Majestic Chino Heritage

NOISE IMPACT ANALYSIS

CITY OF CHINO

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LIST OF ABBREVIATED TERMS

(1)	Reference
ADT	Average Daily Traffic
ANSI	American National Standards Institute
Calveno	California Vehicle Noise
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
dBA	A-weighted decibels
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
INCE	Institute of Noise Control Engineering
L_{eq}	Equivalent continuous (average) sound level
L_{max}	Maximum level measured over the time interval
L_{min}	Minimum level measured over the time interval
mph	Miles per hour
PPV	Peak Particle Velocity
Project	Majestic Chino Heritage
REMEL	Reference Energy Mean Emission Level
RMS	Root-mean-square
VdB	Vibration Decibels

EXECUTIVE SUMMARY

Urban Crossroads, Inc. has prepared this noise study to determine the noise exposure and the necessary noise mitigation measures for the proposed Majestic Chino Heritage development ("Project"). The Project site is located on the southeast corner of Mountain Avenue and Bickmore Avenue in the City of Chino. The total development is proposed to consist of up to 2,082,750 square feet of industrial uses. As a part of Project construction, five nearby soil borrow sites (or "Excess Fill Dirt Sites") have been identified to provide the soil export to be used as the import required for the Project site, and as such, construction activity associated with these sites has included in this analysis.

This study has been prepared consistent with applicable City of Chino 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 Hills and City of Eastvale, applicable noise level standards of each jurisdiction are used in this analysis to evaluate potential impacts. Further, additional receiver locations are identified at open space locations in the Project study area for information purposes only; the Project's Biology report will analyze the significance of any potential noise impacts to sensitive wildlife species.

OFF-SITE PROJECT TRAFFIC NOISE ANALYSIS

Traffic generated by the operation of the proposed Project will influence the traffic noise levels in surrounding off-site areas. To quantify the traffic noise increases on the surrounding off-site areas, the changes in traffic noise levels on 34 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 *Majestic Chino Heritage Traffic Impact Analysis*. (2) To assess the off-site noise level impacts associated with the proposed Project, noise contour boundaries were developed for Existing, Opening Year 2022, and Horizon Year 2040 traffic conditions. The analysis shows that the unmitigated Project-related traffic noise level increases under all traffic scenarios will be *less than significant*.

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

Traffic generated by the soil import/export truck haul activity associated with construction of the proposed Project will influence the traffic noise levels in surrounding off-site areas under Existing conditions. To quantify the traffic noise increases on the surrounding off-site areas during Project construction, the changes in traffic noise levels on eight 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 *Majestic Chino Heritage Traffic Impact Analysis*. (2) To assess the off-site noise level impacts associated with the soil import/export haul truck trips, noise contour boundaries were developed for Existing traffic conditions.

The analysis shows that the unmitigated Project-related traffic noise level increases will be *potentially significant* at existing and future noise-sensitive land uses, if built and occupied at the time of soil import/export haul truck activity to and from the Excess Fill Dirt Sites, adjacent to the following roadway segments, as shown on Exhibits ES-A and ES-B, if haul truck activity occurs within the proposed daytime (7:00 a.m. – 3:00 p.m.) or off-peak (6:00 p.m. – 2:00 a.m.) hour conditions:

DAYTIME HAUL TRUCK OFF-SITE TRAFFIC NOISE IMPACTS

- Pine Av. west of W. Preserve Loop (Excess Fill Dirt Site #5);
- Chino Corona Rd. south of Pine Av. (Excess Fill Dirt Sites #3 & #4);
- Chino Corona Rd. east of Cucamonga Av. (Excess Fill Dirt Site #4);
- Hellman Av. south of Pine Av. (Excess Fill Dirt Site #5).

OFF-PEAK HAUL TRUCK OFF-SITE TRAFFIC NOISE IMPACTS

- Pine Av. east of Euclid Av. (Excess Fill Dirt Sites #2 to #5);
- Pine Av. west of Chino Corona Rd. (Excess Fill Dirt Sites #2 to #5);
- Pine Av. west of W. Preserve Loop (Excess Fill Dirt Site #5);
- Pine Av. west of E. Preserve Loop (Excess Fill Dirt Site #5);
- Pine Av. west of Hellman Av. (Excess Fill Dirt Site #5);
- Chino Corona Rd. south of Pine Av. (Excess Fill Dirt Sites #3 & #4);
- Chino Corona Rd. east of Cucamonga Av. (Excess Fill Dirt Site #4);
- Hellman Av. south of Pine Av. (Excess Fill Dirt Site #5).

PROJECT OPERATIONAL NOISE ANALYSIS

Using reference noise levels to represent the expected noise sources from the Majestic Chino Heritage site, this analysis estimates the Project-related stationary-source noise levels at nearby sensitive receiver locations. The normal activities associated with the proposed Majestic Chino Heritage are anticipated to include roof-top air conditioning units, idling trucks, delivery truck activities, backup alarms, as well as loading and unloading of dry goods, and parking lot vehicle movements. For this analysis, the closest noise-sensitive receiver locations to the Project site are located greater than 2,000 feet west of the Project site in the City of Chino Hills. An additional noise-sensitive receiver location is identified east of the Project site, at over 4,000 feet from the Project site, in the City of Chino. The operational noise analysis shows that the Project-related stationary-source noise levels at the nearby sensitive receiver locations will not exceed the City of Chino and City of Chino Hills exterior noise level standards. Therefore, the operational noise level impacts associated with the proposed Project activities, such as the roof-top air conditioning units, idling trucks, delivery truck activities, backup alarms, as well as loading and unloading of dry goods, and parking lot vehicle movements, are considered *less than significant*.

PROJECT 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 Majestic Chino Heritage 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 so it is expected that delivery truck vibration impacts at nearby homes will not exceed the City of Chino 0.05 in/sec RMS vibration level standard, the City of Chino Hills 0.2 in/sec PPV standard, and the City of Eastvale 0.0787 in/sec PPV, and therefore, will be *less than significant*.

PROJECT SITE CONSTRUCTION NOISE ANALYSIS

Construction-related noise impacts are expected to create temporary and intermittent high-level noise conditions at receivers surrounding the Project site. Using sample reference noise levels to represent the planned construction activities of the Majestic Chino Heritage site, this analysis estimates the Project-related construction noise levels at nearby sensitive receiver locations. The analysis shows that the Project-related short-term construction noise levels, including those generated by both daytime and nighttime concrete pouring activity, are expected to approach 38.0 dBA L_{eq} and will not exceed the 65 dBA L_{eq} City of Chino construction noise level threshold at the nearby sensitive receiver locations. Therefore, based on the results of this analysis, all nearby sensitive receiver locations will experience *less than significant* impacts due to Project site construction noise levels.

SOIL IMPORT/EXPORT CONSTRUCTION NOISE ANALYSIS

Using sample reference noise levels to represent the planned construction activities at the Excess Fill Dirt Sites, this analysis estimates the construction noise levels at nearby sensitive receiver locations to each site. The short-term construction noise levels are expected to range from 30.0 to 67.5 dBA L_{eq} and will exceed the 65 dBA L_{eq} City of Chino construction noise level threshold at one of the sensitive receiver locations, R10, near Excess Fill Dirt Site #4. Therefore, based on the results of this analysis, if sensitive receiver location R10 represents built and occupied residential use it will experience *potentially significant* impacts due to construction noise levels generated by activities at Excess Fill Dirt Site #4. As such, a construction noise mitigation plan shall be required, as outlined below, if Excess Fill Dirt Site #4 is used for soil import/export activities, and if R10 represents built and occupied residential use at the time of the soil import/export activities.

