	70.0
Medium Trucks:	70.4	69.0	66.6	65.0	72.1	72.4
Heavy Trucks:	72.9	71.4	67.9	68.0	75.0	75.2
Vehicle Noise:	75.7	74.3	71.2	70.5	77.6	77.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	268	577	1,243	2,678
CNEL:	279	601	1,294	2,789

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: w/o Walker Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,536 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,238 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.26	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-10.82	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.73	2.47	-1.20	-5.21	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	67.9	64.9	63.4	70.7	71.0
Medium Trucks:	71.4	70.1	67.7	66.0	73.2	73.5
Heavy Trucks:	73.9	72.5	68.9	69.0	76.0	76.2
Vehicle Noise:	76.7	75.3	72.2	71.5	78.6	78.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	315	678	1,461	3,147
CNEL:	328	706	1,521	3,277

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: w/o Archibald Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,021 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,277 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.13	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-10.69	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.60	2.47	-1.20	-5.21	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	68.1	65.0	63.6	70.8	71.1
Medium Trucks:	71.6	70.2	67.8	66.2	73.3	73.6
Heavy Trucks:	74.0	72.6	69.1	69.2	76.1	76.4
Vehicle Noise:	76.8	75.5	72.4	71.7	78.7	79.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	321	692	1,491	3,212
CNEL:	334	721	1,552	3,345

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: w/o Haven Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,504 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,033 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.11	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-8.67	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-10.58	2.47	-1.20	-5.21	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	70.1	67.0	65.6	72.9	73.2
Medium Trucks:	73.6	72.2	69.8	68.2	75.3	75.7
Heavy Trucks:	76.1	74.6	71.1	71.2	78.2	78.4
Vehicle Noise:	78.9	77.5	74.4	73.7	80.8	81.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	438	943	2,033	4,379
CNEL:	456	982	2,117	4,560

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: e/o Haven Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,239 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,091 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.01	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-8.55	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-10.46	2.47	-1.20	-5.21	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	70.2	67.2	65.7	73.0	73.3
Medium Trucks:	73.7	72.3	69.9	68.3	75.5	75.8
Heavy Trucks:	76.2	74.8	71.2	71.3	78.3	78.5
Vehicle Noise:	79.0	77.6	74.5	73.8	80.9	81.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	446	962	2,072	4,463
CNEL:	465	1,001	2,157	4,647

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Ontario Ranch Rd. | Job Number: 12005
Road Segment: e/o Hamner Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,415 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,062 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	1.67	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-6.89	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-8.80	-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:	68.8	67.6	64.5	63.1	70.4	70.7
Medium Trucks:	71.1	69.7	67.3	65.6	72.8	73.1
Heavy Trucks:	73.5	72.1	68.6	68.7	75.6	75.9
Vehicle Noise:	76.3	75.0	71.9	71.2	78.2	78.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	269	579	1,248	2,689
CNEL:	280	603	1,300	2,800

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Eucalyptus Av. | Job Number: 12005
Road Segment: w/o Bon View Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,152 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	411 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-6.09	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-14.65	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-16.56	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:	60.5	59.3	56.2	54.8	62.0	62.3
Medium Trucks:	63.2	61.8	59.4	57.8	64.9	65.2
Heavy Trucks:	66.5	65.1	61.6	61.7	68.6	68.9
Vehicle Noise:	68.9	67.5	64.4	63.7	70.8	71.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	107	231	498
CNEL:	52	112	240	518

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Eucalyptus Av. | Job Number: 12005
Road Segment: w/o Walker Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,520 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	201 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-9.19	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-17.75	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-19.66	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:	57.4	56.2	53.1	51.7	58.9	59.2
Medium Trucks:	60.1	58.7	56.3	54.6	61.8	62.1
Heavy Trucks:	63.4	62.0	58.5	58.6	65.5	65.8
Vehicle Noise:	65.8	64.4	61.3	60.6	67.7	68.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	143	309
CNEL:	32	69	149	321

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Eucalyptus Av. | Job Number: 12005
Road Segment: e/o Walker Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,686 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	214 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-8.92	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-17.48	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-19.39	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:	57.7	56.4	53.4	52.0	59.2	59.5
Medium Trucks:	60.3	59.0	56.6	54.9	62.1	62.4
Heavy Trucks:	63.7	62.3	58.8	58.8	65.8	66.0
Vehicle Noise:	66.0	64.7	61.5	60.9	68.0	68.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	150	322
CNEL:	34	72	156	335

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Eucalyptus Av. | Job Number: 12005
Road Segment: w/o Vineyard Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,686 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	214 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-8.92	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-17.48	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-19.39	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:	57.7	56.4	53.4	52.0	59.2	59.5
Medium Trucks:	60.3	59.0	56.6	54.9	62.1	62.4
Heavy Trucks:	63.7	62.3	58.8	58.8	65.8	66.0
Vehicle Noise:	66.0	64.7	61.5	60.9	68.0	68.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	150	322
CNEL:	34	72	156	335

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Eucalyptus Av. | Job Number: 12005
Road Segment: e/o Vineyard Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,686 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	214 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-8.92	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-17.48	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-19.39	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:	57.7	56.4	53.4	52.0	59.2	59.5
Medium Trucks:	60.3	59.0	56.6	54.9	62.1	62.4
Heavy Trucks:	63.7	62.3	58.8	58.8	65.8	66.0
Vehicle Noise:	66.0	64.7	61.5	60.9	68.0	68.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	150	322
CNEL:	34	72	156	335

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Merrill Av. | Job Number: 12005
Road Segment: e/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,470 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,153 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-2.57	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.13	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.04	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:	67.7	66.5	63.4	62.0	69.3	69.5
Medium Trucks:	70.0	68.6	66.2	64.6	71.7	72.0
Heavy Trucks:	72.4	71.0	67.5	67.6	74.5	74.8
Vehicle Noise:	75.2	73.9	70.8	70.1	77.1	77.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	132	284	611	1,316
CNEL:	137	295	636	1,371

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Merrill Av. | Job Number: 12005
Road Segment: w/o Grove Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,464 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,312 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-2.01	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.57	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.48	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:	68.3	67.0	64.0	62.5	69.8	70.1
Medium Trucks:	70.5	69.1	66.8	65.1	72.3	72.6
Heavy Trucks:	73.0	71.6	68.0	68.1	75.1	75.3
Vehicle Noise:	75.8	74.4	71.3	70.6	77.7	78.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	309	666	1,435
CNEL:	149	322	693	1,494

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Merrill Av. | Job Number: 12005
Road Segment: e/o Grove Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,778 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,337 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-1.93	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.49	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.40	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	67.1	64.1	62.6	69.9	70.2
Medium Trucks:	70.6	69.2	66.8	65.2	72.4	72.7
Heavy Trucks:	73.1	71.7	68.1	68.2	75.2	75.4
Vehicle Noise:	75.9	74.5	71.4	70.7	77.8	78.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	145	313	674	1,453
CNEL:	151	326	702	1,513

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Merrill Av. | Job Number: 12005
Road Segment: e/o Walker Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,321 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,460 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-1.55	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.11	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.02	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:	68.7	67.5	64.5	63.0	70.3	70.6
Medium Trucks:	71.0	69.6	67.2	65.6	72.7	73.1
Heavy Trucks:	73.5	72.1	68.5	68.6	75.6	75.8
Vehicle Noise:	76.3	74.9	71.8	71.1	78.2	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	154	332	715	1,541
CNEL:	160	346	745	1,604

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Merrill Av. | Job Number: 12005
Road Segment: w/o Vineyard Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,697 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,410 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-1.70	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.26	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.17	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:	68.6	67.3	64.3	62.9	70.1	70.4
Medium Trucks:	70.9	69.5	67.1	65.4	72.6	72.9
Heavy Trucks:	73.3	71.9	68.4	68.5	75.4	75.6
Vehicle Noise:	76.1	74.7	71.7	70.9	78.0	78.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	151	324	699	1,506
CNEL:	157	338	728	1,568

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Merrill Av. | Job Number: 12005
Road Segment: e/o Vineyard Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,489 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,553 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-1.28	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-9.84	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-11.75	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:	69.0	67.8	64.7	63.3	70.5	70.8
Medium Trucks:	71.3	69.9	67.5	65.8	73.0	73.3
Heavy Trucks:	73.7	72.3	68.8	68.9	75.8	76.1
Vehicle Noise:	76.5	75.2	72.1	71.4	78.4	78.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	161	346	745	1,606
CNEL:	167	360	776	1,672

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Limonite | Job Number: 12005
Road Segment: e/o Archibald Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,267 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,014 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	0.31	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-8.25	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.16	-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:	65.7	64.5	61.4	60.0	67.3	67.6
Medium Trucks:	68.2	66.8	64.4	62.7	69.9	70.2
Heavy Trucks:	71.0	69.6	66.1	66.2	73.2	73.4
Vehicle Noise:	73.6	72.2	69.1	68.5	75.5	75.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	178	383	824	1,776
CNEL:	185	398	858	1,849

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | Project Name: Merrill Commerce Center
Road Name: Limonite | Job Number: 12005
Road Segment: w/o Sumner Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,089 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,159 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	0.61	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-7.95	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.86	-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:	66.0	64.8	61.7	60.3	67.6	67.9
Medium Trucks:	68.5	67.1	64.7	63.0	70.2	70.5
Heavy Trucks:	71.3	69.9	66.4	66.5	73.5	73.7
Vehicle Noise:	73.9	72.5	69.4	68.8	75.8	76.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	186	401	863	1,860
CNEL:	194	417	899	1,936

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | *Project Name:* Merrill Commerce Center
Road Name: Limonite | *Job Number:* 12005
Road Segment: w/o Scholar Wy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,567 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,117 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	0.52	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-8.04	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.95	-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:	65.9	64.7	61.7	60.2	67.5	67.8
Medium Trucks:	68.4	67.0	64.6	62.9	70.1	70.4
Heavy Trucks:	71.3	69.8	66.3	66.4	73.4	73.6
Vehicle Noise:	73.8	72.5	69.4	68.7	75.7	76.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	184	396	852	1,836
CNEL:	191	412	887	1,911

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | *Project Name:* Merrill Commerce Center
Road Name: Limonite | *Job Number:* 12005
Road Segment: w/o Hamner Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,211 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,169 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	0.63	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-7.93	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.84	-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:	66.0	64.8	61.8	60.3	67.6	67.9
Medium Trucks:	68.5	67.1	64.7	63.1	70.2	70.5
Heavy Trucks:	71.4	70.0	66.4	66.5	73.5	73.7
Vehicle Noise:	73.9	72.6	69.5	68.8	75.9	76.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	187	402	866	1,866
CNEL:	194	418	901	1,942

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026 | *Project Name:* Merrill Commerce Center
Road Name: Limonite | *Job Number:* 12005
Road Segment: e/o Hamner Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,407 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,264 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	0.82	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-7.75	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.65	-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:	66.2	65.0	62.0	60.5	67.8	68.1
Medium Trucks:	68.7	67.3	64.9	63.2	70.4	70.7
Heavy Trucks:	71.6	70.1	66.6	66.7	73.7	73.9
Vehicle Noise:	74.1	72.7	69.6	69.0	76.0	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	192	414	891	1,920
CNEL:	200	431	928	1,999

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C | *Project Name:* Merrill Commerce Center
Road Name: Euclid Av. | *Job Number:* 12005
Road Segment: n/o SR-60

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	41,780 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,330 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.44%
Medium Trucks:	69.4%	10.0%	20.6%	11.29%
Heavy Trucks:	69.0%	7.6%	23.4%	7.27%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.01	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	77.72	-5.58	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-7.48	2.47	-1.20	*-5.21*	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	69.5	66.5	65.0	72.3	72.6
Medium Trucks:	73.4	72.0	69.6	68.0	75.1	75.5
Heavy Trucks:	76.8	75.4	71.8	71.9	78.9	79.1
Vehicle Noise:	79.1	77.7	74.6	74.0	81.0	81.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	457	984	2,121	4,569
CNEL:	475	1,024	2,207	4,754

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Euclid Av.
Road Segment: n/o SR-60 EB Ramps
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,139 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,598 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	79.87%
Medium Trucks:	69.4%	10.0%	20.6%	11.68%
Heavy Trucks:	69.0%	7.6%	23.4%	8.45%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.75	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-5.60	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-7.01	2.47	-1.20	-5.21	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	71.2	68.2	66.7	74.0	74.3
Medium Trucks:	75.1	73.7	71.3	69.7	76.9	77.2
Heavy Trucks:	78.5	77.1	73.5	73.6	80.6	80.8
Vehicle Noise:	80.8	79.4	76.3	75.7	82.8	83.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	595	1,282	2,762	5,951
CNEL:	619	1,334	2,874	6,191

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Euclid Av.
Road Segment: n/o Walnut Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	48,039 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,829 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.02%
Medium Trucks:	69.4%	10.0%	20.6%	11.62%
Heavy Trucks:	69.0%	7.6%	23.4%	8.35%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.03	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-5.35	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-6.79	2.47	-1.20	-5.21	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	71.5	68.4	67.0	74.2	74.5
Medium Trucks:	75.4	74.0	71.6	69.9	77.1	77.4
Heavy Trucks:	78.7	77.3	73.8	73.9	80.8	81.1
Vehicle Noise:	81.1	79.7	76.6	75.9	83.0	83.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	617	1,329	2,864	6,170
CNEL:	642	1,383	2,980	6,420

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Euclid Av.
Road Segment: n/o Riverside Dr.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,648 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,638 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.02%
Medium Trucks:	69.4%	10.0%	20.6%	11.60%
Heavy Trucks:	69.0%	7.6%	23.4%	8.38%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.80	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-5.58	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-6.99	2.47	-1.20	-5.21	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:	72.5	71.2	68.2	66.8	74.0	74.3
Medium Trucks:	75.1	73.7	71.4	69.7	76.9	77.2
Heavy Trucks:	78.5	77.1	73.6	73.7	80.6	80.9
Vehicle Noise:	80.8	79.5	76.3	75.7	82.8	83.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	597	1,286	2,771	5,970
CNEL:	621	1,338	2,883	6,212

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Euclid Av.
Road Segment: n/o Chino Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	42,096 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,355 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.12%
Medium Trucks:	69.4%	10.0%	20.6%	11.49%
Heavy Trucks:	69.0%	7.6%	23.4%	8.39%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.46	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-5.98	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-7.34	2.47	-1.20	-5.21	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	70.9	67.9	66.4	73.7	74.0
Medium Trucks:	74.7	73.4	71.0	69.3	76.5	76.8
Heavy Trucks:	78.2	76.8	73.2	73.3	80.3	80.5
Vehicle Noise:	80.5	79.1	76.0	75.4	82.4	82.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	565	1,217	2,622	5,650
CNEL:	588	1,266	2,728	5,878

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Euclid Av.
Road Segment: n/o Schaefer Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,096 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,594 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.27%
Medium Trucks:	69.4%	10.0%	20.6%	11.44%
Heavy Trucks:	69.0%	7.6%	23.4%	8.29%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.76	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-5.70	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-7.10	2.47	-1.20	-5.21	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	71.2	68.2	66.7	74.0	74.3
Medium Trucks:	75.0	73.6	71.2	69.6	76.8	77.1
Heavy Trucks:	78.4	77.0	73.5	73.6	80.5	80.8
Vehicle Noise:	80.8	79.4	76.2	75.6	82.7	82.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	588	1,267	2,731	5,883
CNEL:	612	1,319	2,841	6,121

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Euclid Av.
Road Segment: n/o Edison Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,578 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,792 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.39%
Medium Trucks:	69.4%	10.0%	20.6%	11.39%
Heavy Trucks:	69.0%	7.6%	23.4%	8.21%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.00	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-5.48	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-6.90	2.47	-1.20	-5.21	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	71.4	68.4	67.0	74.2	74.5
Medium Trucks:	75.2	73.8	71.5	69.8	77.0	77.3
Heavy Trucks:	78.6	77.2	73.7	73.7	80.7	80.9
Vehicle Noise:	81.0	79.6	76.4	75.8	82.9	83.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	607	1,308	2,818	6,071
CNEL:	632	1,361	2,932	6,317

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Euclid Av.
Road Segment: n/o Eucalyptus Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	43,500 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,467 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	79.67%
Medium Trucks:	69.4%	10.0%	20.6%	11.78%
Heavy Trucks:	69.0%	7.6%	23.4%	8.55%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.57	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-5.73	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-7.12	2.47	-1.20	-5.21	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	71.0	68.0	66.5	73.8	74.1
Medium Trucks:	75.0	73.6	71.2	69.6	76.7	77.0
Heavy Trucks:	78.4	77.0	73.4	73.5	80.5	80.7
Vehicle Noise:	80.7	79.3	76.2	75.6	82.6	82.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	584	1,258	2,711	5,840
CNEL:	608	1,309	2,820	6,076

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Euclid Av.
Road Segment: n/o Merrill Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	42,866 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,416 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	79.36%
Medium Trucks:	69.4%	10.0%	20.6%	11.96%
Heavy Trucks:	69.0%	7.6%	23.4%	8.68%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.62	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-6.60	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-7.99	2.47	-1.20	-5.21	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:	74.6	73.4	70.4	68.9	76.2	76.5
Medium Trucks:	77.1	75.7	73.3	71.7	78.8	79.1
Heavy Trucks:	79.7	78.3	74.7	74.8	81.8	82.0
Vehicle Noise:	82.4	81.0	77.9	77.2	84.3	84.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	752	1,621	3,492	7,522
CNEL:	783	1,687	3,635	7,832

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Euclid Av.
Road Segment: n/o Kimball Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,474 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,624 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.71%
Medium Trucks:	69.4%	10.0%	20.6%	11.36%
Heavy Trucks:	69.0%	7.6%	23.4%	7.93%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.95	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-6.56	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.12	2.47	-1.20	-5.21	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:	75.0	73.7	70.7	69.2	76.5	76.8
Medium Trucks:	77.1	75.7	73.3	71.7	78.8	79.2
Heavy Trucks:	79.5	78.1	74.6	74.7	81.6	81.9
Vehicle Noise:	82.4	81.0	77.9	77.2	84.3	84.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	751	1,618	3,485	7,509
CNEL:	782	1,685	3,629	7,819

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Euclid Av.
Road Segment: n/o Bickmore Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,977 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,549 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.33%
Medium Trucks:	69.4%	10.0%	20.6%	11.43%
Heavy Trucks:	69.0%	7.6%	23.4%	8.23%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.40	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.06	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.49	2.47	-1.20	-5.21	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:	73.4	72.2	69.1	67.7	74.9	75.2
Medium Trucks:	75.6	74.2	71.8	70.2	77.3	77.7
Heavy Trucks:	78.2	76.8	73.2	73.3	80.3	80.5
Vehicle Noise:	80.9	79.6	76.5	75.8	82.8	83.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	602	1,298	2,796	6,024
CNEL:	627	1,351	2,911	6,272

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Euclid Av.
Road Segment: n/o Pine Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,848 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,459 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.30%
Medium Trucks:	69.4%	10.0%	20.6%	11.44%
Heavy Trucks:	69.0%	7.6%	23.4%	8.27%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.24	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.22	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.63	2.47	-1.20	-5.21	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	72.0	69.0	67.5	74.8	75.1
Medium Trucks:	75.5	74.1	71.7	70.0	77.2	77.5
Heavy Trucks:	78.0	76.6	73.1	73.2	80.1	80.4
Vehicle Noise:	80.8	79.4	76.3	75.6	82.7	83.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	589	1,269	2,734	5,890
CNEL:	613	1,321	2,847	6,133

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Euclid Av.
Road Segment: s/o Pine Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	50,668 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	4,038 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.72%
Medium Trucks:	69.4%	10.0%	20.6%	11.40%
Heavy Trucks:	69.0%	7.6%	23.4%	7.89%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.42	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-6.08	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-7.68	2.47	-1.20	-5.21	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:	75.4	74.2	71.2	69.7	77.0	77.3
Medium Trucks:	77.6	76.2	73.8	72.2	79.3	79.6
Heavy Trucks:	80.0	78.6	75.0	75.1	82.1	82.3
Vehicle Noise:	82.8	81.5	78.4	77.7	84.7	85.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	806	1,736	3,741	8,060
CNEL:	839	1,808	3,896	8,393

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Grove Av.
Road Segment: n/o SR-60
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,312 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,655 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.64%
Medium Trucks:	69.4%	10.0%	20.6%	11.16%
Heavy Trucks:	69.0%	7.6%	23.4%	7.19%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.52	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.12	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.03	0.61	-1.20	*-5.34*	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	68.1	65.1	63.6	70.9	71.2
Medium Trucks:	71.7	70.3	68.0	66.3	73.5	73.8
Heavy Trucks:	74.6	73.2	69.7	69.8	76.7	77.0
Vehicle Noise:	77.2	75.8	72.7	72.1	79.1	79.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	244	525	1,130	2,436
CNEL:	254	546	1,177	2,535

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Grove Av.
Road Segment: n/o SR-60 EB Ramps
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,800 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,694 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.91%
Medium Trucks:	69.4%	10.0%	20.6%	11.00%
Heavy Trucks:	69.0%	7.6%	23.4%	7.09%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.60	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.12	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.03	0.61	-1.20	*-5.34*	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	68.2	65.2	63.7	71.0	71.3
Medium Trucks:	71.7	70.3	68.0	66.3	73.5	73.8
Heavy Trucks:	74.6	73.2	69.7	69.8	76.7	77.0
Vehicle Noise:	77.2	75.8	72.7	72.1	79.1	79.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	244	526	1,133	2,440
CNEL:	254	547	1,179	2,540

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Grove Av.
Road Segment: n/o Walnut Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,808 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,216 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	82.24%
Medium Trucks:	69.4%	10.0%	20.6%	10.80%
Heavy Trucks:	69.0%	7.6%	23.4%	6.96%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.77	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-8.05	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.96	0.61	-1.20	*-5.34*	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:	68.6	67.4	64.3	62.9	70.2	70.5
Medium Trucks:	70.8	69.4	67.0	65.4	72.5	72.9
Heavy Trucks:	73.7	72.3	68.7	68.8	75.8	76.0
Vehicle Noise:	76.3	74.9	71.8	71.2	78.2	78.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	212	457	984	2,121
CNEL:	221	476	1,025	2,208

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Grove Av.
Road Segment: n/o Riverside Dr.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,084 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,601 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	82.58%
Medium Trucks:	69.4%	10.0%	20.6%	10.60%
Heavy Trucks:	69.0%	7.6%	23.4%	6.83%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.63	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-9.54	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-11.45	0.61	-1.20	*-5.34*	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:	67.2	66.0	62.9	61.5	68.8	69.1
Medium Trucks:	69.3	67.9	65.5	63.9	71.1	71.4
Heavy Trucks:	72.2	70.8	67.2	67.3	74.3	74.5
Vehicle Noise:	74.8	73.5	70.4	69.7	76.7	77.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	169	364	784	1,690
CNEL:	176	379	816	1,759

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Grove Av.
Road Segment: n/o Chino Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,566 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,161 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	83.45%
Medium Trucks:	69.4%	10.0%	20.6%	10.06%
Heavy Trucks:	69.0%	7.6%	23.4%	6.49%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.43	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-11.62	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.53	1.46	-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:	68.0	66.8	63.7	62.3	69.5	69.8
Medium Trucks:	69.6	68.2	65.9	64.2	71.4	71.7
Heavy Trucks:	72.1	70.7	67.1	67.2	74.2	74.4
Vehicle Noise:	75.0	73.6	70.6	69.8	76.9	77.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	144	311	670	1,444
CNEL:	150	324	698	1,504

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Grove Av.
Road Segment: n/o Schaefer Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,427 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,070 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	83.63%
Medium Trucks:	69.4%	10.0%	20.6%	9.96%
Heavy Trucks:	69.0%	7.6%	23.4%	6.42%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.78	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-12.02	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.93	1.46	-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:	67.7	66.4	63.4	61.9	69.2	69.5
Medium Trucks:	69.2	67.8	65.5	63.8	71.0	71.3
Heavy Trucks:	71.7	70.3	66.7	66.8	73.8	74.0
Vehicle Noise:	74.6	73.3	70.2	69.4	76.5	76.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	136	293	631	1,360
CNEL:	142	305	658	1,417

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Grove Av.
Road Segment: n/o Edison Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,136 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	967 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	83.87%
Medium Trucks:	69.4%	10.0%	20.6%	9.81%
Heavy Trucks:	69.0%	7.6%	23.4%	6.32%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.20	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-12.52	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.43	1.46	-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:	67.2	66.0	63.0	61.5	68.8	69.1
Medium Trucks:	68.7	67.3	65.0	63.3	70.5	70.8
Heavy Trucks:	71.2	69.8	66.2	66.3	73.3	73.5
Vehicle Noise:	74.1	72.8	69.7	69.0	76.0	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	126	272	586	1,262
CNEL:	131	283	610	1,314

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Grove Av.
Road Segment: n/o Eucalyptus Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,945 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,351 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	86.92%
Medium Trucks:	69.4%	10.0%	20.6%	7.96%
Heavy Trucks:	69.0%	7.6%	23.4%	5.13%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.60	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-11.98	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.89	1.46	-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:	68.8	67.6	64.6	63.1	70.4	70.7
Medium Trucks:	69.3	67.9	65.5	63.9	71.0	71.3
Heavy Trucks:	71.7	70.3	66.8	66.9	73.8	74.1
Vehicle Noise:	74.9	73.6	70.5	69.7	76.8	77.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	306	658	1,418
CNEL:	148	318	686	1,478

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Grove Av.
Road Segment: n/o Street A
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,710 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	694 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	83.81%
Medium Trucks:	69.4%	10.0%	20.6%	9.85%
Heavy Trucks:	69.0%	7.6%	23.4%	6.35%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.65	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-13.95	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.86	1.46	-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:	65.8	64.5	61.5	60.1	67.3	67.6
Medium Trucks:	67.3	65.9	63.5	61.9	69.0	69.4
Heavy Trucks:	69.8	68.4	64.8	64.9	71.9	72.1
Vehicle Noise:	72.7	71.3	68.3	67.5	74.6	74.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	218	471	1,014
CNEL:	106	227	490	1,056

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Grove Av.
Road Segment: n/o Merrill Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,547 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	681 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	83.50%
Medium Trucks:	69.4%	10.0%	20.6%	10.04%
Heavy Trucks:	69.0%	7.6%	23.4%	6.47%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.75	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-13.95	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.86	1.46	-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:	65.7	64.4	61.4	60.0	67.2	67.5
Medium Trucks:	67.3	65.9	63.5	61.9	69.0	69.4
Heavy Trucks:	69.8	68.4	64.8	64.9	71.9	72.1
Vehicle Noise:	72.7	71.3	68.2	67.5	74.6	74.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	218	469	1,011
CNEL:	105	227	489	1,053

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Archibald Av.
Road Segment: n/o SR-60
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,201 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,726 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.46%
Medium Trucks:	69.4%	10.0%	20.6%	11.28%
Heavy Trucks:	69.0%	7.6%	23.4%	7.27%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.17	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-7.42	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-9.33	0.61	-1.20	-5.34	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	69.5	66.5	65.0	72.3	72.6
Medium Trucks:	73.0	71.6	69.2	67.6	74.7	75.0
Heavy Trucks:	75.5	74.0	70.5	70.6	77.6	77.8
Vehicle Noise:	78.3	76.9	73.8	73.1	80.2	80.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	285	615	1,325	2,854
CNEL:	297	640	1,380	2,972

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Archibald Av.
Road Segment: n/o SR-60 EB Ramps
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,201 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,726 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.46%
Medium Trucks:	69.4%	10.0%	20.6%	11.28%
Heavy Trucks:	69.0%	7.6%	23.4%	7.27%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.17	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-7.42	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-9.33	0.61	-1.20	-5.34	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	69.5	66.5	65.0	72.3	72.6
Medium Trucks:	73.0	71.6	69.2	67.6	74.7	75.0
Heavy Trucks:	75.5	74.0	70.5	70.6	77.6	77.8
Vehicle Noise:	78.3	76.9	73.8	73.1	80.2	80.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	285	615	1,325	2,854
CNEL:	297	640	1,380	2,972

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Archibald Av.
Road Segment: n/o Riverside Dr.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,013	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,472	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.30%
Medium Trucks:	69.4%	10.0%	20.6%	11.44%
Heavy Trucks:	69.0%	7.6%	23.4%	8.26%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.68	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-7.78	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.19	0.61	-1.20	*-5.34*	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	69.0	66.0	64.5	71.8	72.1
Medium Trucks:	72.6	71.2	68.9	67.2	74.4	74.7
Heavy Trucks:	75.6	74.2	70.6	70.7	77.7	77.9
Vehicle Noise:	78.1	76.8	73.7	73.0	80.1	80.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	281	605	1,304	2,810
CNEL:	292	630	1,357	2,924

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Archibald Av.
Road Segment: n/o Chino Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,263	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,731	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.67%
Medium Trucks:	69.4%	10.0%	20.6%	11.26%
Heavy Trucks:	69.0%	7.6%	23.4%	8.07%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.13	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-7.42	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-8.87	0.61	-1.20	*-5.34*	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	69.5	66.5	65.0	72.3	72.6
Medium Trucks:	73.0	71.6	69.2	67.6	74.7	75.0
Heavy Trucks:	75.9	74.5	71.0	71.1	78.0	78.2
Vehicle Noise:	78.5	77.1	74.0	73.4	80.4	80.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	297	639	1,378	2,968
CNEL:	309	666	1,434	3,090

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Archibald Av.
Road Segment: n/o Schaefer Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,060	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,316	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.65%
Medium Trucks:	69.4%	10.0%	20.6%	11.19%
Heavy Trucks:	69.0%	7.6%	23.4%	8.16%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.00	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-8.57	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.94	0.61	-1.20	*-5.34*	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	69.9	66.9	65.4	72.7	73.0
Medium Trucks:	73.2	71.8	69.5	67.8	75.0	75.3
Heavy Trucks:	75.9	74.4	70.9	71.0	78.0	78.2
Vehicle Noise:	78.6	77.2	74.2	73.4	80.5	80.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	302	650	1,400	3,016
CNEL:	314	677	1,458	3,141

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Archibald Av.
Road Segment: n/o Edison Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,060	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,316	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.65%
Medium Trucks:	69.4%	10.0%	20.6%	11.19%
Heavy Trucks:	69.0%	7.6%	23.4%	8.16%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.00	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-8.57	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.94	0.61	-1.20	*-5.34*	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	69.9	66.9	65.4	72.7	73.0
Medium Trucks:	73.2	71.8	69.5	67.8	75.0	75.3
Heavy Trucks:	75.9	74.4	70.9	71.0	78.0	78.2
Vehicle Noise:	78.6	77.2	74.2	73.4	80.5	80.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	302	650	1,400	3,016
CNEL:	314	677	1,458	3,141

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Archibald Av.
Road Segment: n/o Eucalyptus Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,385 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,820 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	78.30%
Medium Trucks:	69.4%	10.0%	20.6%	12.25%
Heavy Trucks:	69.0%	7.6%	23.4%	9.45%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.73	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-7.33	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.45	0.61	-1.20	-5.34	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	70.7	67.6	66.2	73.4	73.7
Medium Trucks:	74.5	73.1	70.7	69.1	76.2	76.5
Heavy Trucks:	77.4	75.9	72.4	72.5	79.5	79.7
Vehicle Noise:	79.9	78.5	75.4	74.8	81.8	82.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	369	794	1,711	3,686
CNEL:	384	827	1,781	3,837

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Archibald Av.
Road Segment: n/o Merrill Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,158 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,802 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	78.28%
Medium Trucks:	69.4%	10.0%	20.6%	12.25%
Heavy Trucks:	69.0%	7.6%	23.4%	9.47%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.70	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-7.35	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.47	0.61	-1.20	-5.34	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	70.6	67.6	66.1	73.4	73.7
Medium Trucks:	74.5	73.1	70.7	69.0	76.2	76.5
Heavy Trucks:	77.3	75.9	72.4	72.5	79.4	79.7
Vehicle Noise:	79.9	78.5	75.4	74.7	81.8	82.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	367	791	1,705	3,673
CNEL:	382	824	1,774	3,823

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Archibald Av.
Road Segment: n/o Limonite Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,426 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,903 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.91%
Medium Trucks:	69.4%	10.0%	20.6%	10.77%
Heavy Trucks:	69.0%	7.6%	23.4%	7.32%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.05	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-7.76	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.44	0.61	-1.20	-5.34	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:	72.2	71.0	67.9	66.5	73.8	74.1
Medium Trucks:	74.1	72.7	70.3	68.6	75.8	76.1
Heavy Trucks:	76.4	75.0	71.4	71.5	78.5	78.7
Vehicle Noise:	79.3	77.9	74.9	74.1	81.2	81.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	335	722	1,556	3,352
CNEL:	349	752	1,621	3,491

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Archibald Av.
Road Segment: n/o Schleisman Rd.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,072 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,636 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	120 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	110.0 feet
Centerline Dist. to Observer:	110.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.73%
Medium Trucks:	69.4%	10.0%	20.6%	11.11%
Heavy Trucks:	69.0%	7.6%	23.4%	7.16%

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:	92.331
Medium Trucks:	92.235
Heavy Trucks:	92.244

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.04	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	81.00	-7.63	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-9.54	-4.09	-1.20	-5.14	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:	65.9	64.7	61.7	60.2	67.5	67.8
Medium Trucks:	68.1	66.7	64.3	62.7	69.8	70.1
Heavy Trucks:	70.5	69.1	65.6	65.7	72.7	72.9
Vehicle Noise:	73.4	72.0	68.9	68.2	75.3	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	247	532	1,145	2,468
CNEL:	257	554	1,193	2,569

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Archibald Av.
Road Segment: s/o Schleisman Rd.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,724 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,210 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	120 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	110.0 feet
Centerline Dist. to Observer:	110.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.80%
Medium Trucks:	69.4%	10.0%	20.6%	11.06%
Heavy Trucks:	69.0%	7.6%	23.4%	7.13%

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:	92.331
Medium Trucks:	92.235
Heavy Trucks:	92.244

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.28	-4.10	-1.20	*-4.78*	0.000	0.000
Medium Trucks:	81.00	-8.41	-4.09	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.32	-4.09	-1.20	*-5.14*	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	63.9	60.9	59.5	66.7	67.0
Medium Trucks:	67.3	65.9	63.5	61.9	69.0	69.3
Heavy Trucks:	69.8	68.3	64.8	64.9	71.9	72.1
Vehicle Noise:	72.6	71.2	68.1	67.4	74.5	74.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	219	472	1,016	2,189
CNEL:	228	491	1,058	2,280

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Edison Av.
Road Segment: w/o Pipeline Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	41,039 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,271 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	82.11%
Medium Trucks:	69.4%	10.0%	20.6%	10.88%
Heavy Trucks:	69.0%	7.6%	23.4%	7.01%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.45	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-6.32	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.23	0.37	-1.20	*-5.34*	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	68.8	65.8	64.3	71.6	71.9
Medium Trucks:	72.3	70.9	68.5	66.9	74.0	74.3
Heavy Trucks:	75.2	73.8	70.2	70.3	77.3	77.5
Vehicle Noise:	77.8	76.4	73.3	72.6	79.7	80.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	266	573	1,234	2,659
CNEL:	277	596	1,285	2,768

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Edison Av.
Road Segment: w/o Ramona Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,351 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,818 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	82.23%
Medium Trucks:	69.4%	10.0%	20.6%	10.81%
Heavy Trucks:	69.0%	7.6%	23.4%	6.97%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.81	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.00	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.91	0.37	-1.20	*-5.34*	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	68.2	65.1	63.7	71.0	71.3
Medium Trucks:	71.6	70.2	67.8	66.2	73.4	73.7
Heavy Trucks:	74.5	73.1	69.5	69.6	76.6	76.8
Vehicle Noise:	77.1	75.7	72.6	72.0	79.0	79.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	240	517	1,113	2,399
CNEL:	250	538	1,159	2,497

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Edison Av.
Road Segment: w/o Central Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,474 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,349 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	82.40%
Medium Trucks:	69.4%	10.0%	20.6%	10.70%
Heavy Trucks:	69.0%	7.6%	23.4%	6.90%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.03	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.83	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.74	0.37	-1.20	*-5.34*	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:	68.6	67.4	64.4	62.9	70.2	70.5
Medium Trucks:	70.8	69.4	67.0	65.4	72.5	72.8
Heavy Trucks:	73.7	72.3	68.7	68.8	75.8	76.0
Vehicle Noise:	76.3	74.9	71.8	71.1	78.2	78.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	211	455	981	2,114
CNEL:	220	474	1,021	2,200

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Edison Av.
Road Segment: w/o Mountain Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,122 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,720 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	82.35%
Medium Trucks:	69.4%	10.0%	20.6%	10.74%
Heavy Trucks:	69.0%	7.6%	23.4%	6.92%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.66	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.18	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.09	0.37	-1.20	*-5.34*	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	68.0	65.0	63.5	70.8	71.1
Medium Trucks:	71.4	70.0	67.7	66.0	73.2	73.5
Heavy Trucks:	74.3	72.9	69.4	69.5	76.4	76.7
Vehicle Noise:	76.9	75.6	72.5	71.8	78.8	79.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	233	503	1,083	2,334
CNEL:	243	523	1,128	2,430

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Edison Av.
Road Segment: w/o San Antonio Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,605 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,359 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	82.60%
Medium Trucks:	69.4%	10.0%	20.6%	10.58%
Heavy Trucks:	69.0%	7.6%	23.4%	6.82%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.06	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.86	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.77	0.37	-1.20	*-5.34*	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	67.4	64.4	62.9	70.2	70.5
Medium Trucks:	70.8	69.4	67.0	65.3	72.5	72.8
Heavy Trucks:	73.6	72.2	68.7	68.8	75.7	76.0
Vehicle Noise:	76.3	74.9	71.8	71.1	78.2	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	211	454	978	2,107
CNEL:	219	473	1,018	2,193

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Edison Av.
Road Segment: w/o Euclid Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,647 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,964 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	82.84%
Medium Trucks:	69.4%	10.0%	20.6%	10.43%
Heavy Trucks:	69.0%	7.6%	23.4%	6.72%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.28	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-8.72	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.63	0.37	-1.20	*-5.34*	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	66.6	63.6	62.2	69.4	69.7
Medium Trucks:	69.9	68.5	66.1	64.5	71.6	71.9
Heavy Trucks:	72.8	71.4	67.8	67.9	74.9	75.1
Vehicle Noise:	75.4	74.0	71.0	70.3	77.3	77.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	185	399	859	1,850
CNEL:	193	415	894	1,926

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Edison Av.
Road Segment: e/o Euclid Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,968 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,432 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	84.91%
Medium Trucks:	69.4%	10.0%	20.6%	9.17%
Heavy Trucks:	69.0%	7.6%	23.4%	5.91%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.45	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-11.11	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-13.02	2.47	-1.20	*-5.21*	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:	70.0	68.7	65.7	64.3	71.5	71.8
Medium Trucks:	71.2	69.8	67.4	65.7	72.9	73.2
Heavy Trucks:	73.6	72.2	68.7	68.8	75.7	76.0
Vehicle Noise:	76.6	75.3	72.2	71.4	78.5	78.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	311	669	1,441	3,106
CNEL:	323	697	1,501	3,235

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Edison Av.
Road Segment: w/o Grove Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,617 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,245 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	0.0 feet
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	85.45%
Medium Trucks:	69.4%	10.0%	20.6%	8.85%
Heavy Trucks:	69.0%	7.6%	23.4%	5.70%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.03	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-11.88	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-13.78	2.47	-1.20	-5.21	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	68.2	65.1	63.7	70.9	71.2
Medium Trucks:	70.4	69.0	66.6	65.0	72.1	72.4
Heavy Trucks:	72.9	71.4	67.9	68.0	75.0	75.2
Vehicle Noise:	75.9	74.5	71.5	70.7	77.8	78.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	278	598	1,289	2,777
CNEL:	289	623	1,343	2,893

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Edison Av.
Road Segment: w/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,536 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,238 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	0.0 feet
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.26	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-10.82	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.73	2.47	-1.20	-5.21	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	67.9	64.9	63.4	70.7	71.0
Medium Trucks:	71.4	70.1	67.7	66.0	73.2	73.5
Heavy Trucks:	73.9	72.5	68.9	69.0	76.0	76.2
Vehicle Noise:	76.7	75.3	72.2	71.5	78.6	78.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	315	678	1,461	3,147
CNEL:	328	706	1,521	3,277

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Edison Av.
Road Segment: w/o Archibald Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,069 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,679 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	0.0 feet
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	85.83%
Medium Trucks:	69.4%	10.0%	20.6%	8.62%
Heavy Trucks:	69.0%	7.6%	23.4%	5.55%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.71	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-10.69	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.60	2.47	-1.20	-5.21	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	69.5	66.4	65.0	72.3	72.6
Medium Trucks:	71.6	70.2	67.8	66.2	73.3	73.6
Heavy Trucks:	74.0	72.6	69.1	69.2	76.1	76.4
Vehicle Noise:	77.1	75.8	72.7	71.9	79.0	79.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	335	721	1,553	3,345
CNEL:	348	751	1,617	3,484

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Edison Av.
Road Segment: w/o Haven Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,465 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,348 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	0.0 feet
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.48%
Medium Trucks:	69.4%	10.0%	20.6%	10.69%
Heavy Trucks:	69.0%	7.6%	23.4%	7.83%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.52	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-8.30	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-9.65	2.47	-1.20	-5.21	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	70.7	67.7	66.2	73.5	73.8
Medium Trucks:	74.0	72.6	70.2	68.6	75.7	76.0
Heavy Trucks:	77.0	75.6	72.0	72.1	79.1	79.3
Vehicle Noise:	79.6	78.2	75.1	74.4	81.5	81.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	490	1,055	2,273	4,897
CNEL:	510	1,098	2,366	5,098

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Edison Av.
Road Segment: e/o Haven Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,037 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,394 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.38%
Medium Trucks:	69.4%	10.0%	20.6%	10.76%
Heavy Trucks:	69.0%	7.6%	23.4%	7.86%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.60	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-8.18	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.55	2.47	-1.20	*-5.21*	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:	72.0	70.8	67.8	66.3	73.6	73.9
Medium Trucks:	74.1	72.7	70.3	68.7	75.8	76.1
Heavy Trucks:	77.1	75.7	72.1	72.2	79.2	79.4
Vehicle Noise:	79.7	78.3	75.2	74.5	81.6	81.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	497	1,071	2,308	4,973
CNEL:	518	1,115	2,403	5,177

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Ontario Ranch Rd.
Road Segment: e/o Hamner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	42,213 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,364 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.38%
Medium Trucks:	69.4%	10.0%	20.6%	10.93%
Heavy Trucks:	69.0%	7.6%	23.4%	7.70%

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	2.08	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	81.00	-6.64	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-8.16	-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	68.0	65.0	63.5	70.8	71.1
Medium Trucks:	71.3	69.9	67.5	65.9	73.1	73.4
Heavy Trucks:	74.2	72.8	69.2	69.3	76.3	76.5
Vehicle Noise:	76.8	75.4	72.3	71.7	78.7	79.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	290	625	1,346	2,901
CNEL:	302	651	1,402	3,020

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Eucalyptus Av.
Road Segment: w/o Bon View Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,967 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	476 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	83.91%
Medium Trucks:	69.4%	10.0%	20.6%	9.78%
Heavy Trucks:	69.0%	7.6%	23.4%	6.31%

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:	66.51	-5.32	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-14.65	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-16.56	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:	61.3	60.0	57.0	55.6	62.8	63.1
Medium Trucks:	63.2	61.8	59.4	57.8	64.9	65.2
Heavy Trucks:	66.5	65.1	61.6	61.7	68.6	68.9
Vehicle Noise:	69.0	67.6	64.5	63.9	70.9	71.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	109	235	506
CNEL:	53	113	244	527

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Eucalyptus Av.
Road Segment: w/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,243 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	577 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	93.52%
Medium Trucks:	69.4%	10.0%	20.6%	3.94%
Heavy Trucks:	69.0%	7.6%	23.4%	2.54%

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:	66.51	-4.00	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-17.75	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-19.66	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:	62.6	61.3	58.3	56.9	64.1	64.4
Medium Trucks:	60.1	58.7	56.3	54.6	61.8	62.1
Heavy Trucks:	63.4	62.0	58.5	58.6	65.5	65.8
Vehicle Noise:	67.0	65.7	62.6	61.8	68.9	69.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	80	171	369
CNEL:	38	83	179	385

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Eucalyptus Av.
Road Segment: e/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,060 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	642 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	93.79%
Medium Trucks:	69.4%	10.0%	20.6%	3.78%
Heavy Trucks:	69.0%	7.6%	23.4%	2.43%