All other receiver locations will experience *less than significant* noise impacts due to construction activities at the Excess Fill Dirt Sites.

SOIL IMPORT/EXPORT CONSTRUCTION NOISE MITIGATION MEASURES

A construction noise mitigation plan shall be prepared outlining the noise reduction measures to be implemented during construction activities at Excess Fill Dirt Site #4 if used for soil import/export, and if R10 represents built and occupied residential use at the time of the soil import/export activities. The construction noise mitigation plan shall indicate the mitigation measure(s) to be implemented to reduce construction noise levels at adjacent sensitive residential receiver locations to satisfy the City of Chino 65 dBA L_{eq} construction noise level limit. The following noise reduction measures represent individual examples of mitigation measures which, if implemented, would be capable of reducing construction noise levels at R10. A minimum of one of the following, or equivalent, measures shall be required to be implemented as a part of the construction noise mitigation plan:

- Install minimum 8-foot high temporary construction noise barriers at the construction activity boundaries adjacent to sensitive receiver R10, as shown on Exhibit ES-C, if R10 represents built and occupied noise-sensitive residential uses at the time of construction. The noise control barriers must have a solid face from top to bottom and must block the line-of-sight to the noise source. The noise control barriers must meet the minimum height and be constructed as follows:
    - The temporary noise barriers shall provide a minimum transmission loss of 20 dBA (Federal Highway Administration, Noise Barrier Design Handbook). The noise barrier shall be constructed using an acoustical blanket (e.g. vinyl acoustic curtains or quilted blankets) attached to the construction site perimeter fence or equivalent temporary fence posts;
    - The noise barrier must be maintained, and any damage promptly repaired. Gaps, holes, or weaknesses in the barrier or openings between the barrier and the ground shall be promptly repaired;
    - The noise control barrier and associated elements shall be completely removed, and the site appropriately restored upon the conclusion of the construction activity; or
- Install sound dampening mats or blankets to the engine compartments of heavy mobile equipment (e.g., dozers, graders, scrapers) capable of a minimum 5 dBA noise reduction (FHWA, Construction Noise Special Report). (4) The dampening materials must be capable of the minimum 5 dBA noise reduction and can be made of commercially-available sound dampening materials, including but not limited to polyurethane foam and vinyl sheeting (University of Massachusetts Lowell The Use of Noise Dampening Mats to Reduce Heavy-Equipment Noise). (5)
    - The sound dampening mats or blankets must be installed prior to the use of heavy mobile construction equipment within the Project site;
    - The sound dampening mats or blankets must remain installed for the duration of the use of the equipment during Project construction; or
- Prohibit the use of large construction equipment (greater than 80,000 pounds) within 170 feet of sensitive receiver R10, if R10 represents built and occupied noise-sensitive residential uses at the time of construction. Instead, small rubber-tired or alternative equipment shall be used within this buffer area during construction to reduce noise impacts.

PROJECT & SOIL IMPORT/EXPORT CONSTRUCTION VIBRATION ANALYSIS

The construction vibration analysis is based on the shortest distance to either Project site construction or Excess Fill Dirt Site soil import/export activities. Based on the analysis, construction vibration velocity levels are expected to approach 0.012 in/sec PPV, and 0.009 in/sec RMS. 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, the City of Chino Hills 0.2 in/sec PPV standard, and the City of Eastvale 0.0787 in/sec PPV 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.

SUMMARY OF CEQA SIGNIFICANCE FINDINGS

The results of this Majestic Chino Heritage 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 (Long-Term Operation)	7	*Less Than Significant*	-
Off-Site Traffic Noise Levels (Short-Term Dirt Haul Trips)		*Potentially Significant*	*Significant*
Operational Noise Levels (Stationary Source)	9	*Less Than Significant*	-
Operational Vibration Levels		*Less Than Significant*	-
Project Construction Noise Levels (Stationary Source)	10	*Less Than Significant*	-
Soil Export Construction Noise Levels (Stationary-Source)		*Potentially Significant*	*Less Than Significant*
Construction Vibration Levels (Project & Soil Export)		*Less Than Significant*	-