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:	66.51	-3.53	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-17.48	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-19.39	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:	63.1	61.8	58.8	57.3	64.6	64.9
Medium Trucks:	60.3	59.0	56.6	54.9	62.1	62.4
Heavy Trucks:	63.7	62.3	58.8	58.8	65.8	66.0
Vehicle Noise:	67.4	66.0	62.9	62.1	69.2	69.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	181	389
CNEL:	41	87	188	406

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Eucalyptus Av.
Road Segment: w/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,943 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	474 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	91.58%
Medium Trucks:	69.4%	10.0%	20.6%	5.12%
Heavy Trucks:	69.0%	7.6%	23.4%	3.30%

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:	66.51	-4.95	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-17.48	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-19.39	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:	61.6	60.4	57.4	55.9	63.2	63.5
Medium Trucks:	60.3	59.0	56.6	54.9	62.1	62.4
Heavy Trucks:	63.7	62.3	58.8	58.8	65.8	66.0
Vehicle Noise:	66.9	65.5	62.4	61.7	68.8	69.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	169	364
CNEL:	38	82	176	379

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Eucalyptus Av.
Road Segment: e/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	3,500 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	279 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	85.70%
Medium Trucks:	69.4%	10.0%	20.6%	8.70%
Heavy Trucks:	69.0%	7.6%	23.4%	5.60%

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:	66.51	-7.54	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-17.48	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-19.39	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:	59.0	57.8	54.8	53.3	60.6	60.9
Medium Trucks:	60.3	59.0	56.6	54.9	62.1	62.4
Heavy Trucks:	63.7	62.3	58.8	58.8	65.8	66.0
Vehicle Noise:	66.3	64.9	61.8	61.1	68.2	68.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	155	333
CNEL:	35	75	161	346

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Merrill Av.
Road Segment: e/o Euclid Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,696 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,410 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	74.82%
Medium Trucks:	69.4%	10.0%	20.6%	12.94%
Heavy Trucks:	69.0%	7.6%	23.4%	12.24%

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	-2.06	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-9.68	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-9.92	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:	68.2	67.0	63.9	62.5	69.8	70.1
Medium Trucks:	71.4	70.0	67.7	66.0	73.2	73.5
Heavy Trucks:	75.6	74.1	70.6	70.7	77.7	77.9
Vehicle Noise:	77.5	76.1	73.0	72.4	79.5	79.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	188	406	875	1,884
CNEL:	196	422	909	1,959

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Merrill Av.
Road Segment: w/o Grove Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,853 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,582 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	75.68%
Medium Trucks:	69.4%	10.0%	20.6%	12.67%
Heavy Trucks:	69.0%	7.6%	23.4%	11.65%

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	-1.51	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-9.27	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-9.64	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:	68.8	67.5	64.5	63.0	70.3	70.6
Medium Trucks:	71.8	70.4	68.1	66.4	73.6	73.9
Heavy Trucks:	75.8	74.4	70.9	71.0	77.9	78.2
Vehicle Noise:	77.9	76.5	73.3	72.8	79.8	80.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	199	428	922	1,986
CNEL:	207	445	958	2,065

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Merrill Av.
Road Segment: e/o Grove Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,140 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,605 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	77.49%
Medium Trucks:	69.4%	10.0%	20.6%	12.02%
Heavy Trucks:	69.0%	7.6%	23.4%	10.49%

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	-1.35	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-9.44	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-10.03	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:	68.9	67.7	64.7	63.2	70.5	70.8
Medium Trucks:	71.7	70.3	67.9	66.2	73.4	73.7
Heavy Trucks:	75.5	74.0	70.5	70.6	77.6	77.8
Vehicle Noise:	77.6	76.2	73.1	72.5	79.5	79.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	190	410	884	1,905
CNEL:	198	427	920	1,981

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Merrill Av.
Road Segment: e/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,684 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,728 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	77.76%
Medium Trucks:	69.4%	10.0%	20.6%	11.97%
Heavy Trucks:	69.0%	7.6%	23.4%	10.27%

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	-1.01	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	-9.81	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:	69.3	68.0	65.0	63.5	70.8	71.1
Medium Trucks:	72.0	70.6	68.2	66.6	73.7	74.0
Heavy Trucks:	75.7	74.3	70.7	70.8	77.8	78.0
Vehicle Noise:	77.9	76.5	73.3	72.8	79.8	80.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	198	427	920	1,982
CNEL:	206	444	957	2,061

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Merrill Av.
Road Segment: w/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,222 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,691 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	77.83%
Medium Trucks:	69.4%	10.0%	20.6%	11.90%
Heavy Trucks:	69.0%	7.6%	23.4%	10.27%

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	-1.10	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-9.26	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-9.90	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:	69.2	67.9	64.9	63.5	70.7	71.0
Medium Trucks:	71.9	70.5	68.1	66.4	73.6	73.9
Heavy Trucks:	75.6	74.2	70.6	70.7	77.7	77.9
Vehicle Noise:	77.8	76.4	73.2	72.7	79.7	80.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	195	421	906	1,952
CNEL:	203	438	943	2,031

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Merrill Av.
Road Segment: e/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,854 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,901 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	77.40%
Medium Trucks:	69.4%	10.0%	20.6%	11.98%
Heavy Trucks:	69.0%	7.6%	23.4%	10.62%

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	-0.62	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-8.72	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-9.24	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:	69.7	68.4	65.4	63.9	71.2	71.5
Medium Trucks:	72.4	71.0	68.6	67.0	74.1	74.4
Heavy Trucks:	76.2	74.8	71.3	71.4	78.3	78.6
Vehicle Noise:	78.4	77.0	73.8	73.3	80.3	80.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	214	461	994	2,142
CNEL:	223	480	1,034	2,228

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Limonite
Road Segment: e/o Archibald Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,573 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,198 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.65%
Medium Trucks:	69.4%	10.0%	20.6%	10.85%
Heavy Trucks:	69.0%	7.6%	23.4%	7.50%

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	0.70	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-8.06	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.67	-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:	66.1	64.9	61.8	60.4	67.7	67.9
Medium Trucks:	68.3	67.0	64.6	62.9	70.1	70.4
Heavy Trucks:	71.5	70.1	66.6	66.7	73.6	73.9
Vehicle Noise:	74.0	72.6	69.5	68.9	75.9	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	189	407	876	1,888
CNEL:	196	423	912	1,965

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Limonite
Road Segment: w/o Sumner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,395 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,343 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.63%
Medium Trucks:	69.4%	10.0%	20.6%	10.88%
Heavy Trucks:	69.0%	7.6%	23.4%	7.48%

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	0.98	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-7.77	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.40	-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:	66.4	65.1	62.1	60.7	67.9	68.2
Medium Trucks:	68.6	67.2	64.9	63.2	70.4	70.7
Heavy Trucks:	71.8	70.4	66.8	66.9	73.9	74.1
Vehicle Noise:	74.3	72.9	69.8	69.1	76.2	76.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	197	424	914	1,970
CNEL:	205	442	952	2,050

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Limonite
Road Segment: w/o Scholar Wy.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,710 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,288 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.53%
Medium Trucks:	69.4%	10.0%	20.6%	10.94%
Heavy Trucks:	69.0%	7.6%	23.4%	7.53%

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	0.87	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-7.85	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.47	-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:	66.3	65.0	62.0	60.6	67.8	68.1
Medium Trucks:	68.6	67.2	64.8	63.1	70.3	70.6
Heavy Trucks:	71.7	70.3	66.8	66.9	73.8	74.1
Vehicle Noise:	74.2	72.8	69.7	69.1	76.1	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	195	419	903	1,945
CNEL:	202	436	940	2,024

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Limonite
Road Segment: w/o Hamner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,354 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,340 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.53%
Medium Trucks:	69.4%	10.0%	20.6%	10.95%
Heavy Trucks:	69.0%	7.6%	23.4%	7.53%

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	0.97	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-7.75	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.38	-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:	66.4	65.1	62.1	60.7	67.9	68.2
Medium Trucks:	68.7	67.3	64.9	63.2	70.4	70.7
Heavy Trucks:	71.8	70.4	66.9	67.0	73.9	74.2
Vehicle Noise:	74.3	72.9	69.8	69.2	76.2	76.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	197	425	916	1,974
CNEL:	205	443	954	2,054

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2026+A+B+C
Road Name: Limonite
Road Segment: e/o Hamner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,387 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,422 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.42%
Medium Trucks:	69.4%	10.0%	20.6%	11.02%
Heavy Trucks:	69.0%	7.6%	23.4%	7.56%

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	1.11	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-7.57	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.21	-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:	66.5	65.3	62.2	60.8	68.1	68.4
Medium Trucks:	68.8	67.4	65.1	63.4	70.6	70.9
Heavy Trucks:	72.0	70.6	67.0	67.1	74.1	74.3
Vehicle Noise:	74.5	73.1	70.0	69.3	76.4	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	203	436	940	2,025
CNEL:	211	454	978	2,108

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040
Road Name: Euclid Av.
Road Segment: n/o SR-60
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,779 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,649 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.40	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	77.72	-5.16	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	82.99	-7.07	2.47	-1.20	-5.21	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:	71.1	69.9	66.9	65.4	72.7	73.0
Medium Trucks:	73.8	72.4	70.0	68.4	75.6	75.9
Heavy Trucks:	77.2	75.8	72.2	72.3	79.3	79.5
Vehicle Noise:	79.5	78.1	75.0	74.4	81.4	81.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	487	1,049	2,259	4,867
CNEL:	506	1,091	2,350	5,064

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040
Road Name: Euclid Av.
Road Segment: n/o SR-60 EB Ramps
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	49,241 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,925 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.20	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-5.36	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-7.27	2.47	-1.20	-5.21	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	71.6	68.6	67.2	74.4	74.7
Medium Trucks:	75.4	74.0	71.6	69.9	77.1	77.4
Heavy Trucks:	78.3	76.8	73.3	73.4	80.4	80.6
Vehicle Noise:	80.8	79.4	76.3	75.7	82.7	83.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	593	1,277	2,752	5,930
CNEL:	617	1,330	2,865	6,172

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Walnut Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	50,427 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	4,019 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.31	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-5.25	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-7.16	2.47	-1.20	-5.21	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:	73.0	71.7	68.7	67.3	74.5	74.8
Medium Trucks:	75.5	74.1	71.7	70.0	77.2	77.5
Heavy Trucks:	78.4	76.9	73.4	73.5	80.5	80.7
Vehicle Noise:	80.9	79.5	76.4	75.8	82.8	83.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	602	1,298	2,796	6,024
CNEL:	627	1,351	2,911	6,271

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Riverside Dr.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,619 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,795 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.06	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-5.50	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-7.41	2.47	-1.20	-5.21	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	71.5	68.5	67.0	74.3	74.6
Medium Trucks:	75.2	73.8	71.4	69.8	77.0	77.3
Heavy Trucks:	78.1	76.7	73.1	73.2	80.2	80.4
Vehicle Noise:	80.7	79.3	76.2	75.5	82.6	82.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	580	1,249	2,691	5,799
CNEL:	604	1,300	2,802	6,036

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Chino Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	46,149 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,678 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.92	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-5.64	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-7.55	2.47	-1.20	-5.21	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	71.4	68.3	66.9	74.1	74.4
Medium Trucks:	75.1	73.7	71.3	69.7	76.8	77.1
Heavy Trucks:	78.0	76.6	73.0	73.1	80.1	80.3
Vehicle Noise:	80.5	79.2	76.1	75.4	82.4	82.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	568	1,223	2,636	5,679
CNEL:	591	1,273	2,744	5,911

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Schaefer Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	46,294 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,690 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.94	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-5.62	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-7.53	2.47	-1.20	-5.21	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	71.4	68.3	66.9	74.2	74.5
Medium Trucks:	75.1	73.7	71.3	69.7	76.8	77.1
Heavy Trucks:	78.0	76.6	73.0	73.1	80.1	80.3
Vehicle Noise:	80.5	79.2	76.1	75.4	82.5	82.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	569	1,226	2,641	5,691
CNEL:	592	1,276	2,749	5,923

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | *Project Name:* Merrill Commerce Center
Road Name: Euclid Av. | *Job Number:* 12005
Road Segment: n/o Edison Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	48,845	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,893	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	3.17	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-5.39	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-7.30	2.47	-1.20	*-5.21*	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	71.6	68.6	67.1	74.4	74.7
Medium Trucks:	75.3	73.9	71.6	69.9	77.1	77.4
Heavy Trucks:	78.2	76.8	73.3	73.4	80.3	80.5
Vehicle Noise:	80.8	79.4	76.3	75.6	82.7	83.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	590	1,271	2,737	5,898
CNEL:	614	1,323	2,849	6,139

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | *Project Name:* Merrill Commerce Center
Road Name: Euclid Av. | *Job Number:* 12005
Road Segment: n/o Eucalyptus Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,972	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,664	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	2.91	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-5.66	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-7.56	2.47	-1.20	*-5.21*	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	71.3	68.3	66.9	74.1	74.4
Medium Trucks:	75.1	73.7	71.3	69.6	76.8	77.1
Heavy Trucks:	78.0	76.5	73.0	73.1	80.1	80.3
Vehicle Noise:	80.5	79.1	76.0	75.4	82.4	82.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	566	1,220	2,629	5,664
CNEL:	590	1,270	2,737	5,896

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | *Project Name:* Merrill Commerce Center
Road Name: Euclid Av. | *Job Number:* 12005
Road Segment: n/o Merrill Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	48,126	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,836	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	2.23	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-6.33	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-8.24	2.47	-1.20	*-5.21*	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:	75.2	74.0	71.0	69.5	76.8	77.1
Medium Trucks:	77.3	76.0	73.6	71.9	79.1	79.4
Heavy Trucks:	79.4	78.0	74.5	74.6	81.5	81.8
Vehicle Noise:	82.4	81.1	78.0	77.2	84.3	84.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	757	1,632	3,516	7,575
CNEL:	789	1,700	3,662	7,890

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | *Project Name:* Merrill Commerce Center
Road Name: Euclid Av. | *Job Number:* 12005
Road Segment: n/o Kimball Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,635	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,796	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	2.19	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-6.37	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-8.28	2.47	-1.20	*-5.21*	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:	75.2	73.9	70.9	69.5	76.7	77.0
Medium Trucks:	77.3	75.9	73.5	71.9	79.0	79.4
Heavy Trucks:	79.4	78.0	74.4	74.5	81.5	81.7
Vehicle Noise:	82.4	81.0	78.0	77.2	84.3	84.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	752	1,621	3,492	7,523
CNEL:	784	1,688	3,637	7,836

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Bickmore Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,201 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,885 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.00	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-7.56	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.47	2.47	-1.20	*-5.21*	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:	74.0	72.8	69.7	68.3	75.5	75.8
Medium Trucks:	76.1	74.7	72.3	70.7	77.8	78.2
Heavy Trucks:	78.2	76.8	73.2	73.3	80.3	80.5
Vehicle Noise:	81.2	79.8	76.8	76.0	83.1	83.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	626	1,350	2,908	6,265
CNEL:	653	1,406	3,029	6,526

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Pine Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,928 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,624 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.59	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-7.98	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.88	2.47	-1.20	*-5.21*	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:	73.6	72.3	69.3	67.9	75.1	75.4
Medium Trucks:	75.7	74.3	71.9	70.3	77.4	77.8
Heavy Trucks:	77.8	76.4	72.8	72.9	79.9	80.1
Vehicle Noise:	80.8	79.4	76.4	75.6	82.7	82.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	588	1,267	2,730	5,881
CNEL:	613	1,320	2,844	6,126

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: s/o Pine Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	53,527 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	4,266 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.70	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-5.87	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-7.77	2.47	-1.20	*-5.21*	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:	75.7	74.5	71.4	70.0	77.2	77.5
Medium Trucks:	77.8	76.4	74.0	72.4	79.5	79.9
Heavy Trucks:	79.9	78.5	74.9	75.0	82.0	82.2
Vehicle Noise:	82.9	81.5	78.5	77.7	84.8	85.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	813	1,752	3,774	8,131
CNEL:	847	1,825	3,931	8,470

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o SR-60

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	43,993 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,506 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.72	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-5.85	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-7.75	0.61	-1.20	*-5.34*	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	69.3	66.3	64.8	72.1	72.4
Medium Trucks:	73.0	71.6	69.2	67.6	74.7	75.1
Heavy Trucks:	75.9	74.5	70.9	71.0	78.0	78.2
Vehicle Noise:	78.5	77.1	74.0	73.3	80.4	80.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	296	637	1,372	2,955
CNEL:	308	663	1,428	3,076

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | *Project Name:* Merrill Commerce Center
Road Name: Grove Av. | *Job Number:* 12005
Road Segment: n/o SR-60 EB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	43,993	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,506	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	2.72	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-5.85	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-7.75	0.61	-1.20	*-5.34*	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	69.3	66.3	64.8	72.1	72.4
Medium Trucks:	73.0	71.6	69.2	67.6	74.7	75.1
Heavy Trucks:	75.9	74.5	70.9	71.0	78.0	78.2
Vehicle Noise:	78.5	77.1	74.0	73.3	80.4	80.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	296	637	1,372	2,955
CNEL:	308	663	1,428	3,076

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | *Project Name:* Merrill Commerce Center
Road Name: Grove Av. | *Job Number:* 12005
Road Segment: n/o Walnut Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,876	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,620	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.45	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.11	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.02	0.61	-1.20	*-5.34*	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	68.1	65.0	63.6	70.8	71.1
Medium Trucks:	71.7	70.4	68.0	66.3	73.5	73.8
Heavy Trucks:	74.6	73.2	69.7	69.8	76.7	77.0
Vehicle Noise:	77.2	75.8	72.7	72.1	79.1	79.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	243	524	1,130	2,434
CNEL:	253	546	1,176	2,533

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | *Project Name:* Merrill Commerce Center
Road Name: Grove Av. | *Job Number:* 12005
Road Segment: n/o Riverside Dr.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,971	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,831	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.11	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-8.67	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.58	0.61	-1.20	*-5.34*	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:	67.7	66.5	63.5	62.0	69.3	69.6
Medium Trucks:	70.2	68.8	66.4	64.8	71.9	72.2
Heavy Trucks:	73.1	71.7	68.1	68.2	75.2	75.4
Vehicle Noise:	75.7	74.3	71.2	70.5	77.6	77.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	192	413	890	1,916
CNEL:	199	430	926	1,995

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | *Project Name:* Merrill Commerce Center
Road Name: Grove Av. | *Job Number:* 12005
Road Segment: n/o Chino Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,231	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,134	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	62	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-2.64	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-11.21	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-13.11	1.46	-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:	67.8	66.5	63.5	62.1	69.3	69.6
Medium Trucks:	70.1	68.7	66.3	64.6	71.8	72.1
Heavy Trucks:	72.5	71.1	67.6	67.7	74.6	74.9
Vehicle Noise:	75.3	73.9	70.9	70.1	77.2	77.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	151	326	703	1,514
CNEL:	158	340	732	1,576

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o Schaefer Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,978 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,034 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.04	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-11.61	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.51	1.46	-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:	67.4	66.1	63.1	61.7	68.9	69.2
Medium Trucks:	69.7	68.3	65.9	64.2	71.4	71.7
Heavy Trucks:	72.1	70.7	67.2	67.3	74.2	74.5
Vehicle Noise:	74.9	73.5	70.5	69.7	76.8	77.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	307	661	1,424
CNEL:	148	319	688	1,482

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o Edison Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,558 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	921 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.55	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-12.11	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.02	1.46	-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:	66.9	65.6	62.6	61.2	68.4	68.7
Medium Trucks:	69.2	67.8	65.4	63.7	70.9	71.2
Heavy Trucks:	71.6	70.2	66.7	66.8	73.7	73.9
Vehicle Noise:	74.4	73.0	70.0	69.2	76.3	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	132	284	612	1,318
CNEL:	137	296	637	1,372

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o Eucalyptus Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,894 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,187 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.45	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-11.01	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.92	1.46	-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:	68.0	66.7	63.7	62.3	69.5	69.8
Medium Trucks:	70.3	68.9	66.5	64.8	72.0	72.3
Heavy Trucks:	72.7	71.3	67.8	67.9	74.8	75.0
Vehicle Noise:	75.5	74.1	71.1	70.3	77.4	77.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	156	336	724	1,561
CNEL:	162	350	754	1,625

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o Street A

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,780 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	939 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.46	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-12.03	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.93	1.46	-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:	67.0	65.7	62.7	61.2	68.5	68.8
Medium Trucks:	69.2	67.8	65.5	63.8	71.0	71.3
Heavy Trucks:	71.7	70.3	66.7	66.8	73.8	74.0
Vehicle Noise:	74.5	73.1	70.0	69.3	76.4	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	133	288	619	1,335
CNEL:	139	299	645	1,390

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Grove Av. | Job Number: 12005
Road Segment: n/o Merrill Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,780 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	939 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.46	1.42	-1.20	*-4.65*	0.000	0.000
Medium Trucks:	81.00	-12.03	1.46	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-13.93	1.46	-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:	67.0	65.7	62.7	61.2	68.5	68.8
Medium Trucks:	69.2	67.8	65.5	63.8	71.0	71.3
Heavy Trucks:	71.7	70.3	66.7	66.8	73.8	74.0
Vehicle Noise:	74.5	73.1	70.0	69.3	76.4	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	133	288	619	1,335
CNEL:	139	299	645	1,390

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o SR-60

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,040 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,111 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.74	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-6.82	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-8.73	0.61	-1.20	*-5.34*	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	70.1	67.1	65.6	72.9	73.2
Medium Trucks:	73.6	72.2	69.8	68.2	75.3	75.6
Heavy Trucks:	76.1	74.6	71.1	71.2	78.2	78.4
Vehicle Noise:	78.9	77.5	74.4	73.7	80.8	81.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	313	673	1,451	3,125
CNEL:	325	701	1,511	3,255

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o SR-60 EB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,040 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,111 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.74	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-6.82	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-8.73	0.61	-1.20	*-5.34*	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	70.1	67.1	65.6	72.9	73.2
Medium Trucks:	73.6	72.2	69.8	68.2	75.3	75.6
Heavy Trucks:	76.1	74.6	71.1	71.2	78.2	78.4
Vehicle Noise:	78.9	77.5	74.4	73.7	80.8	81.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	313	673	1,451	3,125
CNEL:	325	701	1,511	3,255