EXHIBIT ES-A: DAYTIME EXCESS FILL DIRT SITE OFF-SITE TRAFFIC NOISE IMPACTS

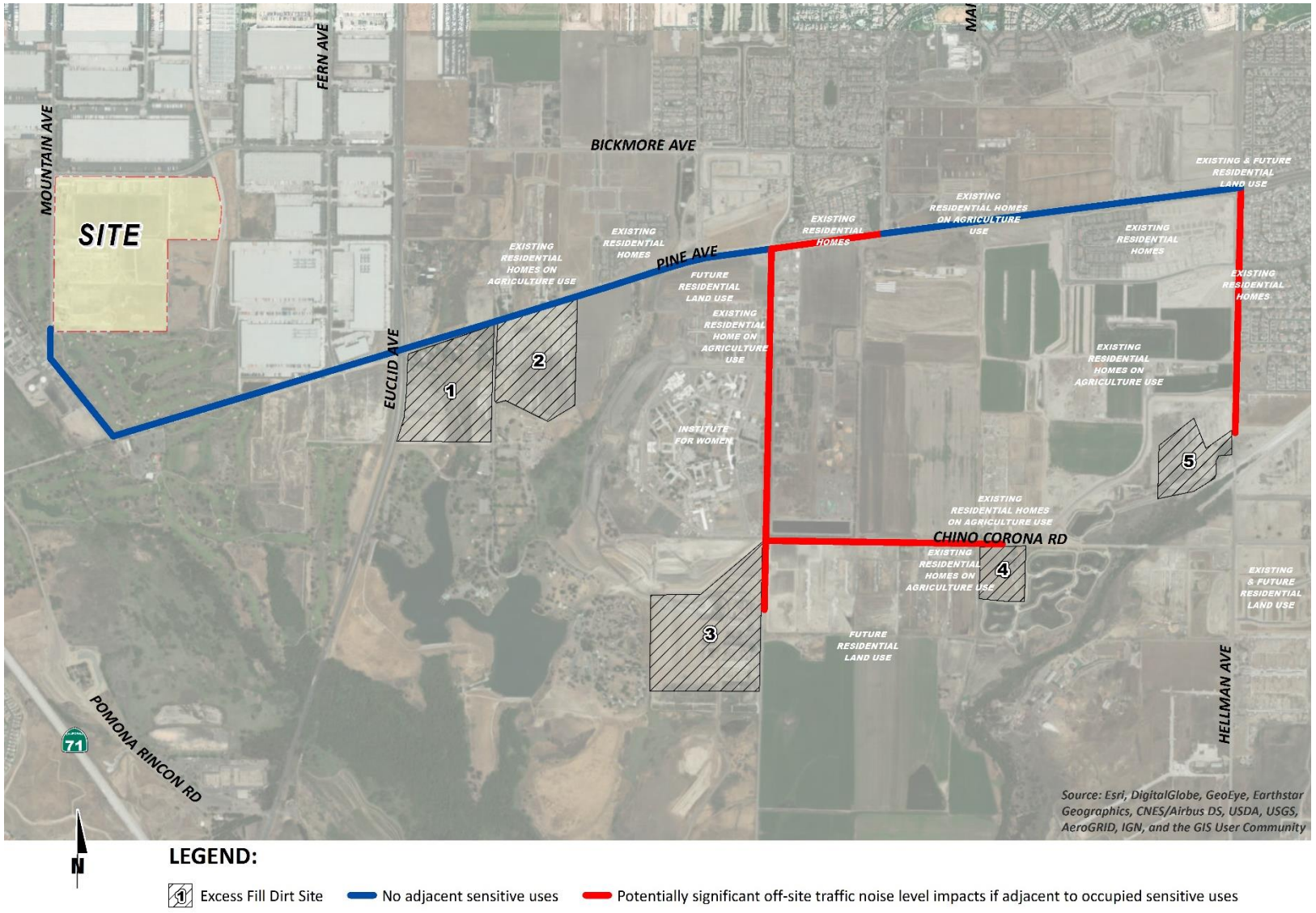
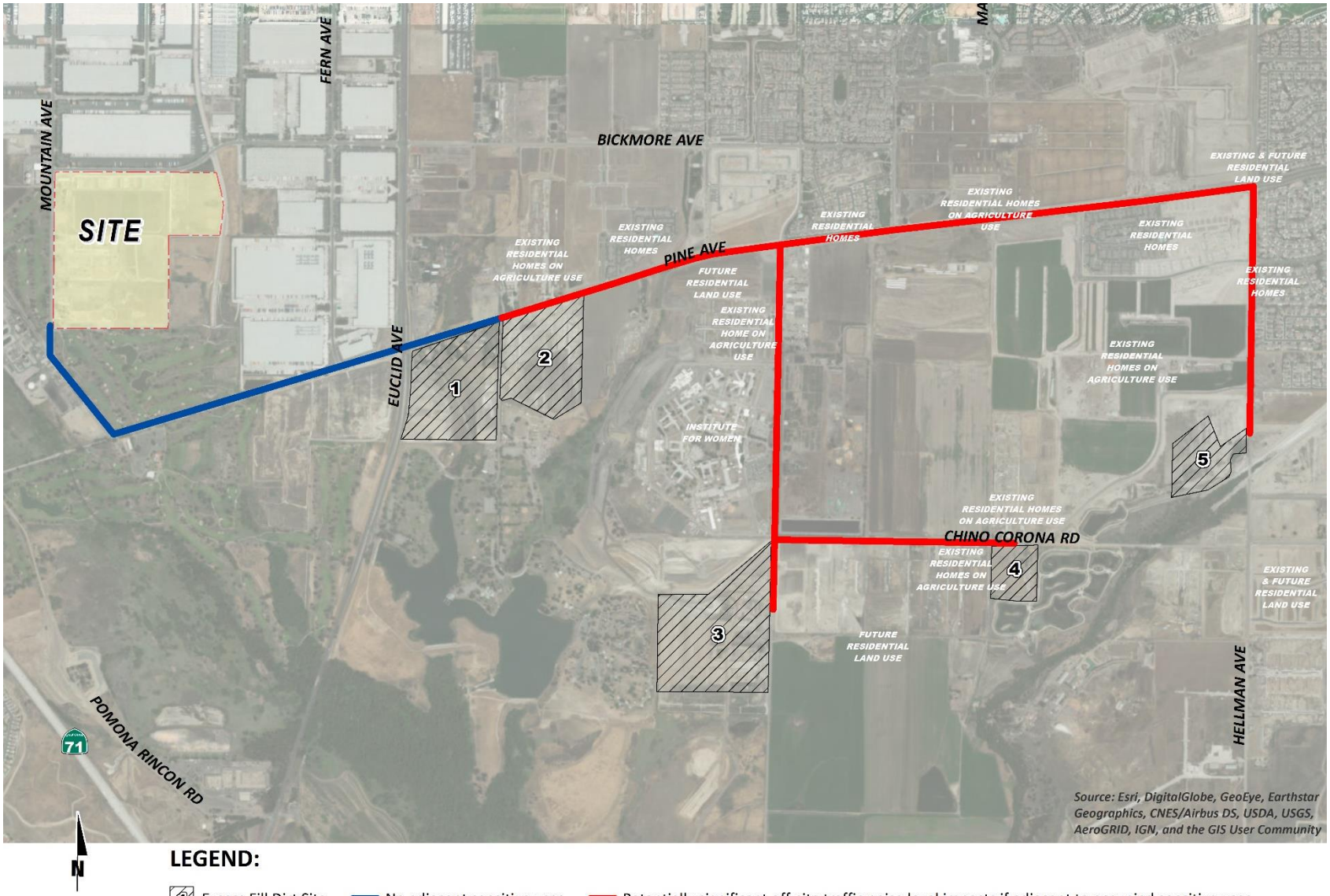


EXHIBIT ES-B: OFF-PEAK EXCESS FILL DIRT SITE OFF-SITE TRAFFIC NOISE IMPACTS



LEGEND:

1 Excess Fill Dirt Site — No adjacent sensitive uses — Potentially significant off-site traffic noise level impacts if adjacent to occupied sensitive uses

EXHIBIT ES-C: TEMPORARY CONSTRUCTION NOISE BARRIER LOCATIONS

LEGEND:

4 Excess Fill Dirt Site | Construction Activity | 8-foot high temporary noise barriers required to reduce construction noise levels at occupied sensitive receiver locations

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1 INTRODUCTION

This noise analysis has been completed to determine the noise impacts associated with the development of the proposed Majestic Chino Heritage ("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 SITE LOCATION

The Project site is located on the southeast corner of Mountain Avenue and Bickmore Avenue in the City of Chino, as shown on Exhibit 1-A. The closest noise-sensitive receiver locations to the Project site are located greater than 2,000 feet west of the Project site in the City of Chino Hills. Additional noise-sensitive receiver locations are identified east of the Project site, at over 4,000 feet from the Project site, in the City of Chino and City of Eastvale.