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Riverside Dr.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,033 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,553 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.88	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-7.68	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.59	0.61	-1.20	*-5.34*	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:	70.5	69.2	66.2	64.7	72.0	72.3
Medium Trucks:	72.7	71.3	69.0	67.3	74.5	74.8
Heavy Trucks:	75.2	73.8	70.2	70.3	77.3	77.5
Vehicle Noise:	78.0	76.6	73.5	72.8	79.9	80.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	274	590	1,271	2,739
CNEL:	285	615	1,324	2,852

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Chino Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,944 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,785 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.26	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-7.30	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.21	0.61	-1.20	*-5.34*	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	69.6	66.6	65.1	72.4	72.7
Medium Trucks:	73.1	71.7	69.3	67.7	74.8	75.2
Heavy Trucks:	75.6	74.2	70.6	70.7	77.7	77.9
Vehicle Noise:	78.4	77.0	73.9	73.2	80.3	80.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	290	625	1,347	2,903
CNEL:	302	651	1,403	3,023

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Schaefer Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,439 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,824 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.90	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-7.66	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.57	0.61	-1.20	*-5.34*	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	70.8	67.8	66.3	73.6	73.9
Medium Trucks:	74.2	72.8	70.4	68.7	75.9	76.2
Heavy Trucks:	76.2	74.8	71.3	71.4	78.3	78.6
Vehicle Noise:	79.3	77.9	74.8	74.1	81.1	81.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	332	715	1,541	3,319
CNEL:	346	745	1,605	3,457

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Edison Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,364 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,420 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.23	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-8.33	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.24	0.61	-1.20	*-5.34*	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	70.2	67.1	65.7	72.9	73.2
Medium Trucks:	73.5	72.1	69.7	68.1	75.2	75.5
Heavy Trucks:	75.6	74.2	70.6	70.7	77.7	77.9
Vehicle Noise:	78.6	77.2	74.2	73.4	80.5	80.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	299	645	1,390	2,994
CNEL:	312	672	1,448	3,119

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Eucalyptus Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,017 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,950 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.09	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	82.40	-7.47	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.38	0.61	-1.20	*-5.34*	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	71.0	68.0	66.5	73.8	74.1
Medium Trucks:	74.3	73.0	70.6	68.9	76.1	76.4
Heavy Trucks:	76.4	75.0	71.5	71.6	78.5	78.8
Vehicle Noise:	79.4	78.1	75.0	74.3	81.3	81.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	342	736	1,586	3,417
CNEL:	356	767	1,652	3,559

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Merrill Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,766 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,930 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.06	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-7.50	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.41	0.61	-1.20	-5.34	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:	72.2	71.0	68.0	66.5	73.8	74.1
Medium Trucks:	74.3	72.9	70.5	68.9	76.1	76.4
Heavy Trucks:	76.4	75.0	71.4	71.5	78.5	78.7
Vehicle Noise:	79.4	78.0	75.0	74.2	81.3	81.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	340	733	1,579	3,401
CNEL:	354	763	1,645	3,543

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Limonite Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,439 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,542 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.89	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-6.67	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.58	0.61	-1.20	-5.34	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	71.8	68.8	67.3	74.6	74.9
Medium Trucks:	75.1	73.7	71.4	69.7	76.9	77.2
Heavy Trucks:	77.2	75.8	72.3	72.4	79.3	79.6
Vehicle Noise:	80.2	78.9	75.8	75.0	82.1	82.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	386	832	1,791	3,860
CNEL:	402	866	1,866	4,020

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: n/o Schleisman Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,686 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,605 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	120 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	110.0 feet
Centerline Dist. to Observer:	110.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	92.331
Medium Trucks:	92.235
Heavy Trucks:	92.244

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.97	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	81.00	-7.59	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-9.50	-4.09	-1.20	-5.14	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:	65.9	64.6	61.6	60.2	67.4	67.7
Medium Trucks:	68.1	66.7	64.3	62.7	69.8	70.2
Heavy Trucks:	70.6	69.2	65.6	65.7	72.7	72.9
Vehicle Noise:	73.4	72.0	68.9	68.2	75.3	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	247	533	1,148	2,474
CNEL:	258	555	1,196	2,576

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Archibald Av. | Job Number: 12005
Road Segment: s/o Schleisman Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,548 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,196 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	120 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	110.0 feet
Centerline Dist. to Observer:	110.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	92.331
Medium Trucks:	92.235
Heavy Trucks:	92.244

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.22	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	81.00	-8.34	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-10.25	-4.09	-1.20	-5.14	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:	65.1	63.9	60.9	59.4	66.7	67.0
Medium Trucks:	67.4	66.0	63.6	61.9	69.1	69.4
Heavy Trucks:	69.8	68.4	64.9	65.0	71.9	72.2
Vehicle Noise:	72.6	71.3	68.2	67.5	74.5	74.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	221	476	1,025	2,208
CNEL:	230	495	1,067	2,299

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: w/o Pipeline Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,508	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,786	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.05	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-5.51	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-7.42	0.37	-1.20	*-5.34*	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	69.4	66.4	64.9	72.2	72.5
Medium Trucks:	73.1	71.7	69.3	67.7	74.8	75.2
Heavy Trucks:	76.0	74.6	71.0	71.1	78.1	78.3
Vehicle Noise:	78.6	77.2	74.1	73.4	80.5	80.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	300	646	1,391	2,997
CNEL:	312	672	1,448	3,119

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: w/o Ramona Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,269	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,891	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.88	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-6.68	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.59	0.37	-1.20	*-5.34*	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:	69.5	68.2	65.2	63.8	71.0	71.3
Medium Trucks:	71.9	70.5	68.2	66.5	73.7	74.0
Heavy Trucks:	74.8	73.4	69.9	70.0	76.9	77.2
Vehicle Noise:	77.4	76.0	72.9	72.2	79.3	79.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	250	539	1,162	2,503
CNEL:	261	561	1,209	2,606

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: w/o Central Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,599	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,439	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.14	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.42	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.33	0.37	-1.20	*-5.34*	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	67.5	64.5	63.0	70.3	70.6
Medium Trucks:	71.2	69.8	67.4	65.8	72.9	73.2
Heavy Trucks:	74.1	72.7	69.1	69.2	76.2	76.4
Vehicle Noise:	76.7	75.3	72.2	71.5	78.6	78.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	223	482	1,037	2,235
CNEL:	233	501	1,080	2,326

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: w/o Mountain Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,784	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,569	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.79	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-5.77	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-7.68	0.37	-1.20	*-5.34*	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	69.2	66.1	64.7	71.9	72.2
Medium Trucks:	72.8	71.5	69.1	67.4	74.6	74.9
Heavy Trucks:	75.7	74.3	70.8	70.9	77.8	78.1
Vehicle Noise:	78.3	76.9	73.8	73.2	80.2	80.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	288	621	1,337	2,881
CNEL:	300	646	1,392	2,999

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | *Project Name:* Merrill Commerce Center
Road Name: Edison Av. | *Job Number:* 12005
Road Segment: w/o San Antonio Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,245	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,128	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	2.22	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-6.34	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.25	0.37	-1.20	*-5.34*	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	68.6	65.6	64.1	71.4	71.7
Medium Trucks:	72.3	70.9	68.5	66.9	74.0	74.3
Heavy Trucks:	75.2	73.7	70.2	70.3	77.3	77.5
Vehicle Noise:	77.7	76.4	73.3	72.6	79.6	79.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	264	568	1,225	2,638
CNEL:	275	592	1,275	2,746

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | *Project Name:* Merrill Commerce Center
Road Name: Edison Av. | *Job Number:* 12005
Road Segment: w/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,712	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,165	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	2.27	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-6.29	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.20	0.37	-1.20	*-5.34*	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	68.6	65.6	64.2	71.4	71.7
Medium Trucks:	72.3	70.9	68.6	66.9	74.1	74.4
Heavy Trucks:	75.2	73.8	70.3	70.4	77.3	77.5
Vehicle Noise:	77.8	76.4	73.3	72.6	79.7	80.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	266	573	1,234	2,659
CNEL:	277	596	1,285	2,768

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | *Project Name:* Merrill Commerce Center
Road Name: Edison Av. | *Job Number:* 12005
Road Segment: e/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	49,894	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,977	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	2.80	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-5.76	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-7.67	2.47	-1.20	*-5.21*	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:	74.2	73.0	70.0	68.5	75.8	76.1
Medium Trucks:	76.5	75.1	72.7	71.1	78.2	78.6
Heavy Trucks:	79.0	77.6	74.0	74.1	81.1	81.3
Vehicle Noise:	81.8	80.4	77.3	76.6	83.7	83.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	685	1,476	3,180	6,850
CNEL:	713	1,537	3,311	7,133

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | *Project Name:* Merrill Commerce Center
Road Name: Edison Av. | *Job Number:* 12005
Road Segment: w/o Grove Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	54,534	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	4,346	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	3.19	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-5.37	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-7.28	2.47	-1.20	*-5.21*	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:	74.6	73.4	70.3	68.9	76.2	76.5
Medium Trucks:	76.9	75.5	73.1	71.5	78.6	79.0
Heavy Trucks:	79.4	77.9	74.4	74.5	81.5	81.7
Vehicle Noise:	82.2	80.8	77.7	77.0	84.1	84.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	727	1,566	3,374	7,269
CNEL:	757	1,631	3,513	7,569

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: w/o Walker Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,164 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,600 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.37	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-6.19	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-8.10	2.47	-1.20	-5.21	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	72.6	69.5	68.1	75.3	75.6
Medium Trucks:	76.1	74.7	72.3	70.7	77.8	78.1
Heavy Trucks:	78.5	77.1	73.6	73.7	80.6	80.9
Vehicle Noise:	81.3	80.0	76.9	76.2	83.2	83.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	641	1,381	2,975	6,410
CNEL:	667	1,438	3,098	6,675

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: w/o Archibald Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	50,661 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	4,038 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.87	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-5.69	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-7.60	2.47	-1.20	-5.21	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:	74.3	73.1	70.0	68.6	75.8	76.1
Medium Trucks:	76.6	75.2	72.8	71.2	78.3	78.6
Heavy Trucks:	79.0	77.6	74.1	74.2	81.1	81.4
Vehicle Noise:	81.8	80.5	77.4	76.7	83.7	84.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	692	1,491	3,212	6,920
CNEL:	721	1,552	3,345	7,206

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: w/o Haven Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,119 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,799 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.28	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-7.28	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-9.19	2.47	-1.20	-5.21	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	71.5	68.4	67.0	74.2	74.5
Medium Trucks:	75.0	73.6	71.2	69.6	76.7	77.0
Heavy Trucks:	77.5	76.0	72.5	72.6	79.6	79.8
Vehicle Noise:	80.2	78.9	75.8	75.1	82.1	82.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	542	1,168	2,516	5,420
CNEL:	564	1,216	2,620	5,644

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Edison Av. | Job Number: 12005
Road Segment: e/o Haven Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,038 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,952 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.51	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-7.05	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-8.96	2.47	-1.20	-5.21	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	71.7	68.7	67.2	74.5	74.8
Medium Trucks:	75.2	73.8	71.4	69.8	77.0	77.3
Heavy Trucks:	77.7	76.3	72.7	72.8	79.8	80.0
Vehicle Noise:	80.5	79.1	76.0	75.3	82.4	82.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	562	1,210	2,607	5,616
CNEL:	585	1,260	2,714	5,848

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | *Project Name:* Merrill Commerce Center
Road Name: Ontario Ranch Rd. | *Job Number:* 12005
Road Segment: e/o Hamner Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	42,256 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,368 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	2.08	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	81.00	-6.48	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-8.39	-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:	69.2	68.0	65.0	63.5	70.8	71.1
Medium Trucks:	71.5	70.1	67.7	66.1	73.2	73.5
Heavy Trucks:	73.9	72.5	69.0	69.1	76.1	76.3
Vehicle Noise:	76.7	75.4	72.3	71.6	78.6	78.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	287	617	1,330	2,866
CNEL:	298	643	1,385	2,984

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | *Project Name:* Merrill Commerce Center
Road Name: Eucalyptus Av. | *Job Number:* 12005
Road Segment: w/o Bon View Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,668 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	452 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-5.67	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-14.23	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-16.14	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:	60.9	59.7	56.6	55.2	62.5	62.8
Medium Trucks:	63.6	62.2	59.8	58.2	65.3	65.6
Heavy Trucks:	67.0	65.5	62.0	62.1	69.1	69.3
Vehicle Noise:	69.3	67.9	64.8	64.2	71.2	71.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	246	530
CNEL:	55	119	256	552

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | *Project Name:* Merrill Commerce Center
Road Name: Eucalyptus Av. | *Job Number:* 12005
Road Segment: w/o Walker Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,246 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	737 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-3.55	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-12.11	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-14.02	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:	63.0	61.8	58.8	57.3	64.6	64.9
Medium Trucks:	65.7	64.3	61.9	60.3	67.5	67.8
Heavy Trucks:	69.1	67.7	64.1	64.2	71.2	71.4
Vehicle Noise:	71.4	70.0	66.9	66.3	73.3	73.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	158	341	735
CNEL:	76	165	355	765

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | *Project Name:* Merrill Commerce Center
Road Name: Eucalyptus Av. | *Job Number:* 12005
Road Segment: e/o Walker Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,638 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	210 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-8.99	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-17.56	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-19.46	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:	57.6	56.4	53.3	51.9	59.1	59.4
Medium Trucks:	60.3	58.9	56.5	54.8	62.0	62.3
Heavy Trucks:	63.6	62.2	58.7	58.8	65.7	66.0
Vehicle Noise:	66.0	64.6	61.5	60.8	67.9	68.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	148	318
CNEL:	33	71	154	331

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | *Project Name:* Merrill Commerce Center
Road Name: Eucalyptus Av. | *Job Number:* 12005
Road Segment: w/o Vineyard Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,855 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	706 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-3.74	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-12.30	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-14.21	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:	62.9	61.6	58.6	57.1	64.4	64.7
Medium Trucks:	65.5	64.1	61.8	60.1	67.3	67.6
Heavy Trucks:	68.9	67.5	63.9	64.0	71.0	71.2
Vehicle Noise:	71.2	69.8	66.7	66.1	73.2	73.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	154	331	714
CNEL:	74	160	345	743

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | *Project Name:* Merrill Commerce Center
Road Name: Eucalyptus Av. | *Job Number:* 12005
Road Segment: e/o Vineyard Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,001 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	638 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	66.51	-4.18	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-12.74	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-14.65	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:	62.4	61.2	58.1	56.7	64.0	64.3
Medium Trucks:	65.1	63.7	61.3	59.7	66.8	67.1
Heavy Trucks:	68.5	67.0	63.5	63.6	70.6	70.8
Vehicle Noise:	70.8	69.4	66.3	65.7	72.7	73.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	310	667
CNEL:	69	150	322	694

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | *Project Name:* Merrill Commerce Center
Road Name: Merrill Av. | *Job Number:* 12005
Road Segment: e/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,917 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,269 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-2.16	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-10.72	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-12.63	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:	68.1	66.9	63.9	62.4	69.7	70.0
Medium Trucks:	70.4	69.0	66.6	65.0	72.1	72.4
Heavy Trucks:	72.9	71.4	67.9	68.0	75.0	75.2
Vehicle Noise:	75.7	74.3	71.2	70.5	77.6	77.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	140	302	651	1,403
CNEL:	146	315	678	1,461

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | *Project Name:* Merrill Commerce Center
Road Name: Merrill Av. | *Job Number:* 12005
Road Segment: w/o Grove Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,111 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,443 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-1.60	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-10.16	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-12.07	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:	68.7	67.4	64.4	63.0	70.2	70.5
Medium Trucks:	71.0	69.6	67.2	65.5	72.7	73.0
Heavy Trucks:	73.4	72.0	68.5	68.6	75.5	75.7
Vehicle Noise:	76.2	74.8	71.8	71.0	78.1	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	153	329	710	1,529
CNEL:	159	343	739	1,592

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Merrill Av. | Job Number: 12005
Road Segment: e/o Grove Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,456 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,471 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-1.51	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-10.08	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-11.98	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	67.5	64.5	63.0	70.3	70.6
Medium Trucks:	71.0	69.6	67.3	65.6	72.8	73.1
Heavy Trucks:	73.5	72.1	68.5	68.6	75.6	75.8
Vehicle Noise:	76.3	74.9	71.8	71.1	78.2	78.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	155	334	719	1,548
CNEL:	161	347	748	1,612

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Merrill Av. | Job Number: 12005
Road Segment: e/o Walker Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,153 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,606 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-1.13	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-9.69	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-11.60	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:	69.1	67.9	64.9	63.4	70.7	71.0
Medium Trucks:	71.4	70.0	67.6	66.0	73.2	73.5
Heavy Trucks:	73.9	72.5	68.9	69.0	76.0	76.2
Vehicle Noise:	76.7	75.3	72.2	71.5	78.6	78.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	164	354	762	1,642
CNEL:	171	368	794	1,710

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Merrill Av. | Job Number: 12005
Road Segment: w/o Vineyard Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,466 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,551 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-1.28	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-9.84	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-11.75	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:	69.0	67.8	64.7	63.3	70.5	70.8
Medium Trucks:	71.3	69.9	67.5	65.8	73.0	73.3
Heavy Trucks:	73.7	72.3	68.8	68.9	75.8	76.1
Vehicle Noise:	76.5	75.1	72.1	71.4	78.4	78.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	160	346	745	1,604
CNEL:	167	360	775	1,671

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Merrill Av. | Job Number: 12005
Road Segment: e/o Vineyard Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,437 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,709 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	-0.86	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-9.43	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-11.33	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:	69.4	68.2	65.1	63.7	71.0	71.3
Medium Trucks:	71.7	70.3	67.9	66.3	73.4	73.7
Heavy Trucks:	74.2	72.7	69.2	69.3	76.3	76.5
Vehicle Noise:	76.9	75.6	72.5	71.8	78.8	79.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	171	369	794	1,711
CNEL:	178	384	827	1,781

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Limonite | Job Number: 12005
Road Segment: e/o Archibald Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	41,128 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,278 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	2.42	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-6.14	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.05	-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:	67.8	66.6	63.6	62.1	69.4	69.7
Medium Trucks:	70.3	68.9	66.5	64.8	72.0	72.3
Heavy Trucks:	73.2	71.7	68.2	68.3	75.3	75.5
Vehicle Noise:	75.7	74.3	71.3	70.6	77.6	77.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	246	529	1,141	2,457
CNEL:	256	551	1,187	2,558

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Limonite | Job Number: 12005
Road Segment: w/o Sumner Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	43,632 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,477 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	2.68	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-5.88	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-7.79	-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:	68.1	66.8	63.8	62.4	69.6	69.9
Medium Trucks:	70.5	69.1	66.8	65.1	72.3	72.6
Heavy Trucks:	73.4	72.0	68.5	68.6	75.5	75.7
Vehicle Noise:	76.0	74.6	71.5	70.8	77.9	78.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	256	551	1,186	2,556
CNEL:	266	573	1,235	2,661

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Limonite | Job Number: 12005
Road Segment: w/o Scholar Wy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,095 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,036 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	2.09	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-6.47	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.38	-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:	67.5	66.3	63.2	61.8	69.0	69.3
Medium Trucks:	69.9	68.5	66.2	64.5	71.7	72.0
Heavy Trucks:	72.8	71.4	67.9	68.0	74.9	75.2
Vehicle Noise:	75.4	74.0	70.9	70.2	77.3	77.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	234	503	1,084	2,335
CNEL:	243	524	1,128	2,431

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Limonite | Job Number: 12005
Road Segment: w/o Hamner Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,544 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,594 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	1.41	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-7.16	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.06	-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:	66.8	65.6	62.5	61.1	68.4	68.7
Medium Trucks:	69.3	67.9	65.5	63.8	71.0	71.3
Heavy Trucks:	72.1	70.7	67.2	67.3	74.2	74.5
Vehicle Noise:	74.7	73.3	70.2	69.6	76.6	76.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	210	453	976	2,102
CNEL:	219	471	1,016	2,188

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 | Project Name: Merrill Commerce Center
Road Name: Limonite | Job Number: 12005
Road Segment: e/o Hamner Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	43,201 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,443 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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	2.64	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-5.93	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-7.83	-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:	68.0	66.8	63.8	62.3	69.6	69.9
Medium Trucks:	70.5	69.1	66.7	65.1	72.2	72.5
Heavy Trucks:	73.4	72.0	68.4	68.5	75.5	75.7
Vehicle Noise:	75.9	74.6	71.5	70.8	77.9	78.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	254	547	1,179	2,539
CNEL:	264	569	1,227	2,643

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o SR-60

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,941 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,662 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.43%
Medium Trucks:	69.4%	10.0%	20.6%	11.29%
Heavy Trucks:	69.0%	7.6%	23.4%	7.28%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.42	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	77.72	-5.16	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	82.99	-7.07	2.47	-1.20	*-5.21*	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	69.9	66.9	65.4	72.7	73.0
Medium Trucks:	73.8	72.4	70.0	68.4	75.6	75.9
Heavy Trucks:	77.2	75.8	72.2	72.3	79.3	79.5
Vehicle Noise:	79.5	78.1	75.0	74.4	81.4	81.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	487	1,049	2,260	4,869
CNEL:	507	1,091	2,351	5,066

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o SR-60 EB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	51,437 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	4,100 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.11%
Medium Trucks:	69.4%	10.0%	20.6%	11.61%
Heavy Trucks:	69.0%	7.6%	23.4%	8.29%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.33	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-5.06	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-6.53	2.47	-1.20	*-5.21*	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:	73.0	71.8	68.7	67.3	74.6	74.8
Medium Trucks:	75.7	74.3	71.9	70.2	77.4	77.7
Heavy Trucks:	79.0	77.6	74.0	74.1	81.1	81.3
Vehicle Noise:	81.3	80.0	76.8	76.2	83.3	83.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	643	1,386	2,987	6,435
CNEL:	670	1,443	3,108	6,696

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Walnut Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	52,623 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	4,194 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.14%
Medium Trucks:	69.4%	10.0%	20.6%	11.60%
Heavy Trucks:	69.0%	7.6%	23.4%	8.26%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.43	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-4.97	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-6.44	2.47	-1.20	*-5.21*	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	71.9	68.8	67.4	74.7	74.9
Medium Trucks:	75.8	74.4	72.0	70.3	77.5	77.8
Heavy Trucks:	79.1	77.7	74.1	74.2	81.2	81.4
Vehicle Noise:	81.4	80.0	76.9	76.3	83.4	83.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	653	1,406	3,029	6,526
CNEL:	679	1,463	3,152	6,791