1.2 PROJECT DESCRIPTION

Exhibit 1-B shows the preliminary Project site plan. As indicated on Exhibit 1-B, the total development is proposed to consist of up to 2,082,750 square feet of industrial uses. Consistent with the *Traffic Impact Analysis*, the following land uses are assumed in this report:

- Building 1: 1,168,710 square feet of High-Cube Fulfillment Center Warehouse use
- Building 2: 814,040 square feet of High-Cube Without Cold Storage use
- Remainder of Building 2: 100,000 square feet of High-Cube with Cold Storage use

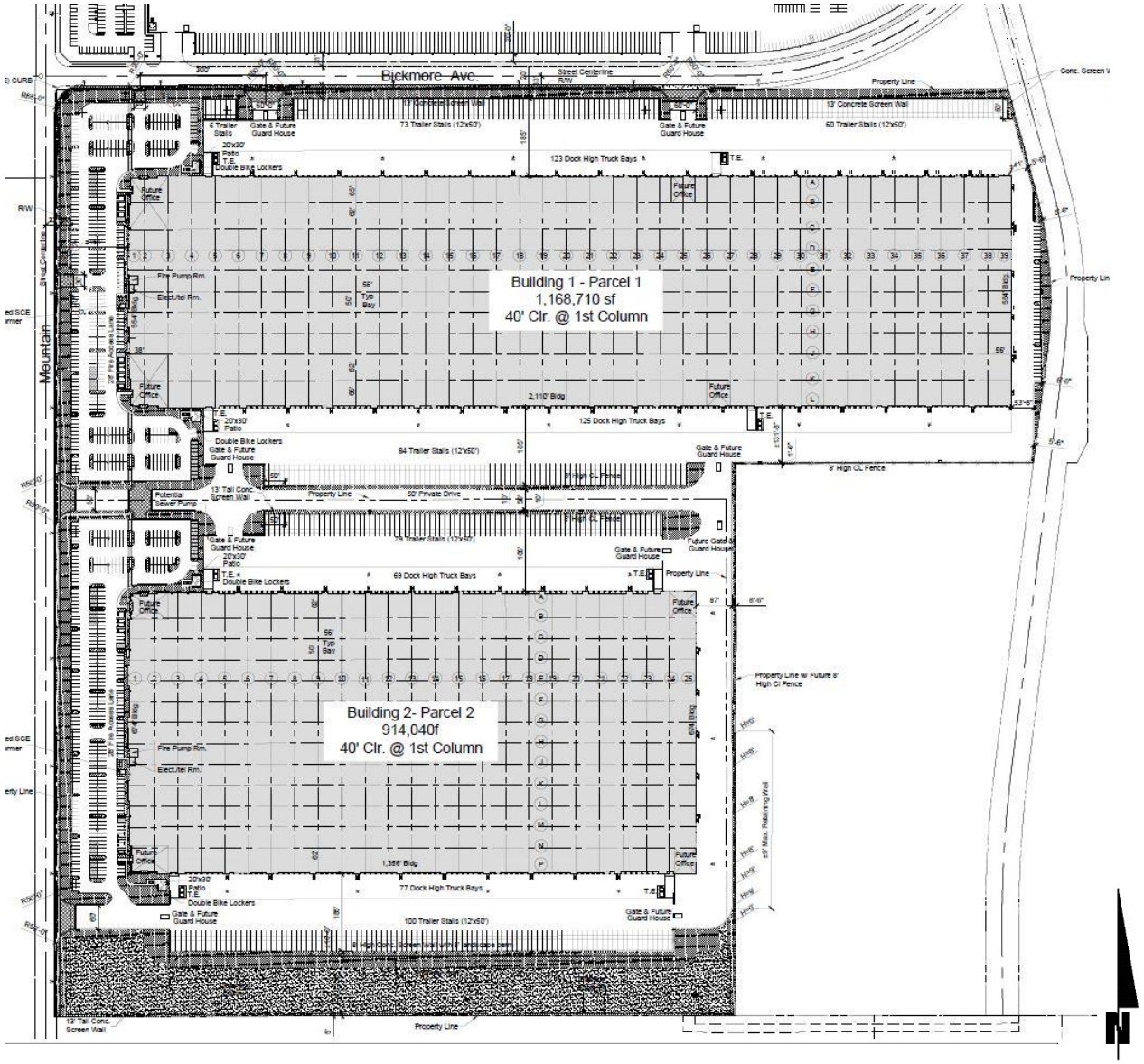
  Total of 2,082,750 square feet

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: roof-top air conditioning units, idling trucks, delivery truck activities, backup alarms, as well as loading and unloading of dry goods, 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 *Majestic Chino Heritage Traffic Impact Analysis* prepared by Urban Crossroads, Inc. the Project is expected to generate a net total of approximately 4,440 trip-ends per day (actual vehicles) and includes 824 truck trip-ends per day from the proposed buildings within the Project site. (6) This noise study relies on the actual Project trips (as opposed to the passenger car equivalents) to accurately account for the effect of individual truck trips on the study area roadway network.

EXHIBIT 1-A: LOCATION MAP

EXHIBIT 1-B: SITE PLAN



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2 FUNDAMENTALS

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

EXHIBIT 2-A: TYPICAL NOISE LEVELS

COMMON OUTDOOR ACTIVITIES	COMMON INDOOR ACTIVITIES	A - WEIGHTED SOUND LEVEL dBA	SUBJECTIVE LOUDNESS	EFFECTS OF NOISE
THRESHOLD OF PAIN		140	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		

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

2.1 RANGE OF NOISE

Since the range of intensities that the human ear can detect is so large, the scale frequently used to measure intensity is a scale based on multiples of 10, the logarithmic scale. The scale for measuring intensity is the decibel scale. Each interval of 10 decibels indicates a sound energy ten times greater than before, which is perceived by the human ear as being roughly twice as loud. (7) 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. (8) 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 Chino 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 Chino 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. (7)

2.3.2 GROUND ABSORPTION

The propagation path of noise from a highway to a receptor is usually very close to the ground. Noise attenuation from ground absorption and reflective wave canceling adds to the attenuation associated with geometric spreading. Traditionally, the excess attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is usually sufficiently accurate for distances of less than 200 ft. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receptor, such as a parking lot or body of water), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receptor such as soft dirt, grass, or scattered bushes and trees), an excess ground attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to the cylindrical spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance from a line source. (9)

2.3.3 ATMOSPHERIC EFFECTS

Receptors located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects. (7)

2.3.4 SHIELDING

A large object or barrier in the path between a noise source and a receptor can substantially attenuate noise levels at the receptor. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Shielding by trees and other such vegetation typically only has an “out of sight, out of mind” effect. That is, the perception of noise impact tends to decrease when vegetation blocks the line-of-sight to nearby resident. However, for vegetation to provide a substantial, or even noticeable, noise reduction, the vegetation area must be at least 15 feet in height, 100 feet wide and dense enough to completely obstruct the line-of sight between the source and the receiver. This size of vegetation may provide up to 5 dBA of noise reduction. The FHWA does not consider the planting of vegetation to be a noise abatement measure. (9)

2.4 NOISE CONTROL

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

2.5 NOISE BARRIER ATTENUATION

Effective noise barriers can reduce noise levels by 10 to 15 dBA, cutting the loudness of traffic noise in half. A noise barrier is most effective when placed close to the noise source or receptor. Noise barriers, however, do have limitations. For a noise barrier to work, it must be high enough and long enough to block the path of the noise source. (9)

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. (10)

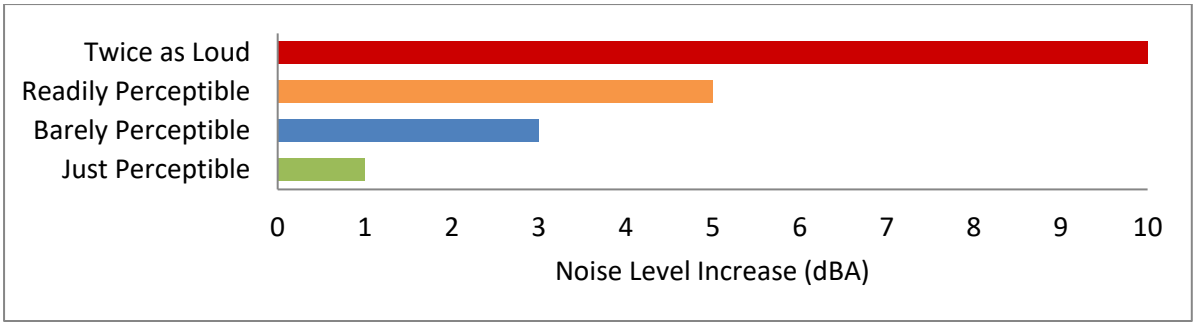
2.7 COMMUNITY RESPONSE TO NOISE

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. (11) 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. (11) Despite this variability in behavior on an individual level, the population can be expected to exhibit the following responses to changes in noise levels as shown on Exhibit 2-B. An increase or decrease of 1 dBA cannot be perceived except in carefully controlled laboratory experiments, a change of 3 dBA are considered *barely perceptible*, and changes of 5 dBA are considered *readily perceptible*. (9)

EXHIBIT 2-B: NOISE LEVEL INCREASE PERCEPTION



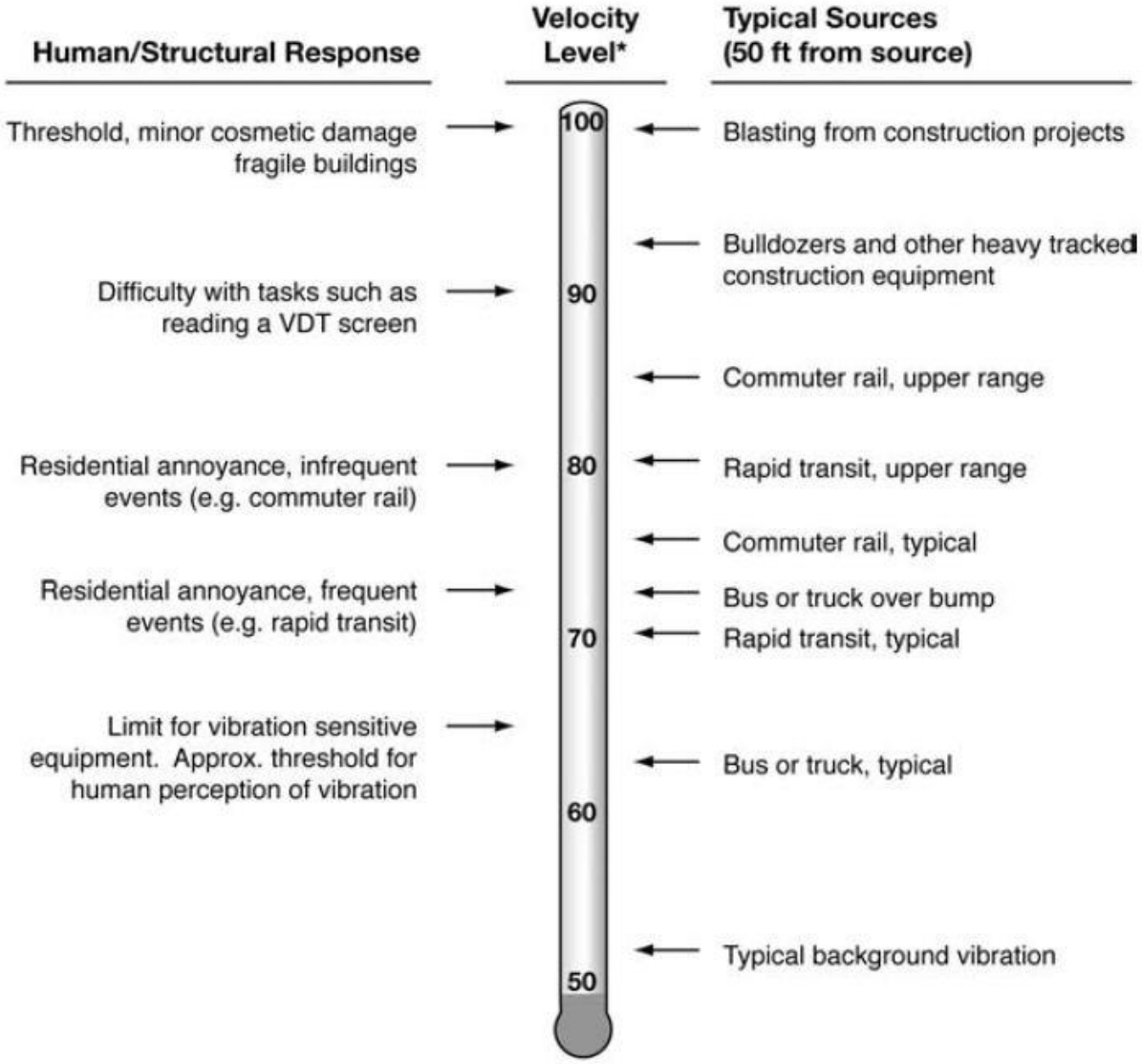
2.8 VIBRATION

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

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

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

3.2 STATE OF CALIFORNIA BUILDING CODE

The State of California's noise insulation standards are codified in the California Code of Regulations, Title 24, Building Standards Administrative Code, Part 2, and the California Building Code. These noise standards are applied to new construction in California for the purpose of controlling interior noise levels resulting from exterior noise sources. The regulations specify that acoustical studies must be prepared when noise-sensitive structures, such as residential buildings, schools, or hospitals, are developed near major transportation noise sources, and where such noise sources create an exterior noise level of 60 dBA CNEL or higher. Acoustical studies that accompany building plans for noise-sensitive land uses must demonstrate that the structure has been designed to limit interior noise in habitable rooms to acceptable noise levels. For new residential buildings, schools, and hospitals, the acceptable interior noise limit for new construction is 45 dBA CNEL.

3.3 CITY OF CHINO GENERAL PLAN NOISE ELEMENT

The City of Chino has adopted a Noise Element of the General Plan (13) to minimize problems from intrusive sound and to ensure that development does not expose people to unacceptable noise levels. The Noise Element specifies the maximum exterior and interior noise levels for new developments impacted by transportation noise sources such as arterial roads, freeways, airports, and railroads. In addition, the Noise Element identifies noise polices designed to protect, create, and maintain an environment free from noise that may jeopardize the health or

welfare of sensitive receivers, or degrade quality of life. To protect Chino residents from unacceptable noise levels, the Noise Element contains the following three objectives:

N-1.1. Ensure appropriate exterior and interior noise levels for existing and new land uses;
N-1.2 Reduce noise impacts from transportation;
N-1.3 Control sources of construction noise.

The noise policies specified in the City of Chino Noise Element provide the guidelines necessary to satisfy these objectives. To ensure the appropriate exterior and interior noise levels for existing and new land uses (N-1.1), Table N-3 of the City of Chino General Plan Noise Element, identifies a maximum allowable exterior noise level of 65 dBA CNEL and an interior noise level limit of 45 dBA CNEL for new residential developments impacted by transportation noise sources such as arterial roads, freeways, airports, railroads, and warehousing uses.