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Euclid Av.
Road Segment: n/o Riverside Dr.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	49,977 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,983 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.13%
Medium Trucks:	69.4%	10.0%	20.6%	11.58%
Heavy Trucks:	69.0%	7.6%	23.4%	8.29%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.20	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-5.20	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-6.65	2.47	-1.20	*-5.21*	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	71.6	68.6	67.2	74.4	74.7
Medium Trucks:	75.5	74.1	71.7	70.1	77.3	77.6
Heavy Trucks:	78.9	77.5	73.9	74.0	81.0	81.2
Vehicle Noise:	81.2	79.8	76.7	76.1	83.1	83.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	631	1,360	2,930	6,312
CNEL:	657	1,415	3,048	6,567

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Euclid Av.
Road Segment: n/o Chino Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	48,996 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,905 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.29%
Medium Trucks:	69.4%	10.0%	20.6%	11.47%
Heavy Trucks:	69.0%	7.6%	23.4%	8.24%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.13	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-5.33	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-6.76	2.47	-1.20	*-5.21*	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	71.6	68.5	67.1	74.4	74.6
Medium Trucks:	75.4	74.0	71.6	70.0	77.1	77.4
Heavy Trucks:	78.8	77.3	73.8	73.9	80.9	81.1
Vehicle Noise:	81.1	79.7	76.6	76.0	83.0	83.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	620	1,337	2,879	6,204
CNEL:	646	1,391	2,996	6,455

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Euclid Av.
Road Segment: n/o Schaefer Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	49,304 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,930 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.36%
Medium Trucks:	69.4%	10.0%	20.6%	11.43%
Heavy Trucks:	69.0%	7.6%	23.4%	8.21%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.16	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-5.31	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-6.75	2.47	-1.20	*-5.21*	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	71.6	68.6	67.1	74.4	74.7
Medium Trucks:	75.4	74.0	71.6	70.0	77.1	77.5
Heavy Trucks:	78.8	77.3	73.8	73.9	80.9	81.1
Vehicle Noise:	81.1	79.7	76.6	76.0	83.0	83.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	622	1,339	2,886	6,217
CNEL:	647	1,394	3,003	6,469

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Euclid Av.
Road Segment: n/o Edison Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	52,018 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	4,146 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.47%
Medium Trucks:	69.4%	10.0%	20.6%	11.39%
Heavy Trucks:	69.0%	7.6%	23.4%	8.14%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.40	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	79.45	-5.10	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-6.56	2.47	-1.20	*-5.21*	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	71.8	68.8	67.4	74.6	74.9
Medium Trucks:	75.6	74.2	71.8	70.2	77.4	77.7
Heavy Trucks:	79.0	77.5	74.0	74.1	81.1	81.3
Vehicle Noise:	81.3	79.9	76.8	76.2	83.2	83.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	642	1,383	2,979	6,418
CNEL:	668	1,439	3,100	6,678

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Eucalyptus Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,680 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,800 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	79.82%
Medium Trucks:	69.4%	10.0%	20.6%	11.74%
Heavy Trucks:	69.0%	7.6%	23.4%	8.44%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.98	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-5.34	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-6.78	2.47	-1.20	-5.21	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	71.4	68.4	66.9	74.2	74.5
Medium Trucks:	75.4	74.0	71.6	70.0	77.1	77.4
Heavy Trucks:	78.7	77.3	73.8	73.9	80.8	81.1
Vehicle Noise:	81.1	79.7	76.6	75.9	83.0	83.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	617	1,330	2,865	6,173
CNEL:	642	1,384	2,982	6,424

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Merrill Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	49,182 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,920 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	79.62%
Medium Trucks:	69.4%	10.0%	20.6%	11.88%
Heavy Trucks:	69.0%	7.6%	23.4%	8.50%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.23	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-6.03	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-7.48	2.47	-1.20	-5.21	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:	75.2	74.0	71.0	69.5	76.8	77.1
Medium Trucks:	77.6	76.3	73.9	72.2	79.4	79.7
Heavy Trucks:	80.2	78.8	75.2	75.3	82.3	82.5
Vehicle Noise:	82.9	81.5	78.5	77.8	84.8	85.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	817	1,761	3,794	8,173
CNEL:	851	1,833	3,950	8,510

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Kimball Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	49,804 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,969 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.77%
Medium Trucks:	69.4%	10.0%	20.6%	11.36%
Heavy Trucks:	69.0%	7.6%	23.4%	7.88%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.35	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-6.17	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-7.76	2.47	-1.20	-5.21	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:	75.4	74.1	71.1	69.6	76.9	77.2
Medium Trucks:	77.5	76.1	73.7	72.1	79.2	79.6
Heavy Trucks:	79.9	78.5	74.9	75.0	82.0	82.2
Vehicle Noise:	82.8	81.4	78.3	77.6	84.6	84.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	796	1,715	3,694	7,958
CNEL:	829	1,786	3,847	8,288

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P | Project Name: Merrill Commerce Center
Road Name: Euclid Av. | Job Number: 12005
Road Segment: n/o Bickmore Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,208 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,045 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.50%
Medium Trucks:	69.4%	10.0%	20.6%	11.42%
Heavy Trucks:	69.0%	7.6%	23.4%	8.08%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.19	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-7.30	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.80	2.47	-1.20	-5.21	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:	74.2	72.9	69.9	68.5	75.7	76.0
Medium Trucks:	76.4	75.0	72.6	71.0	78.1	78.4
Heavy Trucks:	78.9	77.4	73.9	74.0	81.0	81.2
Vehicle Noise:	81.7	80.3	77.2	76.5	83.6	83.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	674	1,451	3,127	6,736
CNEL:	701	1,511	3,256	7,014

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Euclid Av.
Road Segment: n/o Pine Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,935	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,784	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	80.42%
Medium Trucks:	69.4%	10.0%	20.6%	11.42%
Heavy Trucks:	69.0%	7.6%	23.4%	8.15%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	0.79	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-7.68	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.15	2.47	-1.20	*-5.21*	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	72.6	69.5	68.1	75.3	75.6
Medium Trucks:	76.0	74.6	72.2	70.6	77.7	78.0
Heavy Trucks:	78.5	77.1	73.6	73.6	80.6	80.8
Vehicle Noise:	81.3	79.9	76.8	76.1	83.2	83.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	637	1,372	2,955	6,367
CNEL:	663	1,428	3,077	6,630

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Euclid Av.
Road Segment: s/o Pine Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	55,534	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	4,426	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	80.77%
Medium Trucks:	69.4%	10.0%	20.6%	11.39%
Heavy Trucks:	69.0%	7.6%	23.4%	7.84%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	2.82	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-5.68	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-7.31	2.47	-1.20	*-5.21*	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:	75.8	74.6	71.6	70.1	77.4	77.7
Medium Trucks:	78.0	76.6	74.2	72.6	79.7	80.0
Heavy Trucks:	80.4	78.9	75.4	75.5	82.5	82.7
Vehicle Noise:	83.2	81.8	78.8	78.0	85.1	85.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	855	1,841	3,967	8,547
CNEL:	890	1,918	4,131	8,901

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Grove Av.
Road Segment: n/o SR-60
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,482	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,545	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.57%
Medium Trucks:	69.4%	10.0%	20.6%	11.21%
Heavy Trucks:	69.0%	7.6%	23.4%	7.22%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	2.77	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-5.85	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-7.75	0.61	-1.20	*-5.34*	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	69.4	66.3	64.9	72.2	72.5
Medium Trucks:	73.0	71.6	69.2	67.6	74.7	75.1
Heavy Trucks:	75.9	74.5	70.9	71.0	78.0	78.2
Vehicle Noise:	78.5	77.1	74.0	73.3	80.4	80.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	296	638	1,374	2,959
CNEL:	308	664	1,430	3,081

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Grove Av.
Road Segment: n/o SR-60 EB Ramps
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,970	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,584	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.77%
Medium Trucks:	69.4%	10.0%	20.6%	11.08%
Heavy Trucks:	69.0%	7.6%	23.4%	7.14%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	2.83	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-5.85	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-7.75	0.61	-1.20	*-5.34*	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	69.4	66.4	65.0	72.2	72.5
Medium Trucks:	73.0	71.6	69.2	67.6	74.7	75.1
Heavy Trucks:	75.9	74.5	70.9	71.0	78.0	78.2
Vehicle Noise:	78.5	77.1	74.0	73.3	80.4	80.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	296	638	1,375	2,963
CNEL:	308	665	1,432	3,085

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Grove Av.
Road Segment: n/o Walnut Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,179	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,724	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	82.08%
Medium Trucks:	69.4%	10.0%	20.6%	10.90%
Heavy Trucks:	69.0%	7.6%	23.4%	7.02%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.66	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-7.11	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.02	0.61	-1.20	-5.34	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:	69.5	68.3	65.2	63.8	71.0	71.3
Medium Trucks:	71.7	70.4	68.0	66.3	73.5	73.8
Heavy Trucks:	74.6	73.2	69.7	69.8	76.7	77.0
Vehicle Noise:	77.2	75.9	72.8	72.1	79.2	79.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	245	527	1,135	2,446
CNEL:	255	548	1,182	2,546

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Grove Av.
Road Segment: n/o Riverside Dr.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,274	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,935	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	80	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	82.37%
Medium Trucks:	69.4%	10.0%	20.6%	10.72%
Heavy Trucks:	69.0%	7.6%	23.4%	6.91%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.19	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-8.67	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.58	0.61	-1.20	-5.34	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:	68.0	66.8	63.8	62.3	69.6	69.9
Medium Trucks:	70.2	68.8	66.4	64.8	71.9	72.2
Heavy Trucks:	73.1	71.7	68.1	68.2	75.2	75.4
Vehicle Noise:	75.7	74.3	71.2	70.5	77.6	77.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	193	416	896	1,930
CNEL:	201	433	932	2,009

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Grove Av.
Road Segment: n/o Chino Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,860	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,264	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	62	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	83.28%
Medium Trucks:	69.4%	10.0%	20.6%	10.17%
Heavy Trucks:	69.0%	7.6%	23.4%	6.55%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.07	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-11.21	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.11	1.46	-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:	68.4	67.1	64.1	62.6	69.9	70.2
Medium Trucks:	70.1	68.7	66.3	64.6	71.8	72.1
Heavy Trucks:	72.5	71.1	67.6	67.7	74.6	74.9
Vehicle Noise:	75.4	74.0	71.0	70.2	77.3	77.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	154	331	713	1,537
CNEL:	160	345	743	1,601

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Grove Av.
Road Segment: n/o Schaefer Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,606	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	1,164	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	62	feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	83.44%
Medium Trucks:	69.4%	10.0%	20.6%	10.07%
Heavy Trucks:	69.0%	7.6%	23.4%	6.49%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.42	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-11.61	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.51	1.46	-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:	68.0	66.8	63.7	62.3	69.6	69.8
Medium Trucks:	69.7	68.3	65.9	64.2	71.4	71.7
Heavy Trucks:	72.1	70.7	67.2	67.3	74.2	74.5
Vehicle Noise:	75.0	73.7	70.6	69.8	76.9	77.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	145	312	672	1,447
CNEL:	151	325	700	1,507

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Grove Av.
Road Segment: n/o Edison Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,187 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,051 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	83.67%
Medium Trucks:	69.4%	10.0%	20.6%	9.93%
Heavy Trucks:	69.0%	7.6%	23.4%	6.40%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.85	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-12.11	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.02	1.46	-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:	67.6	66.3	63.3	61.9	69.1	69.4
Medium Trucks:	69.2	67.8	65.4	63.7	70.9	71.2
Heavy Trucks:	71.6	70.2	66.7	66.8	73.7	73.9
Vehicle Noise:	74.5	73.2	70.1	69.4	76.4	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	134	289	623	1,342
CNEL:	140	301	649	1,398

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Grove Av.
Road Segment: n/o Eucalyptus Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,943 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,589 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	86.08%
Medium Trucks:	69.4%	10.0%	20.6%	8.46%
Heavy Trucks:	69.0%	7.6%	23.4%	5.45%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.93	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-11.01	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.92	1.46	-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:	69.5	68.3	65.2	63.8	71.0	71.3
Medium Trucks:	70.3	68.9	66.5	64.8	72.0	72.3
Heavy Trucks:	72.7	71.3	67.8	67.9	74.8	75.0
Vehicle Noise:	75.8	74.5	71.4	70.6	77.7	78.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	163	351	757	1,630
CNEL:	170	366	788	1,698

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Grove Av.
Road Segment: n/o Street A
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,920 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,030 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	83.01%
Medium Trucks:	69.4%	10.0%	20.6%	10.33%
Heavy Trucks:	69.0%	7.6%	23.4%	6.66%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.98	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-12.03	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.93	1.46	-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:	67.5	66.2	63.2	61.7	69.0	69.3
Medium Trucks:	69.2	67.8	65.5	63.8	71.0	71.3
Heavy Trucks:	71.7	70.3	66.7	66.8	73.8	74.0
Vehicle Noise:	74.6	73.2	70.1	69.4	76.5	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	135	291	627	1,352
CNEL:	141	303	653	1,408

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Grove Av.
Road Segment: n/o Merrill Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,757 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,017 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	62 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	82.79%
Medium Trucks:	69.4%	10.0%	20.6%	10.46%
Heavy Trucks:	69.0%	7.6%	23.4%	6.74%

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:	39.547
Medium Trucks:	39.323
Heavy Trucks:	39.345

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.04	1.42	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-12.03	1.46	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.93	1.46	-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:	67.4	66.1	63.1	61.7	68.9	69.2
Medium Trucks:	69.2	67.8	65.5	63.8	71.0	71.3
Heavy Trucks:	71.7	70.3	66.7	66.8	73.8	74.0
Vehicle Noise:	74.6	73.2	70.1	69.4	76.5	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	135	291	626	1,349
CNEL:	141	303	652	1,405

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Archibald Av.
Road Segment: n/o SR-60
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,203 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,124 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.44%
Medium Trucks:	69.4%	10.0%	20.6%	11.28%
Heavy Trucks:	69.0%	7.6%	23.4%	7.27%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.76	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-6.82	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-8.73	0.61	-1.20	*-5.34*	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	70.1	67.1	65.6	72.9	73.2
Medium Trucks:	73.6	72.2	69.8	68.2	75.3	75.6
Heavy Trucks:	76.1	74.6	71.1	71.2	78.2	78.4
Vehicle Noise:	78.9	77.5	74.4	73.7	80.8	81.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	313	674	1,452	3,127
CNEL:	326	702	1,511	3,256

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Archibald Av.
Road Segment: n/o SR-60 EB Ramps
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,203 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,124 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.44%
Medium Trucks:	69.4%	10.0%	20.6%	11.28%
Heavy Trucks:	69.0%	7.6%	23.4%	7.27%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.76	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-6.82	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-8.73	0.61	-1.20	*-5.34*	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	70.1	67.1	65.6	72.9	73.2
Medium Trucks:	73.6	72.2	69.8	68.2	75.3	75.6
Heavy Trucks:	76.1	74.6	71.1	71.2	78.2	78.4
Vehicle Noise:	78.9	77.5	74.4	73.7	80.8	81.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	313	674	1,452	3,127
CNEL:	326	702	1,511	3,256

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Archibald Av.
Road Segment: n/o Riverside Dr.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,040 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,713 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.40%
Medium Trucks:	69.4%	10.0%	20.6%	11.43%
Heavy Trucks:	69.0%	7.6%	23.4%	8.18%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.09	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-7.38	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-8.84	0.61	-1.20	*-5.34*	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	69.4	66.4	65.0	72.2	72.5
Medium Trucks:	73.0	71.6	69.3	67.6	74.8	75.1
Heavy Trucks:	76.0	74.5	71.0	71.1	78.1	78.3
Vehicle Noise:	78.5	77.1	74.0	73.4	80.4	80.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	298	641	1,382	2,977
CNEL:	310	668	1,439	3,099

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Archibald Av.
Road Segment: n/o Chino Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,439 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,984 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.73%
Medium Trucks:	69.4%	10.0%	20.6%	11.27%
Heavy Trucks:	69.0%	7.6%	23.4%	8.00%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.52	0.58	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-7.03	0.61	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-8.52	0.61	-1.20	*-5.34*	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:	71.1	69.9	66.8	65.4	72.7	73.0
Medium Trucks:	73.4	72.0	69.6	68.0	75.1	75.4
Heavy Trucks:	76.3	74.9	71.3	71.4	78.4	78.6
Vehicle Noise:	78.9	77.5	74.4	73.7	80.8	81.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	314	676	1,457	3,140
CNEL:	327	704	1,517	3,268

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Archibald Av.
Road Segment: n/o Schaefer Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,097 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,036 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.82%
Medium Trucks:	69.4%	10.0%	20.6%	11.22%
Heavy Trucks:	69.0%	7.6%	23.4%	7.96%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.19	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-7.38	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.88	0.61	-1.20	-5.34	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	71.1	68.1	66.6	73.9	74.2
Medium Trucks:	74.4	73.0	70.7	69.0	76.2	76.5
Heavy Trucks:	76.9	75.5	72.0	72.1	79.0	79.3
Vehicle Noise:	79.7	78.4	75.3	74.6	81.6	81.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	358	772	1,663	3,582
CNEL:	373	804	1,732	3,730

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Archibald Av.
Road Segment: n/o Edison Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,022 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,632 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	80.74%
Medium Trucks:	69.4%	10.0%	20.6%	11.21%
Heavy Trucks:	69.0%	7.6%	23.4%	8.06%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.56	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-8.01	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.44	0.61	-1.20	-5.34	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	70.5	67.5	66.0	73.3	73.6
Medium Trucks:	73.8	72.4	70.0	68.4	75.5	75.9
Heavy Trucks:	76.4	74.9	71.4	71.5	78.5	78.7
Vehicle Noise:	79.1	77.8	74.7	74.0	81.0	81.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	327	705	1,518	3,271
CNEL:	341	734	1,581	3,405

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Archibald Av.
Road Segment: n/o Eucalyptus Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,750 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,088 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	78.57%
Medium Trucks:	69.4%	10.0%	20.6%	12.17%
Heavy Trucks:	69.0%	7.6%	23.4%	9.27%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.14	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-6.96	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.14	0.61	-1.20	-5.34	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	71.1	68.0	66.6	73.8	74.1
Medium Trucks:	74.9	73.5	71.1	69.4	76.6	76.9
Heavy Trucks:	77.7	76.2	72.7	72.8	79.8	80.0
Vehicle Noise:	80.3	78.9	75.8	75.1	82.2	82.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	388	837	1,802	3,883
CNEL:	404	871	1,876	4,042

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Archibald Av.
Road Segment: n/o Merrill Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,500 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,068 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	78.55%
Medium Trucks:	69.4%	10.0%	20.6%	12.17%
Heavy Trucks:	69.0%	7.6%	23.4%	9.28%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.11	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-6.99	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.16	0.61	-1.20	-5.34	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	71.0	68.0	66.6	73.8	74.1
Medium Trucks:	74.8	73.4	71.1	69.4	76.6	76.9
Heavy Trucks:	77.6	76.2	72.7	72.8	79.7	80.0
Vehicle Noise:	80.2	78.8	75.8	75.1	82.1	82.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	387	833	1,796	3,868
CNEL:	403	868	1,869	4,027

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Archibald Av.
Road Segment: n/o Limonite Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,397 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,778 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	80 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.79%
Medium Trucks:	69.4%	10.0%	20.6%	10.90%
Heavy Trucks:	69.0%	7.6%	23.4%	7.31%

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:	45.000
Medium Trucks:	44.803
Heavy Trucks:	44.822

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.19	0.58	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-6.56	0.61	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.29	0.61	-1.20	-5.34	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:	73.4	72.1	69.1	67.6	74.9	75.2
Medium Trucks:	75.3	73.9	71.5	69.8	77.0	77.3
Heavy Trucks:	77.5	76.1	72.5	72.6	79.6	79.8
Vehicle Noise:	80.5	79.1	76.0	75.3	82.4	82.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	400	862	1,858	4,003
CNEL:	417	898	1,935	4,169

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Archibald Av.
Road Segment: n/o Schleisman Rd.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,338 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,657 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	120 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	110.0 feet
Centerline Dist. to Observer:	110.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.73%
Medium Trucks:	69.4%	10.0%	20.6%	11.11%
Heavy Trucks:	69.0%	7.6%	23.4%	7.16%

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:	92.331
Medium Trucks:	92.235
Heavy Trucks:	92.244

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.07	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	81.00	-7.59	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-9.50	-4.09	-1.20	-5.14	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:	66.0	64.7	61.7	60.3	67.5	67.8
Medium Trucks:	68.1	66.7	64.3	62.7	69.8	70.2
Heavy Trucks:	70.6	69.2	65.6	65.7	72.7	72.9
Vehicle Noise:	73.4	72.0	68.9	68.2	75.3	75.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	248	535	1,152	2,481
CNEL:	258	557	1,199	2,583

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Archibald Av.
Road Segment: s/o Schleisman Rd.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,199 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,247 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	120 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	110.0 feet
Centerline Dist. to Observer:	110.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.80%
Medium Trucks:	69.4%	10.0%	20.6%	11.07%
Heavy Trucks:	69.0%	7.6%	23.4%	7.13%

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:	92.331
Medium Trucks:	92.235
Heavy Trucks:	92.244

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.35	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	81.00	-8.34	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-10.25	-4.09	-1.20	-5.14	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	64.0	61.0	59.5	66.8	67.1
Medium Trucks:	67.4	66.0	63.6	61.9	69.1	69.4
Heavy Trucks:	69.8	68.4	64.9	65.0	71.9	72.2
Vehicle Noise:	72.7	71.3	68.2	67.5	74.6	74.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	221	477	1,028	2,215
CNEL:	231	497	1,070	2,306

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Edison Av.
Road Segment: w/o Pipeline Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	49,137 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,916 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.98%
Medium Trucks:	69.4%	10.0%	20.6%	10.96%
Heavy Trucks:	69.0%	7.6%	23.4%	7.06%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.23	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-5.51	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-7.42	0.37	-1.20	-5.34	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	69.6	66.6	65.1	72.4	72.7
Medium Trucks:	73.1	71.7	69.3	67.7	74.8	75.2
Heavy Trucks:	76.0	74.6	71.0	71.1	78.1	78.3
Vehicle Noise:	78.6	77.2	74.1	73.4	80.5	80.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	301	648	1,397	3,009
CNEL:	313	675	1,454	3,132