The City of Chino General Plan Noise Element does not identify criteria to assess the impacts associated with exterior off-site transportation-related noise impacts at non-noise-sensitive uses, such as industrial, and therefore, the Office of Planning and Research (OPR) land use/noise compatibility criteria, found in Figure 2 of the *General Plan Guidelines, Appendix C: Noise Element Guidelines* criteria can be used to assess potential impacts at adjacent land uses. The *normally acceptable* exterior noise level for non-noise-sensitive land use, such as industrial use, is 70 dBA CNEL. Noise levels greater than 70 dBA CNEL are considered *conditionally acceptable* per the *Land Use Compatibility Criteria*. (14)

ADJACENT JURISDICTIONS

The City of Chino residential exterior noise level standard for transportation noise sources of 65 dBA CNEL is generally consistent with the adjacent jurisdictional guidelines of the City of Chino Hills, City of Ontario, and City of Eastvale, as indicated in Table 7-1 of the City of Chino Hills General Plan, The Ontario Plan Safety Section on Noise Hazards (Table LU-7), and Table N-3 of the City of Eastvale General Plan Noise Element, respectively. As such, this noise study relies on the 65 dBA CNEL City of Chino residential exterior noise level standard for transportation noise sources when evaluating Project-related off-site traffic noise level increases at noise-sensitive land uses. (15) (16) (17) In addition, the guidelines of the City of Chino Hills, City of Ontario, and City of Eastvale, as indicated in their respective General Plans, also generally identify 70 dBA CNEL as *normally acceptable* for non-noise-sensitive uses, such as industrial.

3.4 OPERATIONAL NOISE STANDARDS

To analyze noise impacts originating from a designated fixed location or private property such as the Majestic Chino Heritage, operational noise that may include roof-top air conditioning units, idling trucks, delivery truck activities, backup alarms, as well as loading and unloading of dry goods, and parking lot vehicle movements are typically evaluated against standards established under a City's Municipal Code. Since nearby sensitive receiver locations are located in the adjacent City of Chino Hills, applicable noise level standards of each jurisdiction are used in this analysis to evaluate potential impacts.

3.4.1 CITY OF CHINO MUNICIPAL CODE

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. (18) These standards shall apply for a cumulative period of 30 minutes in any hour, as well as the standard plus 5 dBA cannot be exceeded for a cumulative period of more than 15 minutes in any hour, or the standard plus 10 dBA for a cumulative period of more than 5 minutes in any hour, or the standard plus 15 dBA for a cumulative period of more than 1 minute in any hour, or the standard plus 20 dBA for any period of time. The City of Chino Municipal Code operational noise level standards are shown on Table 3-1 and included in Appendix 3.1.

3.4.2 CITY OF CHINO HILLS MUNICIPAL CODE

The City of Chino Hills Municipal Code, Chapter 16 *Performance Standards*, Section 16.48.020(B) *Noise Standards*, identifies the City's standards as the *"Zone C" noise standard for that receiving land use specified in Table N-1 of the General Plan Noise Element.* (19) Consistent with Table 7-1 of the General Plan Noise Element, single-family residential land use shall not exceed a transportation-related exterior noise level of 65 dBA CNEL or an interior noise level of 45 dBA CNEL.

To assess the stationary noise sources associated with the Project, Development Code, Section 16.48.020(B)(2), identifies percentile noise level standards by land use category. The percentile noise levels represent the noise level standard (as show on Table 7-1 of the General Plan Noise Element) for that receiving land use for a cumulative period of more than 30 minutes (L_{50}) in any hour. For a cumulative period of more than fifteen minutes (L_{25}) in any hour, the standard plus 5 dBA may not be exceeded. For a cumulative period of more than five minutes (L_8) in any hour, the standard plus 10 dBA may not be exceeded. For any one minute period (L_2) in any hour, the standard plus 15 dBA may not be exceeded, and the noise standard plus 20 dBA (L_{max}) may not be exceeded for any period of time. (19) Table 3-1 shows the Chino Hills exterior noise level limits for residential uses.

TABLE 3-1: OPERATIONAL NOISE STANDARDS

City	Land Use	Time Period	Exterior Noise Level Standards (dBA)[1]				
			L_{50} (30 mins)	L_{25} (15 mins)	L_8 (5 mins)	L_2 (1 min)	L_{max} (Anytime)
Chino[2]	Residential	Daytime	55	60	65	70	75
		Nighttime	50	55	60	65	70
Chino Hills[3]		Any Time	65	70	75	80	85

[1] The percent noise level is the level exceeded "n" percent of the time during the measurement period. L_{50} is the noise level exceeded 50% of the time.
[2] Source: Section 9.40.040 of the City of Chino Municipal Code (Appendix 3.1).
[3] Source: Section 16.48.020 of the City of Chino Hills Development Code and Table 7-1 of the City of Chino Hills Noise Element. "Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

3.5 CONSTRUCTION NOISE STANDARDS

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 when measured on residential property do not endanger the public health, welfare and safety. (20) The City can authorize construction activities to occur outside of the hours specified above.

Although construction noise may not pose an immediate 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 noise-sensitive individuals. It disrupts communication 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. (21) 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 reference construction noise limit of 65 dBA L_{eq} provides an acceptable numerical threshold for determining the relative significance of Project construction noise levels at nearby residential receivers. 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 L_{eq} threshold is used to represent a single numerical average threshold to assess the potential construction noise level impacts at nearby sensitive receivers. While the L_{50} describes the median noise levels occurring 50 percent of the time, the L_{eq} accounts for the total energy (average) observed for the entire hour during construction activities. In addition, the City of Chino Hills and Eastvale do not identify specific construction noise level thresholds, and as such, this analysis relies on the conservative City of Chino 65 dBA L_{eq} threshold.

Mobile construction equipment will operate throughout the Project site and will not remain stationary, and therefore, the stationary-source noise level limits of Section 9.40.040 of the City of Chino Municipal Code are not applied to Project construction noise levels. Moreover, since the City of Chino specifically identifies a 65 dBA exterior noise level limit for construction noise, the previously identified Municipal Code stationary-source noise level limits described in Section 3.4 for operational noise are not used in the evaluation of potential construction noise impacts.

3.6 VIBRATION STANDARDS

To analyze vibration impacts originating from the operation and construction of the Majestic Chino Heritage, vibration-generating activities are typically evaluated against standards established under a City's Municipal Code. The City of Chino and Chino Hills Municipal Code and the City of Eastvale General Plan vibration level standards are used in this analysis to assess potential impacts at nearby sensitive receiver locations within each jurisdiction, respectively.

The Project construction vibration levels are evaluated in this report base on the City of Chino 0.05 in/sec RMS vibration level standard, the City of Chino Hills 0.2 in/sec PPV standard, and the City of Eastvale 0.0787 in/sec PPV standard. (18) (19) (16)

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

4.1 CEQA GUIDELINES NOT FURTHER ANALYZED

Based on future Year 2030 conditions provided in the *Chino Airport Master Plan* and the *Airport Comprehensive Land Use Plan*, the Project site is located outside of the 55 to 60 dBA CNEL noise level contour boundary. (22) As such, exterior noise levels due to aircraft overflight activities would not exceed the exterior noise level standards of the City of Chino General Plan Noise Element, and Project interior noise levels would be reduced with standard building construction. Therefore, no impact related to the exposure of people residing or working in the Project area to excessive airport related noise levels is anticipated, and no further analysis is required under Guideline C.