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Edison Av.
Road Segment: w/o Ramona Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,898	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,020	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	82.17%
Medium Trucks:	69.4%	10.0%	20.6%	10.84%
Heavy Trucks:	69.0%	7.6%	23.4%	6.99%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	2.11	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-6.68	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.59	0.37	-1.20	*-5.34*	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:	69.7	68.5	65.4	64.0	71.3	71.6
Medium Trucks:	71.9	70.5	68.2	66.5	73.7	74.0
Heavy Trucks:	74.8	73.4	69.9	70.0	76.9	77.2
Vehicle Noise:	77.4	76.0	73.0	72.3	79.3	79.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	252	542	1,168	2,517
CNEL:	262	564	1,216	2,620

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Edison Av.
Road Segment: w/o Central Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,228	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	2,569	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	82.31%
Medium Trucks:	69.4%	10.0%	20.6%	10.76%
Heavy Trucks:	69.0%	7.6%	23.4%	6.93%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.41	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-7.42	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.33	0.37	-1.20	*-5.34*	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	67.8	64.7	63.3	70.6	70.9
Medium Trucks:	71.2	69.8	67.4	65.8	72.9	73.2
Heavy Trucks:	74.1	72.7	69.1	69.2	76.2	76.4
Vehicle Noise:	76.7	75.3	72.2	71.5	78.6	78.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	225	485	1,044	2,249
CNEL:	234	504	1,087	2,342

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Edison Av.
Road Segment: w/o Mountain Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	46,575	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,712	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	82.08%
Medium Trucks:	69.4%	10.0%	20.6%	10.90%
Heavy Trucks:	69.0%	7.6%	23.4%	7.02%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	3.00	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-5.77	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-7.68	0.37	-1.20	*-5.34*	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	69.4	66.3	64.9	72.1	72.4
Medium Trucks:	72.8	71.5	69.1	67.4	74.6	74.9
Heavy Trucks:	75.7	74.3	70.8	70.9	77.8	78.1
Vehicle Noise:	78.3	77.0	73.9	73.2	80.3	80.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	290	624	1,344	2,895
CNEL:	301	649	1,399	3,014

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Edison Av.
Road Segment: w/o San Antonio Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	41,199	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,284	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	82.25%
Medium Trucks:	69.4%	10.0%	20.6%	10.79%
Heavy Trucks:	69.0%	7.6%	23.4%	6.96%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	2.48	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-6.34	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.25	0.37	-1.20	*-5.34*	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	68.8	65.8	64.4	71.6	71.9
Medium Trucks:	72.3	70.9	68.5	66.9	74.0	74.3
Heavy Trucks:	75.2	73.7	70.2	70.3	77.3	77.5
Vehicle Noise:	77.8	76.4	73.3	72.6	79.7	79.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	265	572	1,232	2,654
CNEL:	276	595	1,282	2,763

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Edison Av.
Road Segment: w/o Euclid Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	41,666	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,321	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	82.24%
Medium Trucks:	69.4%	10.0%	20.6%	10.80%
Heavy Trucks:	69.0%	7.6%	23.4%	6.96%

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:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	2.53	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-6.29	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.20	0.37	-1.20	*-5.34*	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	68.9	65.9	64.4	71.7	72.0
Medium Trucks:	72.3	70.9	68.6	66.9	74.1	74.4
Heavy Trucks:	75.2	73.8	70.3	70.4	77.3	77.5
Vehicle Noise:	77.8	76.4	73.3	72.7	79.7	80.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	268	576	1,242	2,675
CNEL:	278	600	1,293	2,785

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Edison Av.
Road Segment: e/o Euclid Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	53,314	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	4,249	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	82.56%
Medium Trucks:	69.4%	10.0%	20.6%	10.60%
Heavy Trucks:	69.0%	7.6%	23.4%	6.83%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	3.16	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-5.76	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-7.67	2.47	-1.20	*-5.21*	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:	74.6	73.3	70.3	68.9	76.1	76.4
Medium Trucks:	76.5	75.1	72.7	71.1	78.2	78.6
Heavy Trucks:	79.0	77.6	74.0	74.1	81.1	81.3
Vehicle Noise:	81.8	80.5	77.4	76.7	83.7	84.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	691	1,489	3,208	6,912
CNEL:	720	1,551	3,341	7,198

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Edison Av.
Road Segment: w/o Grove Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	57,954	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	4,619	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	82.47%
Medium Trucks:	69.4%	10.0%	20.6%	10.66%
Heavy Trucks:	69.0%	7.6%	23.4%	6.87%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	3.51	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-5.37	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-7.28	2.47	-1.20	*-5.21*	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:	74.9	73.7	70.7	69.2	76.5	76.8
Medium Trucks:	76.9	75.5	73.1	71.5	78.6	79.0
Heavy Trucks:	79.4	77.9	74.4	74.5	81.5	81.7
Vehicle Noise:	82.2	80.8	77.8	77.0	84.1	84.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	733	1,579	3,402	7,329
CNEL:	763	1,644	3,542	7,632

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Edison Av.
Road Segment: w/o Walker Av.

Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,164	vehicles
Peak Hour Percentage:	7.97%	
Peak Hour Volume:	3,600	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	71.8%	8.9%	19.2%	81.37%
Medium Trucks:	69.4%	10.0%	20.6%	11.33%
Heavy Trucks:	69.0%	7.6%	23.4%	7.30%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	2.37	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	81.00	-6.19	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-8.10	2.47	-1.20	*-5.21*	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	72.6	69.5	68.1	75.3	75.6
Medium Trucks:	76.1	74.7	72.3	70.7	77.8	78.1
Heavy Trucks:	78.5	77.1	73.6	73.7	80.6	80.9
Vehicle Noise:	81.3	80.0	76.9	76.2	83.2	83.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	641	1,381	2,975	6,410
CNEL:	667	1,438	3,098	6,675

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Edison Av.
Road Segment: w/o Archibald Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	55,710 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	4,440 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	83.06%
Medium Trucks:	69.4%	10.0%	20.6%	10.30%
Heavy Trucks:	69.0%	7.6%	23.4%	6.64%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.37	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-5.69	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-7.60	2.47	-1.20	-5.21	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:	74.8	73.6	70.5	69.1	76.3	76.6
Medium Trucks:	76.6	75.2	72.8	71.2	78.3	78.6
Heavy Trucks:	79.0	77.6	74.1	74.2	81.1	81.4
Vehicle Noise:	81.9	80.6	77.5	76.7	83.8	84.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	701	1,511	3,254	7,012
CNEL:	730	1,573	3,389	7,302

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Edison Av.
Road Segment: w/o Haven Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,080 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,115 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.45%
Medium Trucks:	69.4%	10.0%	20.6%	10.85%
Heavy Trucks:	69.0%	7.6%	23.4%	7.70%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.75	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-7.01	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-8.50	2.47	-1.20	-5.21	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	71.9	68.9	67.5	74.7	75.0
Medium Trucks:	75.3	73.9	71.5	69.8	77.0	77.3
Heavy Trucks:	78.1	76.7	73.2	73.3	80.3	80.5
Vehicle Noise:	80.8	79.4	76.3	75.6	82.7	82.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	589	1,269	2,734	5,890
CNEL:	613	1,321	2,846	6,131

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Edison Av.
Road Segment: e/o Haven Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,836 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,255 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.38%
Medium Trucks:	69.4%	10.0%	20.6%	10.91%
Heavy Trucks:	69.0%	7.6%	23.4%	7.71%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.93	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	81.00	-6.79	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-8.30	2.47	-1.20	-5.21	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:	73.4	72.1	69.1	67.6	74.9	75.2
Medium Trucks:	75.5	74.1	71.7	70.1	77.2	77.5
Heavy Trucks:	78.3	76.9	73.4	73.5	80.4	80.7
Vehicle Noise:	81.0	79.6	76.5	75.8	82.9	83.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	607	1,309	2,819	6,074
CNEL:	632	1,362	2,935	6,323

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Ontario Ranch Rd.
Road Segment: e/o Hamner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,892 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,658 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.31%
Medium Trucks:	69.4%	10.0%	20.6%	11.00%
Heavy Trucks:	69.0%	7.6%	23.4%	7.69%

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	2.44	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-6.25	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-7.80	-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:	69.6	68.3	65.3	63.9	71.1	71.4
Medium Trucks:	71.7	70.3	67.9	66.3	73.4	73.8
Heavy Trucks:	74.5	73.1	69.6	69.7	76.6	76.9
Vehicle Noise:	77.2	75.8	72.7	72.0	79.1	79.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	307	661	1,425	3,070
CNEL:	320	688	1,483	3,196

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Eucalyptus Av.
Road Segment: w/o Bon View Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,482 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	517 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	83.71%
Medium Trucks:	69.4%	10.0%	20.6%	9.91%
Heavy Trucks:	69.0%	7.6%	23.4%	6.38%

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:	66.51	-4.97	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-14.23	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-16.14	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:	61.6	60.4	57.3	55.9	63.2	63.5
Medium Trucks:	63.6	62.2	59.8	58.2	65.3	65.6
Heavy Trucks:	67.0	65.5	62.0	62.1	69.1	69.3
Vehicle Noise:	69.4	68.0	64.9	64.3	71.3	71.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	250	539
CNEL:	56	121	260	560

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Eucalyptus Av.
Road Segment: w/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,969 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,113 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	87.67%
Medium Trucks:	69.4%	10.0%	20.6%	7.50%
Heavy Trucks:	69.0%	7.6%	23.4%	4.83%

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:	66.51	-1.43	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-12.11	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-14.02	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:	65.2	63.9	60.9	59.4	66.7	67.0
Medium Trucks:	65.7	64.3	61.9	60.3	67.5	67.8
Heavy Trucks:	69.1	67.7	64.1	64.2	71.2	71.4
Vehicle Noise:	71.8	70.4	67.3	66.6	73.7	74.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	167	360	775
CNEL:	81	174	375	807

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Eucalyptus Av.
Road Segment: e/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,012 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	639 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	93.87%
Medium Trucks:	69.4%	10.0%	20.6%	3.73%
Heavy Trucks:	69.0%	7.6%	23.4%	2.40%

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:	66.51	-3.55	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-17.56	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-19.46	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:	63.0	61.8	58.8	57.3	64.6	64.9
Medium Trucks:	60.3	58.9	56.5	54.8	62.0	62.3
Heavy Trucks:	63.6	62.2	58.7	58.8	65.7	66.0
Vehicle Noise:	67.3	66.0	62.9	62.0	69.1	69.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	83	179	386
CNEL:	40	87	187	402

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Eucalyptus Av.
Road Segment: w/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,112 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	965 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	86.38%
Medium Trucks:	69.4%	10.0%	20.6%	8.28%
Heavy Trucks:	69.0%	7.6%	23.4%	5.34%

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:	66.51	-2.12	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-12.30	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-14.21	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:	64.5	63.2	60.2	58.8	66.0	66.3
Medium Trucks:	65.5	64.1	61.8	60.1	67.3	67.6
Heavy Trucks:	68.9	67.5	63.9	64.0	71.0	71.2
Vehicle Noise:	71.5	70.1	67.0	66.3	73.4	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	345	742
CNEL:	77	166	359	773

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Eucalyptus Av.
Road Segment: e/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,815 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	703 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	83.09%
Medium Trucks:	69.4%	10.0%	20.6%	10.28%
Heavy Trucks:	69.0%	7.6%	23.4%	6.63%

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:	66.51	-3.66	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-12.74	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-14.65	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:	62.9	61.7	58.7	57.2	64.5	64.8
Medium Trucks:	65.1	63.7	61.3	59.7	66.8	67.1
Heavy Trucks:	68.5	67.0	63.5	63.6	70.6	70.8
Vehicle Noise:	70.9	69.5	66.4	65.7	72.8	73.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	145	313	675
CNEL:	70	151	326	702

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Merrill Av.
Road Segment: e/o Euclid Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,143 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,526 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	75.31%
Medium Trucks:	69.4%	10.0%	20.6%	12.82%
Heavy Trucks:	69.0%	7.6%	23.4%	11.87%

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:	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	-1.69	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-9.38	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-9.72	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:	68.6	67.3	64.3	62.9	70.1	70.4
Medium Trucks:	71.7	70.3	68.0	66.3	73.5	73.8
Heavy Trucks:	75.8	74.4	70.8	70.9	77.9	78.1
Vehicle Noise:	77.8	76.4	73.2	72.7	79.7	80.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	196	422	908	1,957
CNEL:	204	438	945	2,035

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Merrill Av.
Road Segment: w/o Grove Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,499 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,714 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	76.12%
Medium Trucks:	69.4%	10.0%	20.6%	12.57%
Heavy Trucks:	69.0%	7.6%	23.4%	11.31%

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	-1.14	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-8.96	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-9.42	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:	69.1	67.9	64.9	63.4	70.7	71.0
Medium Trucks:	72.1	70.8	68.4	66.7	73.9	74.2
Heavy Trucks:	76.1	74.6	71.1	71.2	78.2	78.4
Vehicle Noise:	78.1	76.7	73.6	73.0	80.1	80.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	207	445	959	2,066
CNEL:	215	463	997	2,149

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Merrill Av.
Road Segment: e/o Grove Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,818 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,739 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	77.79%
Medium Trucks:	69.4%	10.0%	20.6%	11.97%
Heavy Trucks:	69.0%	7.6%	23.4%	10.25%

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	-0.98	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-9.11	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-9.79	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:	69.3	68.1	65.0	63.6	70.8	71.1
Medium Trucks:	72.0	70.6	68.2	66.6	73.7	74.1
Heavy Trucks:	75.7	74.3	70.7	70.8	77.8	78.0
Vehicle Noise:	77.9	76.5	73.4	72.8	79.8	80.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	199	428	923	1,988
CNEL:	207	446	960	2,068

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Merrill Av.
Road Segment: e/o Walker Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,516 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,874 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	78.04%
Medium Trucks:	69.4%	10.0%	20.6%	11.92%
Heavy Trucks:	69.0%	7.6%	23.4%	10.03%

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:	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	-0.64	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-8.80	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-9.55	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:	69.6	68.4	65.4	63.9	71.2	71.5
Medium Trucks:	72.3	70.9	68.5	66.9	74.0	74.4
Heavy Trucks:	75.9	74.5	71.0	71.1	78.0	78.3
Vehicle Noise:	78.2	76.8	73.6	73.0	80.1	80.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	207	446	961	2,071
CNEL:	215	464	1,000	2,155

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Merrill Av.
Road Segment: w/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,991 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	1,832 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	78.10%
Medium Trucks:	69.4%	10.0%	20.6%	11.86%
Heavy Trucks:	69.0%	7.6%	23.4%	10.04%

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	-0.74	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-8.93	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-9.65	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:	69.5	68.3	65.3	63.8	71.1	71.4
Medium Trucks:	72.2	70.8	68.4	66.8	73.9	74.2
Heavy Trucks:	75.8	74.4	70.9	71.0	77.9	78.2
Vehicle Noise:	78.1	76.7	73.5	72.9	80.0	80.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	204	439	947	2,039
CNEL:	212	457	985	2,122

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Merrill Av.
Road Segment: e/o Vineyard Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,803 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,057 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

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

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	77.70%
Medium Trucks:	69.4%	10.0%	20.6%	11.93%
Heavy Trucks:	69.0%	7.6%	23.4%	10.37%

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	-0.26	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-8.40	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-9.01	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:	70.0	68.8	65.7	64.3	71.6	71.9
Medium Trucks:	72.7	71.3	68.9	67.3	74.5	74.8
Heavy Trucks:	76.5	75.1	71.5	71.6	78.6	78.8
Vehicle Noise:	78.6	77.3	74.1	73.5	80.6	80.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	223	481	1,037	2,233
CNEL:	232	501	1,078	2,323

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Limonite
Road Segment: e/o Archibald Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	43,434 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,462 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.55%
Medium Trucks:	69.4%	10.0%	20.6%	11.03%
Heavy Trucks:	69.0%	7.6%	23.4%	7.43%

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	2.67	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-6.02	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-7.74	-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:	68.1	66.8	63.8	62.4	69.6	69.9
Medium Trucks:	70.4	69.0	66.6	65.0	72.1	72.4
Heavy Trucks:	73.5	72.1	68.5	68.6	75.6	75.8
Vehicle Noise:	76.0	74.6	71.5	70.8	77.9	78.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	255	550	1,185	2,553
CNEL:	266	573	1,233	2,657

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Limonite
Road Segment: w/o Sumner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,938 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,661 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.54%
Medium Trucks:	69.4%	10.0%	20.6%	11.05%
Heavy Trucks:	69.0%	7.6%	23.4%	7.42%

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	2.91	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-5.77	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-7.50	-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:	68.3	67.1	64.0	62.6	69.9	70.2
Medium Trucks:	70.6	69.2	66.9	65.2	72.4	72.7
Heavy Trucks:	73.7	72.3	68.7	68.8	75.8	76.0
Vehicle Noise:	76.2	74.8	71.7	71.1	78.1	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	265	571	1,230	2,650
CNEL:	276	594	1,280	2,758

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Limonite
Road Segment: w/o Scholar Wy.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,238 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,207 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.48%
Medium Trucks:	69.4%	10.0%	20.6%	11.05%
Heavy Trucks:	69.0%	7.6%	23.4%	7.46%

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	2.33	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-6.34	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.05	-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:	67.7	66.5	63.5	62.0	69.3	69.6
Medium Trucks:	70.1	68.7	66.3	64.6	71.8	72.1
Heavy Trucks:	73.2	71.7	68.2	68.3	75.3	75.5
Vehicle Noise:	75.7	74.3	71.2	70.5	77.6	77.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	243	524	1,129	2,432
CNEL:	253	545	1,175	2,531

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Limonite
Road Segment: w/o Hamner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,688 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	2,765 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.50%
Medium Trucks:	69.4%	10.0%	20.6%	11.01%
Heavy Trucks:	69.0%	7.6%	23.4%	7.49%

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	1.69	-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	-8.68	-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:	67.1	65.9	62.8	61.4	68.6	68.9
Medium Trucks:	69.4	68.0	65.6	64.0	71.1	71.5
Heavy Trucks:	72.5	71.1	67.6	67.7	74.6	74.9
Vehicle Noise:	75.0	73.6	70.5	69.9	76.9	77.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	220	475	1,023	2,204
CNEL:	229	494	1,065	2,294

Saturday, January 11, 2020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040+P
Road Name: Limonite
Road Segment: e/o Hamner Av.
Project Name: Merrill Commerce Center
Job Number: 12005

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,181 vehicles
Peak Hour Percentage:	7.97%
Peak Hour Volume:	3,601 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	78 feet

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 MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	71.8%	8.9%	19.2%	81.40%
Medium Trucks:	69.4%	10.0%	20.6%	11.12%
Heavy Trucks:	69.0%	7.6%	23.4%	7.47%

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	2.83	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-5.81	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-7.54	-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:	68.2	67.0	64.0	62.5	69.8	70.1
Medium Trucks:	70.6	69.2	66.8	65.2	72.3	72.6
Heavy Trucks:	73.7	72.3	68.7	68.8	75.8	76.0
Vehicle Noise:	76.2	74.8	71.7	71.0	78.1	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	263	567	1,221	2,631
CNEL:	274	590	1,271	2,739

Saturday, January 11, 2020

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APPENDIX 9.1:

UNMITIGATED OPERATIONAL NOISE LEVEL CALCULATIONS

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STATIONARY SOURCE NOISE PREDICTION MODEL

1/11/2020

Observer Location: **R1**
Source: Distribution/Warehouse Activity
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	304.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	304.0 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	64.2	67.2	71.8	75.6	80.0
Distance Attenuation	304.0	-20.1	-20.1	-20.1	-20.1	-20.1	-20.1
Shielding (Barrier Attenuation)	304.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		47.1	44.1	47.1	51.7	55.5	59.9
60 Minute Hourly Adjustment		**47.1**	**44.1**	**47.1**	**51.7**	**55.5**	**59.9**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/11/2020

Observer Location: **R1**
Source: Air Conditioning Unit (Roof-Top)
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	304.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	304.0 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	74.4	76.1	77.4	77.7	78.2
Distance Attenuation	304.0	-35.7	-35.7	-35.7	-35.7	-35.7	-35.7
Shielding (Barrier Attenuation)	304.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		41.5	38.7	40.4	41.7	42.0	42.5
60 Minute Hourly Adjustment		**41.5**	**38.7**	**40.4**	**41.7**	**42.0**	**42.5**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/11/2020

Observer Location: **R1**
Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	241.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	241.0 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)	10.0	52.2	49.0	50.0	55.0	61.0	71.9
Distance Attenuation	241.0	-20.7	-20.7	-20.7	-20.7	-20.7	-20.7
Shielding (Barrier Attenuation)	241.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		31.5	28.3	29.3	34.3	40.3	51.2
60 Minute Hourly Adjustment		**31.5**	**28.3**	**29.3**	**34.3**	**40.3**	**51.2**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/11/2020

Observer Location: **R2**
Source: Distribution/Warehouse Activity
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	273.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	273.0 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	64.2	67.2	71.8	75.6	80.0
Distance Attenuation	273.0	-19.2	-19.2	-19.2	-19.2	-19.2	-19.2
Shielding (Barrier Attenuation)	273.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		48.0	45.0	48.0	52.6	56.4	60.8
60 Minute Hourly Adjustment		**48.0**	**45.0**	**48.0**	**52.6**	**56.4**	**60.8**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/11/2020

Observer Location: **R2**
Source: Air Conditioning Unit (Roof-Top)
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	273.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	273.0 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	74.4	76.1	77.4	77.7	78.2
Distance Attenuation	273.0	-34.7	-34.7	-34.7	-34.7	-34.7	-34.7
Shielding (Barrier Attenuation)	273.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		42.5	39.7	41.4	42.7	43.0	43.5
60 Minute Hourly Adjustment		**42.5**	**39.7**	**41.4**	**42.7**	**43.0**	**43.5**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/11/2020

Observer Location: **R2**
Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	213.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	213.0 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)	10.0	52.2	49.0	50.0	55.0	61.0	71.9
Distance Attenuation	213.0	-19.9	-19.9	-19.9	-19.9	-19.9	-19.9
Shielding (Barrier Attenuation)	213.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		32.3	29.1	30.1	35.1	41.1	52.0
60 Minute Hourly Adjustment		**32.3**	**29.1**	**30.1**	**35.1**	**41.1**	**52.0**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/11/2020

Observer Location: **R3**
Source: Cold Storage Activities
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	228.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	228.0 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	70.1	69.6	70.9	71.9	73.7	80.6
Distance Attenuation	228.0	-17.6	-17.6	-17.6	-17.6	-17.6	-17.6
Shielding (Barrier Attenuation)	228.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		52.5	52.0	53.3	54.3	56.1	63.0
60 Minute Hourly Adjustment		**52.5**	**52.0**	**53.3**	**54.3**	**56.1**	**63.0**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/11/2020

Observer Location: **R3**
Source: Air Conditioning Unit (Roof-Top)
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	228.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	228.0 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	74.4	76.1	77.4	77.7	78.2
Distance Attenuation	228.0	-33.2	-33.2	-33.2	-33.2	-33.2	-33.2
Shielding (Barrier Attenuation)	228.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		44.0	41.2	42.9	44.2	44.5	45.0
60 Minute Hourly Adjustment		**44.0**	**41.2**	**42.9**	**44.2**	**44.5**	**45.0**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/11/2020

Observer Location: **R3**
Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	168.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	168.0 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)	10.0	52.2	49.0	50.0	55.0	61.0	71.9
Distance Attenuation	168.0	-18.4	-18.4	-18.4	-18.4	-18.4	-18.4
Shielding (Barrier Attenuation)	168.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		33.8	30.6	31.6	36.6	42.6	53.5
60 Minute Hourly Adjustment		**33.8**	**30.6**	**31.6**	**36.6**	**42.6**	**53.5**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/11/2020

Observer Location: **R4**
Source: Distribution/Warehouse Activity
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	324.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	324.0 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	64.2	67.2	71.8	75.6	80.0
Distance Attenuation	324.0	-20.7	-20.7	-20.7	-20.7	-20.7	-20.7
Shielding (Barrier Attenuation)	324.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		46.5	43.5	46.5	51.1	54.9	59.3
60 Minute Hourly Adjustment		**46.5**	**43.5**	**46.5**	**51.1**	**54.9**	**59.3**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/11/2020

Observer Location: **R4**
Source: Air Conditioning Unit (Roof-Top)
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	324.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	324.0 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	74.4	76.1	77.4	77.7	78.2
Distance Attenuation	324.0	-36.2	-36.2	-36.2	-36.2	-36.2	-36.2
Shielding (Barrier Attenuation)	324.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		41.0	38.2	39.9	41.2	41.5	42.0
60 Minute Hourly Adjustment		**41.0**	**38.2**	**39.9**	**41.2**	**41.5**	**42.0**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/11/2020

Observer Location: **R4**
Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	240.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	240.0 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)	10.0	52.2	49.0	50.0	55.0	61.0	71.9
Distance Attenuation	240.0	-20.7	-20.7	-20.7	-20.7	-20.7	-20.7
Shielding (Barrier Attenuation)	240.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		31.5	28.3	29.3	34.3	40.3	51.2
60 Minute Hourly Adjustment		**31.5**	**28.3**	**29.3**	**34.3**	**40.3**	**51.2**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/11/2020

Observer Location: **R5**
Source: Cold Storage Activities
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	277.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	277.0 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	70.1	69.6	70.9	71.9	73.7	80.6
Distance Attenuation	277.0	-19.3	-19.3	-19.3	-19.3	-19.3	-19.3
Shielding (Barrier Attenuation)	277.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		50.8	50.3	51.6	52.6	54.4	61.3
60 Minute Hourly Adjustment		**50.8**	**50.3**	**51.6**	**52.6**	**54.4**	**61.3**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/11/2020

Observer Location: **R5**
Source: Air Conditioning Unit (Roof-Top)
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	277.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	277.0 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	74.4	76.1	77.4	77.7	78.2
Distance Attenuation	277.0	-34.9	-34.9	-34.9	-34.9	-34.9	-34.9
Shielding (Barrier Attenuation)	277.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		42.3	39.5	41.2	42.5	42.8	43.3
60 Minute Hourly Adjustment		**42.3**	**39.5**	**41.2**	**42.5**	**42.8**	**43.3**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/11/2020

Observer Location: **R5**
Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	218.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	218.0 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)	10.0	52.2	49.0	50.0	55.0	61.0	71.9
Distance Attenuation	218.0	-20.1	-20.1	-20.1	-20.1	-20.1	-20.1
Shielding (Barrier Attenuation)	218.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		32.1	28.9	29.9	34.9	40.9	51.8
60 Minute Hourly Adjustment		**32.1**	**28.9**	**29.9**	**34.9**	**40.9**	**51.8**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/11/2020

Observer Location: **R6**
Source: Cold Storage Activities
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	285.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	285.0 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	70.1	69.6	70.9	71.9	73.7	80.6
Distance Attenuation	285.0	-19.6	-19.6	-19.6	-19.6	-19.6	-19.6
Shielding (Barrier Attenuation)	285.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		50.5	50.0	51.3	52.3	54.1	61.0
60 Minute Hourly Adjustment		**50.5**	**50.0**	**51.3**	**52.3**	**54.1**	**61.0**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/11/2020

Observer Location: **R6**
Source: Air Conditioning Unit (Roof-Top)
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	285.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	285.0 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	74.4	76.1	77.4	77.7	78.2
Distance Attenuation	285.0	-35.1	-35.1	-35.1	-35.1	-35.1	-35.1
Shielding (Barrier Attenuation)	285.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		42.1	39.3	41.0	42.3	42.6	43.1
60 Minute Hourly Adjustment		**42.1**	**39.3**	**41.0**	**42.3**	**42.6**	**43.1**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/11/2020

Observer Location: **R6**
Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	225.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	225.0 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)	10.0	52.2	49.0	50.0	55.0	61.0	71.9
Distance Attenuation	225.0	-20.3	-20.3	-20.3	-20.3	-20.3	-20.3
Shielding (Barrier Attenuation)	225.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		31.9	28.7	29.7	34.7	40.7	51.6
60 Minute Hourly Adjustment		**31.9**	**28.7**	**29.7**	**34.7**	**40.7**	**51.6**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/11/2020

Observer Location: **R7**
Source: Cold Storage Activities
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	300.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	300.0 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	70.1	69.6	70.9	71.9	73.7	80.6
Distance Attenuation	300.0	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Shielding (Barrier Attenuation)	300.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		50.1	49.6	50.9	51.9	53.7	60.6
60 Minute Hourly Adjustment		**50.1**	**49.6**	**50.9**	**51.9**	**53.7**	**60.6**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/11/2020

Observer Location: **R7**
Source: Air Conditioning Unit (Roof-Top)
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	300.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	300.0 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	74.4	76.1	77.4	77.7	78.2
Distance Attenuation	300.0	-35.6	-35.6	-35.6	-35.6	-35.6	-35.6
Shielding (Barrier Attenuation)	300.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		41.6	38.8	40.5	41.8	42.1	42.6
60 Minute Hourly Adjustment		**41.6**	**38.8**	**40.5**	**41.8**	**42.1**	**42.6**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/11/2020

Observer Location: **R7**
Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	221.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	221.0 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)	10.0	52.2	49.0	50.0	55.0	61.0	71.9
Distance Attenuation	221.0	-20.2	-20.2	-20.2	-20.2	-20.2	-20.2
Shielding (Barrier Attenuation)	221.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		32.0	28.8	29.8	34.8	40.8	51.7
60 Minute Hourly Adjustment		**32.0**	**28.8**	**29.8**	**34.8**	**40.8**	**51.7**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/11/2020

Observer Location: **R8**
Source: Distribution/Warehouse Activity
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	264.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	264.0 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	64.2	67.2	71.8	75.6	80.0
Distance Attenuation	264.0	-18.9	-18.9	-18.9	-18.9	-18.9	-18.9
Shielding (Barrier Attenuation)	264.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		48.3	45.3	48.3	52.9	56.7	61.1
60 Minute Hourly Adjustment		**48.3**	**45.3**	**48.3**	**52.9**	**56.7**	**61.1**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/11/2020

Observer Location: **R8**
Source: Air Conditioning Unit (Roof-Top)
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	264.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	264.0 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	74.4	76.1	77.4	77.7	78.2
Distance Attenuation	264.0	-34.5	-34.5	-34.5	-34.5	-34.5	-34.5
Shielding (Barrier Attenuation)	264.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		42.7	39.9	41.6	42.9	43.2	43.7
60 Minute Hourly Adjustment		**42.7**	**39.9**	**41.6**	**42.9**	**43.2**	**43.7**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/11/2020

Observer Location: **R8**
Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	204.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	204.0 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)	10.0	52.2	49.0	50.0	55.0	61.0	71.9
Distance Attenuation	204.0	-19.6	-19.6	-19.6	-19.6	-19.6	-19.6
Shielding (Barrier Attenuation)	204.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		32.6	29.4	30.4	35.4	41.4	52.3
60 Minute Hourly Adjustment		**32.6**	**29.4**	**30.4**	**35.4**	**41.4**	**52.3**

APPENDIX 9.2:

MITIGATED OPERATIONAL NOISE LEVEL CALCULATIONS

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STATIONARY SOURCE NOISE PREDICTION MODEL

1/12/2020

Observer Location: **R1**
Source: Distribution/Warehouse Activity
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	304.0 feet	***Barrier Height:***	**12.0 feet**
Noise Distance to Barrier:	10.0 feet	*Noise Source Height:*	8.0 feet
Barrier Distance to Observer:	294.0 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	64.2	67.2	71.8	75.6	80.0
Distance Attenuation	304.0	-20.1	-20.1	-20.1	-20.1	-20.1	-20.1
Shielding (Barrier Attenuation)	10.0	-9.8	-9.8	-9.8	-9.8	-9.8	-9.8
Raw (Distance + Barrier)		37.3	34.3	37.3	41.9	45.7	50.1
60 Minute Hourly Adjustment		**37.3**	**34.3**	**37.3**	**41.9**	**45.7**	**50.1**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/12/2020

Observer Location: **R1**
Source: Air Conditioning Unit (Roof-Top)
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	304.0 feet	***Barrier Height:***	**5.0 feet**
Noise Distance to Barrier:	10.0 feet	*Noise Source Height:*	5.0 feet
Barrier Distance to Observer:	294.0 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:	30.0 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	74.4	76.1	77.4	77.7	78.2
Distance Attenuation	304.0	-35.7	-35.7	-35.7	-35.7	-35.7	-35.7
Shielding (Barrier Attenuation)	10.0	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5
Raw (Distance + Barrier)		36.0	33.2	34.9	36.2	36.5	37.0
60 Minute Hourly Adjustment		**36.0**	**33.2**	**34.9**	**36.2**	**36.5**	**37.0**

STATIONARY SOURCE NOISE PREDICTION MODEL 1/12/2020

Observer Location: **R1**
Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	241.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	241.0 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)	10.0	52.2	49.0	50.0	55.0	61.0	71.9
Distance Attenuation	241.0	-20.7	-20.7	-20.7	-20.7	-20.7	-20.7
Shielding (Barrier Attenuation)	241.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		31.5	28.3	29.3	34.3	40.3	51.2
60 Minute Hourly Adjustment		**31.5**	**28.3**	**29.3**	**34.3**	**40.3**	**51.2**

STATIONARY SOURCE NOISE PREDICTION MODEL 1/12/2020

Observer Location: **R2**
Source: Distribution/Warehouse Activity
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	300.0 feet	***Barrier Height:***	**12.0 feet**
Noise Distance to Barrier:	10.0 feet	*Noise Source Height:*	8.0 feet
Barrier Distance to Observer:	290.0 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	64.2	67.2	71.8	75.6	80.0
Distance Attenuation	300.0	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Shielding (Barrier Attenuation)	10.0	-9.8	-9.8	-9.8	-9.8	-9.8	-9.8
Raw (Distance + Barrier)		37.4	34.4	37.4	42.0	45.8	50.2
60 Minute Hourly Adjustment		**37.4**	**34.4**	**37.4**	**42.0**	**45.8**	**50.2**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/12/2020

Observer Location: **R2**
Source: Air Conditioning Unit (Roof-Top)
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	273.0 feet	***Barrier Height:***	**5.0 feet**
Noise Distance to Barrier:	10.0 feet	*Noise Source Height:*	5.0 feet
Barrier Distance to Observer:	263.0 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:	30.0 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	74.4	76.1	77.4	77.7	78.2
Distance Attenuation	273.0	-34.7	-34.7	-34.7	-34.7	-34.7	-34.7
Shielding (Barrier Attenuation)	10.0	-5.6	-5.6	-5.6	-5.6	-5.6	-5.6
Raw (Distance + Barrier)		36.9	34.1	35.8	37.1	37.4	37.9
60 Minute Hourly Adjustment		**36.9**	**34.1**	**35.8**	**37.1**	**37.4**	**37.9**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/12/2020

Observer Location: **R2**
Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	213.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	213.0 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)	10.0	52.2	49.0	50.0	55.0	61.0	71.9
Distance Attenuation	213.0	-19.9	-19.9	-19.9	-19.9	-19.9	-19.9
Shielding (Barrier Attenuation)	213.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		32.3	29.1	30.1	35.1	41.1	52.0
60 Minute Hourly Adjustment		**32.3**	**29.1**	**30.1**	**35.1**	**41.1**	**52.0**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/12/2020

Observer Location: **R3**
Source: Cold Storage Activities
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	300.0 feet	***Barrier Height:***	**12.0 feet**
Noise Distance to Barrier:	10.0 feet	*Noise Source Height:*	8.0 feet
Barrier Distance to Observer:	290.0 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	70.1	69.6	70.9	71.9	73.7	80.6
Distance Attenuation	300.0	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Shielding (Barrier Attenuation)	10.0	-9.8	-9.8	-9.8	-9.8	-9.8	-9.8
Raw (Distance + Barrier)		40.3	39.8	41.1	42.1	43.9	50.8
60 Minute Hourly Adjustment		**40.3**	**39.8**	**41.1**	**42.1**	**43.9**	**50.8**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/12/2020

Observer Location: **R3**
Source: Air Conditioning Unit (Roof-Top)
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	228.0 feet	***Barrier Height:***	**5.0 feet**
Noise Distance to Barrier:	10.0 feet	*Noise Source Height:*	5.0 feet
Barrier Distance to Observer:	218.0 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:	30.0 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	74.4	76.1	77.4	77.7	78.2
Distance Attenuation	228.0	-33.2	-33.2	-33.2	-33.2	-33.2	-33.2
Shielding (Barrier Attenuation)	10.0	-5.9	-5.9	-5.9	-5.9	-5.9	-5.9
Raw (Distance + Barrier)		38.1	35.3	37.0	38.3	38.6	39.1
60 Minute Hourly Adjustment		**38.1**	**35.3**	**37.0**	**38.3**	**38.6**	**39.1**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/12/2020

Observer Location: **R3**
Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	168.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	168.0 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)	10.0	52.2	49.0	50.0	55.0	61.0	71.9
Distance Attenuation	168.0	-18.4	-18.4	-18.4	-18.4	-18.4	-18.4
Shielding (Barrier Attenuation)	168.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		33.8	30.6	31.6	36.6	42.6	53.5
60 Minute Hourly Adjustment		**33.8**	**30.6**	**31.6**	**36.6**	**42.6**	**53.5**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/12/2020

Observer Location: **R4**
Source: Distribution/Warehouse Activity
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	300.0 feet	***Barrier Height:***	**12.0 feet**
Noise Distance to Barrier:	10.0 feet	*Noise Source Height:*	8.0 feet
Barrier Distance to Observer:	290.0 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	64.2	67.2	71.8	75.6	80.0
Distance Attenuation	300.0	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Shielding (Barrier Attenuation)	10.0	-9.8	-9.8	-9.8	-9.8	-9.8	-9.8
Raw (Distance + Barrier)		37.4	34.4	37.4	42.0	45.8	50.2
60 Minute Hourly Adjustment		**37.4**	**34.4**	**37.4**	**42.0**	**45.8**	**50.2**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/12/2020

Observer Location: **R4**
Source: Air Conditioning Unit (Roof-Top)
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	324.0 feet	***Barrier Height:***	**5.0 feet**
Noise Distance to Barrier:	10.0 feet	*Noise Source Height:*	5.0 feet
Barrier Distance to Observer:	314.0 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:	30.0 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	74.4	76.1	77.4	77.7	78.2
Distance Attenuation	324.0	-36.2	-36.2	-36.2	-36.2	-36.2	-36.2
Shielding (Barrier Attenuation)	10.0	-5.4	-5.4	-5.4	-5.4	-5.4	-5.4
Raw (Distance + Barrier)		35.6	32.8	34.5	35.8	36.1	36.6
60 Minute Hourly Adjustment		**35.6**	**32.8**	**34.5**	**35.8**	**36.1**	**36.6**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/12/2020

Observer Location: **R4**
Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	240.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	240.0 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)	10.0	52.2	49.0	50.0	55.0	61.0	71.9
Distance Attenuation	240.0	-20.7	-20.7	-20.7	-20.7	-20.7	-20.7
Shielding (Barrier Attenuation)	240.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		31.5	28.3	29.3	34.3	40.3	51.2
60 Minute Hourly Adjustment		**31.5**	**28.3**	**29.3**	**34.3**	**40.3**	**51.2**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/12/2020

Observer Location: **R5**
Source: Cold Storage Activities
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	300.0	feet	***Barrier Height:***	**12.0**	**feet**
Noise Distance to Barrier:	10.0	feet	*Noise Source Height:*	8.0	feet
Barrier Distance to Observer:	290.0	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	70.1	69.6	70.9	71.9	73.7	80.6
Distance Attenuation	300.0	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Shielding (Barrier Attenuation)	10.0	-9.8	-9.8	-9.8	-9.8	-9.8	-9.8
Raw (Distance + Barrier)		40.3	39.8	41.1	42.1	43.9	50.8
60 Minute Hourly Adjustment		**40.3**	**39.8**	**41.1**	**42.1**	**43.9**	**50.8**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/12/2020

Observer Location: **R5**
Source: Air Conditioning Unit (Roof-Top)
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	277.0	feet	***Barrier Height:***	**5.0**	**feet**
Noise Distance to Barrier:	10.0	feet	*Noise Source Height:*	5.0	feet
Barrier Distance to Observer:	267.0	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:	30.0	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	74.4	76.1	77.4	77.7	78.2
Distance Attenuation	277.0	-34.9	-34.9	-34.9	-34.9	-34.9	-34.9
Shielding (Barrier Attenuation)	10.0	-5.6	-5.6	-5.6	-5.6	-5.6	-5.6
Raw (Distance + Barrier)		36.7	33.9	35.6	36.9	37.2	37.7
60 Minute Hourly Adjustment		**36.7**	**33.9**	**35.6**	**36.9**	**37.2**	**37.7**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/12/2020

Observer Location: **R5**
Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	218.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	218.0 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)	10.0	52.2	49.0	50.0	55.0	61.0	71.9
Distance Attenuation	218.0	-20.1	-20.1	-20.1	-20.1	-20.1	-20.1
Shielding (Barrier Attenuation)	218.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		32.1	28.9	29.9	34.9	40.9	51.8
60 Minute Hourly Adjustment		**32.1**	**28.9**	**29.9**	**34.9**	**40.9**	**51.8**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/12/2020

Observer Location: **R6**
Source: Cold Storage Activities
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	300.0 feet	***Barrier Height:***	**12.0 feet**
Noise Distance to Barrier:	10.0 feet	*Noise Source Height:*	8.0 feet
Barrier Distance to Observer:	290.0 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	70.1	69.6	70.9	71.9	73.7	80.6
Distance Attenuation	300.0	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Shielding (Barrier Attenuation)	10.0	-9.8	-9.8	-9.8	-9.8	-9.8	-9.8
Raw (Distance + Barrier)		40.3	39.8	41.1	42.1	43.9	50.8
60 Minute Hourly Adjustment		**40.3**	**39.8**	**41.1**	**42.1**	**43.9**	**50.8**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/12/2020

Observer Location: **R6**
Source: Air Conditioning Unit (Roof-Top)
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	285.0 feet	***Barrier Height:***	**5.0 feet**
Noise Distance to Barrier:	10.0 feet	*Noise Source Height:*	5.0 feet
Barrier Distance to Observer:	275.0 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:	30.0 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	74.4	76.1	77.4	77.7	78.2
Distance Attenuation	285.0	-35.1	-35.1	-35.1	-35.1	-35.1	-35.1
Shielding (Barrier Attenuation)	10.0	-5.6	-5.6	-5.6	-5.6	-5.6	-5.6
Raw (Distance + Barrier)		36.5	33.7	35.4	36.7	37.0	37.5
60 Minute Hourly Adjustment		**36.5**	**33.7**	**35.4**	**36.7**	**37.0**	**37.5**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/12/2020

Observer Location: **R6**
Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	225.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	225.0 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)	10.0	52.2	49.0	50.0	55.0	61.0	71.9
Distance Attenuation	225.0	-20.3	-20.3	-20.3	-20.3	-20.3	-20.3
Shielding (Barrier Attenuation)	225.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		31.9	28.7	29.7	34.7	40.7	51.6
60 Minute Hourly Adjustment		**31.9**	**28.7**	**29.7**	**34.7**	**40.7**	**51.6**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/12/2020

Observer Location: **R7**
Source: Cold Storage Activities
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	300.0	feet	***Barrier Height:***	**12.0**	**feet**
Noise Distance to Barrier:	10.0	feet	*Noise Source Height:*	8.0	feet
Barrier Distance to Observer:	290.0	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	70.1	69.6	70.9	71.9	73.7	80.6
Distance Attenuation	300.0	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Shielding (Barrier Attenuation)	10.0	-9.8	-9.8	-9.8	-9.8	-9.8	-9.8
Raw (Distance + Barrier)		40.3	39.8	41.1	42.1	43.9	50.8
60 Minute Hourly Adjustment		**40.3**	**39.8**	**41.1**	**42.1**	**43.9**	**50.8**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/12/2020

Observer Location: **R7**
Source: Air Conditioning Unit (Roof-Top)
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	300.0	feet	***Barrier Height:***	**5.0**	**feet**
Noise Distance to Barrier:	10.0	feet	*Noise Source Height:*	5.0	feet
Barrier Distance to Observer:	290.0	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:	30.0	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	74.4	76.1	77.4	77.7	78.2
Distance Attenuation	300.0	-35.6	-35.6	-35.6	-35.6	-35.6	-35.6
Shielding (Barrier Attenuation)	10.0	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5
Raw (Distance + Barrier)		36.1	33.3	35.0	36.3	36.6	37.1
60 Minute Hourly Adjustment		**36.1**	**33.3**	**35.0**	**36.3**	**36.6**	**37.1**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/12/2020