4.2 SIGNIFICANCE CRITERIA SUMMARY

Noise impacts shall be considered significant if any of the following occur as a direct result of the proposed development. The significance criteria is shown on Table 4-1.

OFF-SITE TRAFFIC NOISE

- When off-site traffic noise levels, without or with the Project, at existing and future noise-sensitive land uses (e.g. residential, schools, churches, etc.) exceed the 65 dBA CNEL standard for noise-sensitive uses identified in Table N-3 of the City of Chino General Plan Noise Element, and the Project creates a community noise level increase of greater than 1.5 dBA CNEL (FICON). (23)

- When off-site traffic noise levels, without or with the Project, at existing and future non-noise-sensitive land uses (e.g. industrial, etc.) exceed the OPR General Plan Guidelines, Appendix C: Noise Element Guidelines, *normally acceptable* 70 dBA CNEL noise level criteria and the Project creates a community noise level increase of greater than 1.5 dBA CNEL (FICON). (23)

OPERATIONAL NOISE

- If Project-related operational (stationary-source) noise levels exceed the exterior noise level standards for sensitive residential land uses in the City of Chino or City of Chino Hills, as previously shown on Table 3-1.

OPERATIONAL VIBRATION

- If long-term Project-generated operational-source vibration levels could exceed:
    - the vibration standard of 0.05 inch/sec RMS at noise-sensitive receiver locations in the City of Chino;
    - the vibration standard of 0.2 inch/sec PPV at noise-sensitive receiver locations in the City of Chino Hills;
    - the vibration standard of 0.0787 inch/sec PPV at noise-sensitive receiver locations in the City of Eastvale.

CONSTRUCTION NOISE

- If Project-related construction activities create noise levels during the approved hours at sensitive residential receiver locations which exceed the construction noise level limit of 65 dBA L_{eq} (City of Chino Municipal Code, Section 9.40.060(D)).

CONSTRUCTION VIBRATION

- If short-term Project-generated construction-source vibration levels could exceed:
    - the vibration standard of 0.05 inch/sec RMS at noise-sensitive receiver locations in the City of Chino;
    - the vibration standard of 0.2 inch/sec PPV at noise-sensitive receiver locations in the City of Chino Hills;
    - the vibration standard of 0.0787 inch/sec PPV at noise-sensitive receiver locations in the City of Eastvale.

TABLE 4-1: SIGNIFICANCE CRITERIA SUMMARY

Analysis	City	Receiving Land Use	Condition(s)	Significance Criteria	
				Daytime	Nighttime
Off-Site Traffic Noise	All	Noise-Sensitive[1]	If off-site traffic noise is > 65 dBA CNEL	≥ 1.5 dBA CNEL Project increase	
		Non-Noise-Sensitive[2]	If off-site traffic noise is > 70 dBA CNEL	≥ 1.5 dBA CNEL Project increase	
Operational[3]	Multiple	Noise-Sensitive	Exterior Noise Level Limits	See Table 3-1	
Construction[4,5]	All	Residential	Noise Level Threshold[4]	65 dBA L_{eq}	
	Chino	Sensitive	Vibration Level Threshold	0.05 in/sec RMS	
	Chino Hills		Vibration Level Threshold	0.2 in/sec PPV	
	Eastvale		Vibration Level Threshold	0.0787 in/sec PPV	

[1] Based on City of Chino General Plan criteria and FICON guidance (1992).
[2] Based on the land use compatibility criteria found in the Office of Planning and Research General Plan Guidelines, Figure 2, and the General Plans of the City of Chino, Chino Hills, and Eastvale, and FICON guidance (1992).
[3] Municipal Code exterior noise level limits.
[4] Based on the conservative construction noise level threshold for residential uses identified in the City of Chino Municipal Code, Section 9.40.060(D).
[5] Vibration thresholds based on the Municipal Codes of the City of Chino and Chino Hills and Eastvale General Plan.
"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.; "RMS" = root-mean-square; "PPV" = peak-particle-velocity

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5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, 11 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 Tuesday, April 2nd, 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. (24)

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*. (7) 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 near a Big League Dreams and Fairfield Ranch Park, west of the Project site. The noise level measurements collected show an overall 24-hour exterior noise level of 57.8 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 53.9 dBA L_{eq} with an average nighttime noise level of 50.3 dBA L_{eq}.
- Location L2 represents the noise levels on Mountain Avenue, north of El Prado Road south of the Project site boundary. The noise level measurements collected show an overall 24-hour exterior noise level of 62.1 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 59.0 dBA L_{eq} with an average nighttime noise level of 54.4 dBA L_{eq}.
- Location L3 represents the noise levels on Pine Avenue, near Lizze Custom Processing, southeast of the Project site. The 24-hour CNEL indicates that the overall exterior noise level is 67.9 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 62.6 dBA L_{eq} with an average nighttime noise level of 61.0 dBA L_{eq}.
- Location L4 represents the noise levels on Johnson Avenue, near Prado Park Equestrian Center, southeast of the Project site. The noise level measurements collected show an overall 24-hour exterior noise level of 58.3 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 53.9 dBA L_{eq} with an average nighttime noise level of 50.9 dBA L_{eq}.
- Location L5 represents the noise levels on Meadowhouse Avenue, near Meadow Square Apartment Homes, east of the Project site. 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 60.5 dBA L_{eq} with an average nighttime noise level of 58.3 dBA L_{eq}.
- Location L6 represents the noise levels in Prado Regional Park near campground areas. The noise level measurements collected show an overall 24-hour exterior noise level of 56.3 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 53.8 dBA L_{eq} with an average nighttime noise level of 48.3 dBA L_{eq}.
- Location L7 represents the noise levels on Cucamonga Road, near Vermontes Mulch, southeast of the Project site. The noise level measurements collected show an overall 24-hour exterior noise level of 58.1 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 57.0 dBA L_{eq} with an average nighttime noise level of 48.9 dBA L_{eq}.
- Location L8 represents the noise levels on Chino Corona Road, near County Road, adjacent to existing rural residential homes. The noise level measurements collected show an overall 24-hour exterior noise level of 66.1 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 62.7 dBA L_{eq} with an average nighttime noise level of 58.7 dBA L_{eq}.

- Location L9 represents the noise levels on Hereford Road, near residential construction and a vacant area, east of the Project site. The 24-hour CNEL indicates that the overall exterior noise level is 61.8 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 60.2 dBA L_{eq} with an average nighttime noise level of 53.3 dBA L_{eq}.
- Location L10 represents the noise levels at Walters Street and Hellman Avenue, adjacent to existing residential homes. The noise level measurements collected show an overall 24-hour exterior noise level of 79.7 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 75.4 dBA L_{eq} with an average nighttime noise level of 72.6 dBA L_{eq}.
- Location L11 represents the noise levels on Chandler Street, near a vacant area and existing residential neighborhood. The noise level measurements collected show an overall 24-hour exterior noise level of 65.4 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 61.9 dBA L_{eq} with an average nighttime noise level of 57.7 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.