Observer Location: **R7**
Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	221.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	221.0 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)	10.0	52.2	49.0	50.0	55.0	61.0	71.9
Distance Attenuation	221.0	-20.2	-20.2	-20.2	-20.2	-20.2	-20.2
Shielding (Barrier Attenuation)	221.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		32.0	28.8	29.8	34.8	40.8	51.7
60 Minute Hourly Adjustment		**32.0**	**28.8**	**29.8**	**34.8**	**40.8**	**51.7**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/12/2020

Observer Location: **R8**
Source: Distribution/Warehouse Activity
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	300.0 feet	***Barrier Height:***	**12.0 feet**
Noise Distance to Barrier:	10.0 feet	*Noise Source Height:*	8.0 feet
Barrier Distance to Observer:	290.0 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	64.2	67.2	71.8	75.6	80.0
Distance Attenuation	300.0	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Shielding (Barrier Attenuation)	10.0	-9.8	-9.8	-9.8	-9.8	-9.8	-9.8
Raw (Distance + Barrier)		37.4	34.4	37.4	42.0	45.8	50.2
60 Minute Hourly Adjustment		**37.4**	**34.4**	**37.4**	**42.0**	**45.8**	**50.2**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/12/2020

Observer Location: **R8**
Source: Air Conditioning Unit (Roof-Top)
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	264.0	feet	***Barrier Height:***	**5.0**	**feet**
Noise Distance to Barrier:	10.0	feet	*Noise Source Height:*	5.0	feet
Barrier Distance to Observer:	254.0	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:	30.0	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	74.4	76.1	77.4	77.7	78.2
Distance Attenuation	264.0	-34.5	-34.5	-34.5	-34.5	-34.5	-34.5
Shielding (Barrier Attenuation)	10.0	-5.7	-5.7	-5.7	-5.7	-5.7	-5.7
Raw (Distance + Barrier)		37.0	34.2	35.9	37.2	37.5	38.0
60 Minute Hourly Adjustment		**37.0**	**34.2**	**35.9**	**37.2**	**37.5**	**38.0**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/12/2020

Observer Location: **R8**
Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: Merrill Commerce Center
Job Number: 12005
Analyst: B.Lawson

NOISE MODEL INPUTS

Noise Distance to Observer	204.0	feet	***Barrier Height:***	**0.0**	**feet**
Noise Distance to Barrier:	204.0	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)	10.0	52.2	49.0	50.0	55.0	61.0	71.9
Distance Attenuation	204.0	-19.6	-19.6	-19.6	-19.6	-19.6	-19.6
Shielding (Barrier Attenuation)	204.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		32.6	29.4	30.4	35.4	41.4	52.3
60 Minute Hourly Adjustment		**32.6**	**29.4**	**30.4**	**35.4**	**41.4**	**52.3**

APPENDIX 11.1:

INFRASTRUCTURE CONCEPT PLANS

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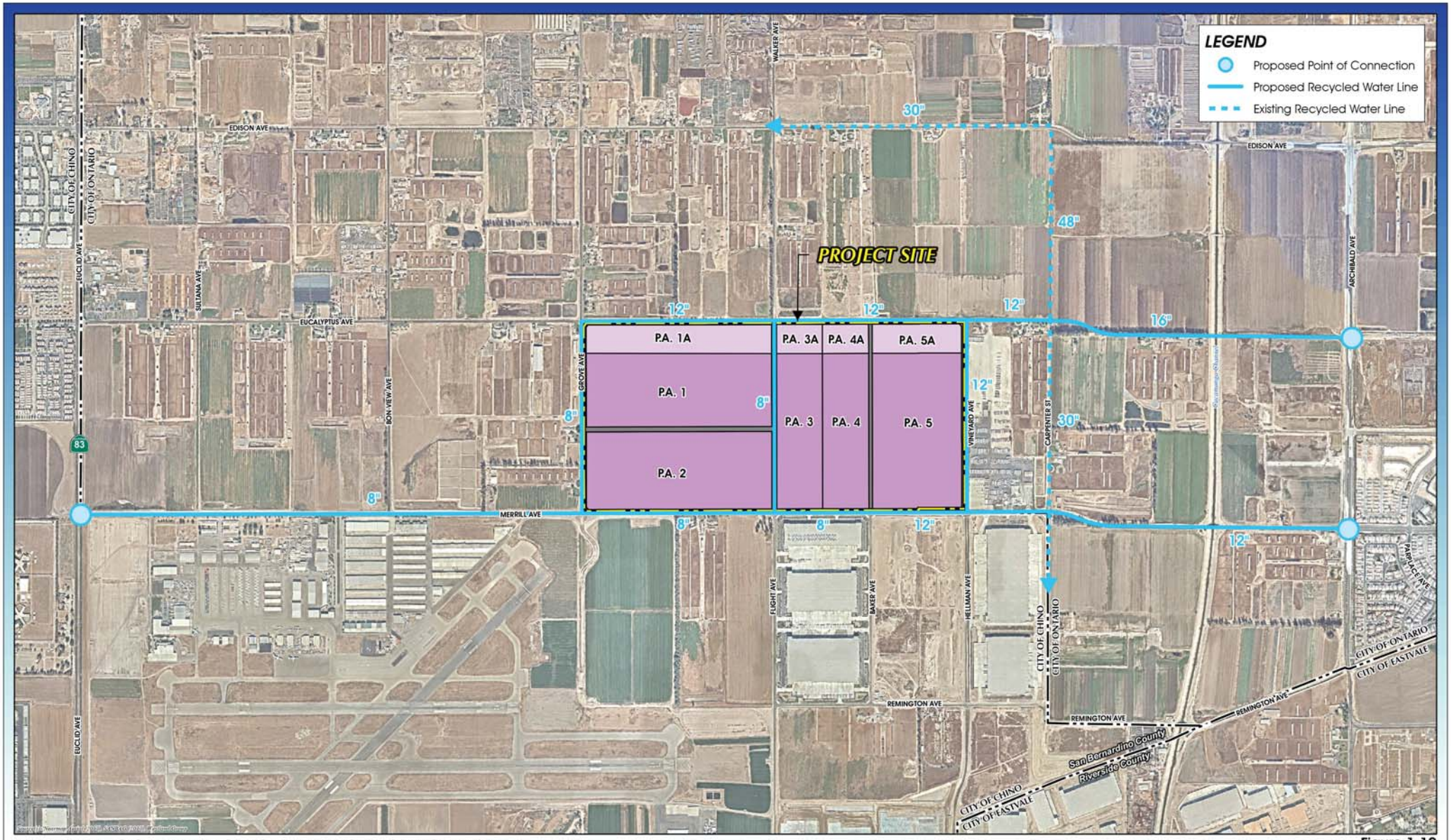
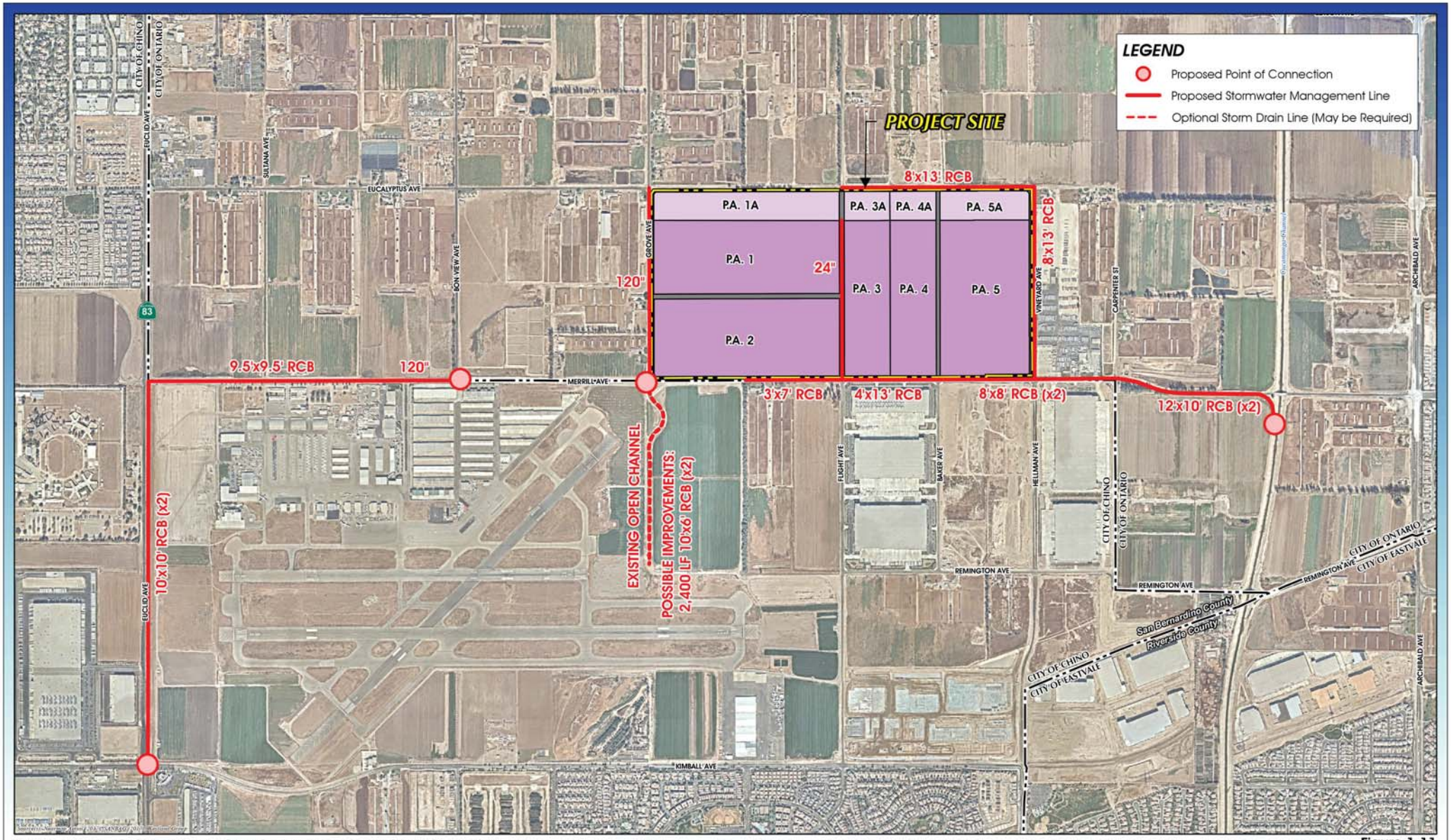


MERRILL COMMERCE CENTER SPECIFIC PLAN

Figure 1-10

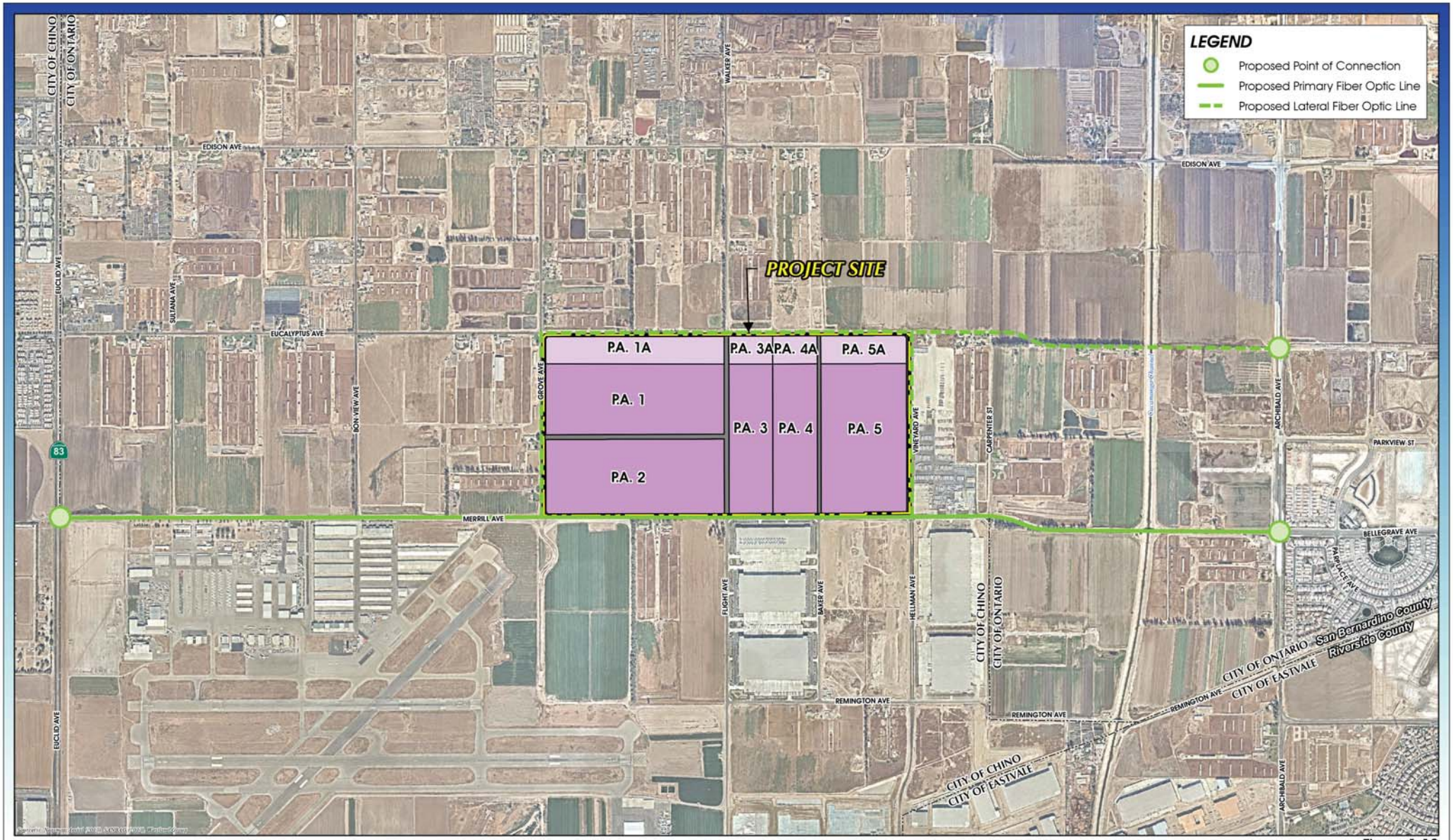
PROPOSED CONCEPTUAL RECYCLED WATER PLAN



MERRILL COMMERCE CENTER SPECIFIC PLAN

Figure 1-11

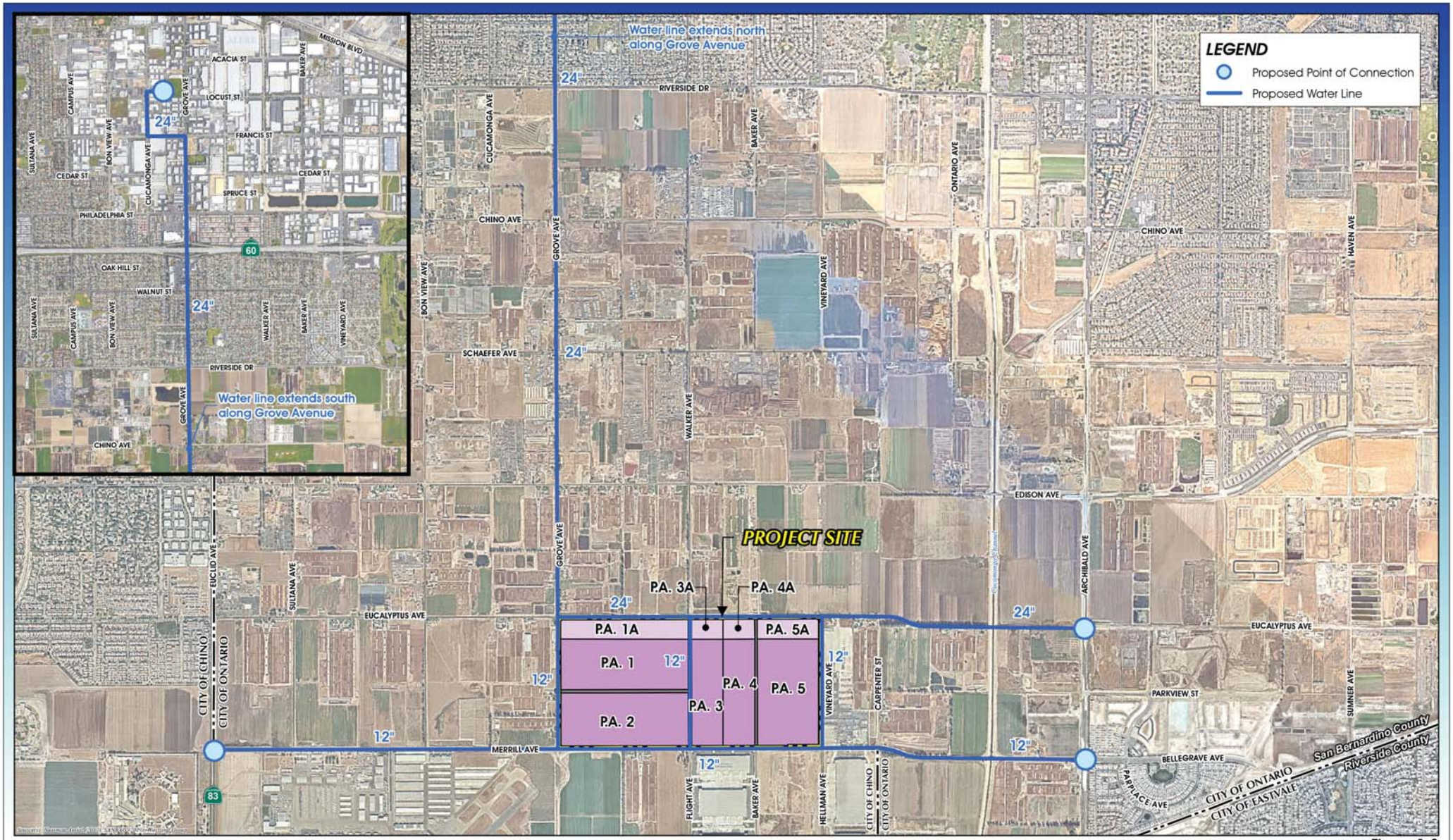
PROPOSED CONCEPTUAL STORMWATER MANAGEMENT PLAN



MERRILL COMMERCE CENTER SPECIFIC PLAN

Figure 1-12

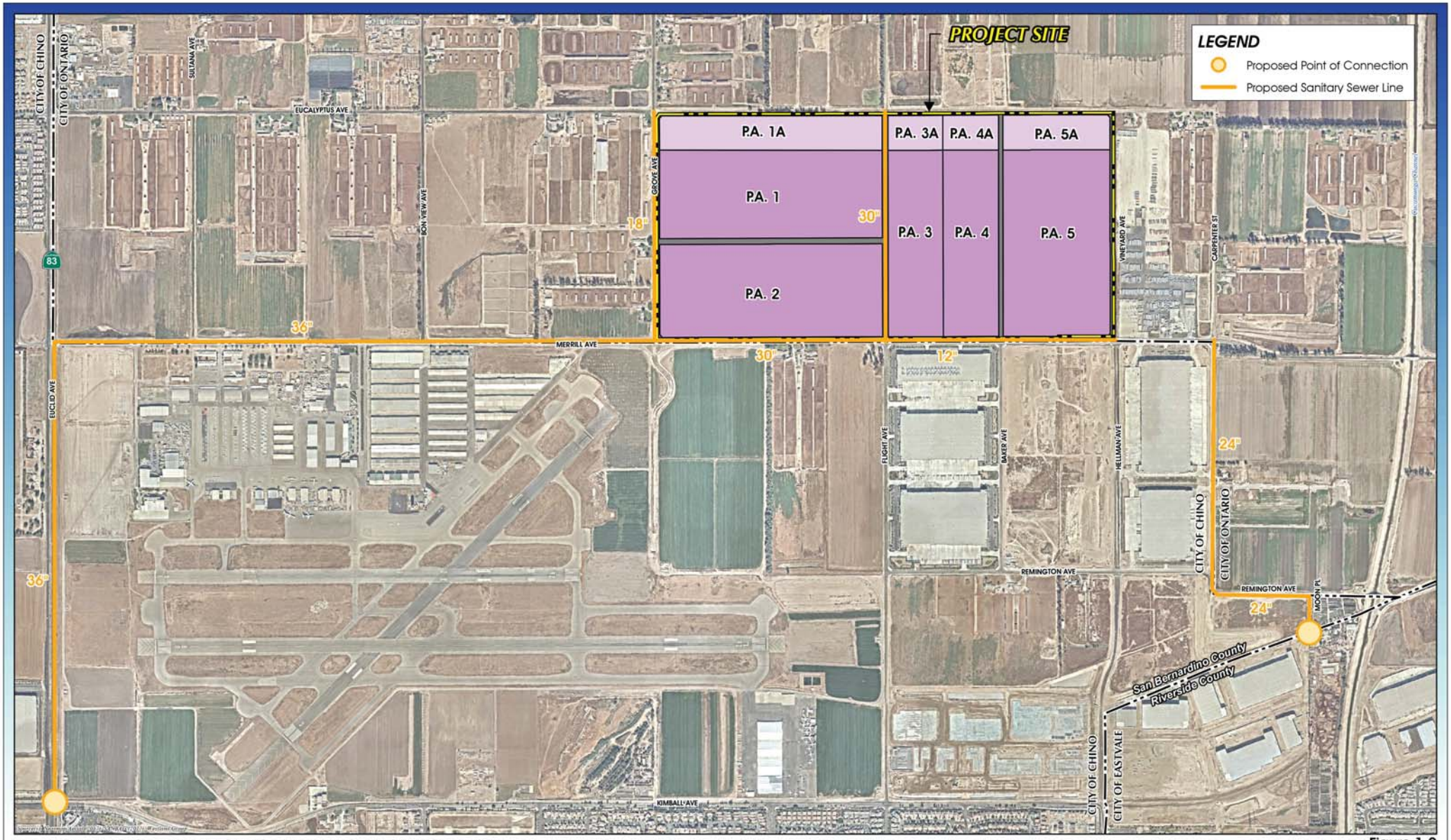
PROPOSED CONCEPTUAL FIBER OPTICS PLAN



MERRILL COMMERCE CENTER SPECIFIC PLAN

Figure 1-8

PROPOSED CONCEPTUAL WATER PLAN



MERRILL COMMERCE CENTER SPECIFIC PLAN

Figure 1-9

PROPOSED CONCEPTUAL SANITARY SEWER PLAN