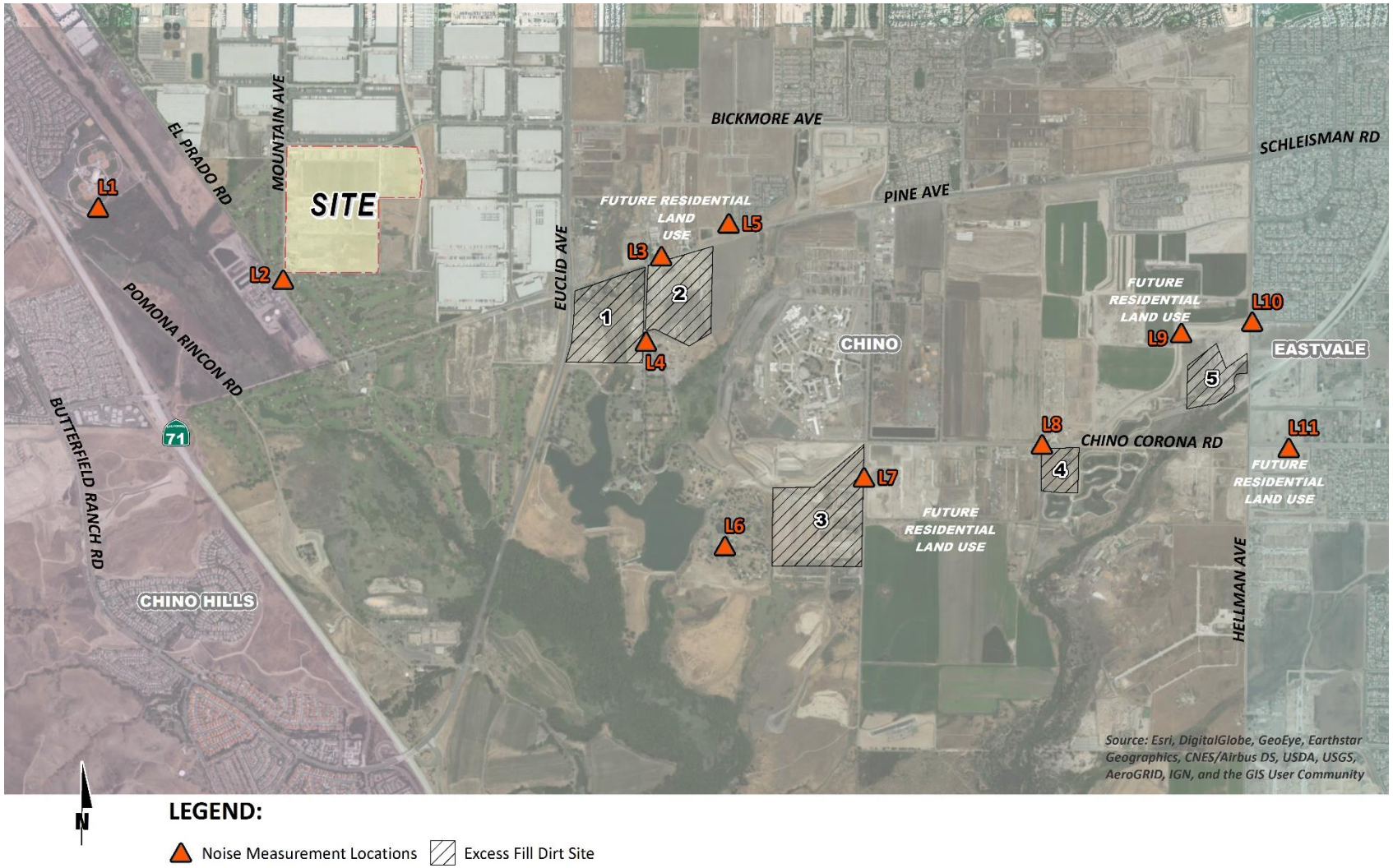
The background ambient noise levels in the Project study area are dominated by the transportation-related noise associated with the arterial roadway network and background Chino Airport aircraft flyover events. The 24-hour existing noise level measurements shown on Table 5-1 present the existing ambient 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 near a Big League Dreams and Fairfield Ranch Park, west of the Project site.	53.9	50.3	51.7	48.8	57.8
L2	Located on Mountain Avenue, north of El Prado Road south of the Project site boundary.	59.0	54.4	52.9	47.9	62.1
L3	Located on Pine Avenue, near Lizze Custom Processing, southeast of the Project site.	62.6	61.0	58.5	53.2	67.9
L4	Located on Johnson Avenue, near Prado Park Equestrian Center, southeast of the Project site.	53.9	50.9	49.2	47.1	58.3
L5	Located on Meadowhouse Avenue, near Meadow Square Apartment Homes, east of the Project site.	60.5	58.3	56.6	51.9	65.5
L6	Located in Prado Regional Park near campground areas.	53.8	48.3	48.1	45.9	56.3
L7	Located on Cucamonga Road, near Vermontes Mulch, southeast of the Project site.	57.0	48.9	49.1	43.7	58.1
L8	Located on Chino Corona Road, near County Road, adjacent to existing rural residential homes.	62.7	58.7	47.7	43.7	66.1
L9	Located on Hereford Road, near residential construction and a vacant area, east of the Project site.	60.2	53.3	51.5	45.1	61.8
L10	Located at Walters Street and Hellman Avenue, adjacent to existing residential homes.	75.4	72.6	68.9	53.4	79.7
L11	Located on Chandler Street, near a vacant area and existing residential neighborhood.	61.9	57.7	51.1	45.8	65.4

[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 estimated roadway noise impacts from vehicular traffic were calculated using a computer program that replicates the Federal Highway Administration (FHWA) Traffic Noise Prediction Model- FHWA-RD-77-108. (25) 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. (26) Adjustments are then made to the REMEL to account for: the roadway classification (e.g., collector, secondary, major or arterial), the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway), the total average daily traffic (ADT), the travel speed, the percentages of automobiles, medium trucks, and heavy trucks in the traffic volume, the roadway grade, the angle of view (e.g., whether the roadway view is blocked), the site conditions ("hard" or "soft" relates to the absorption of the ground, pavement, or landscaping), and the percentage of total ADT which flows each hour throughout a 24-hour period. Research by Caltrans has shown that the use of soft site conditions is appropriate for the application of the FHWA traffic noise prediction model used in this analysis. (27)

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

6.2.1 PROJECT OPERATIONAL TRAFFIC

The Existing, Opening Year 2022, and Horizon Year 2040 average daily traffic volumes used for this study are presented on Table 6-2 and are provided by *Majestic Chino Heritage 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 6-4 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 6-5 shows the traffic flow by vehicle type (vehicle mix) used for all without Project traffic scenarios, and Tables 6-6 to 6-8 show the vehicle mixes used for the with Project traffic scenarios.

6.2.2 SOIL IMPORT/EXPORT HAUL TRUCK TRAFFIC

The Existing and Existing with Project (haul truck trips) average daily traffic volumes used for the soil import/export off-site traffic noise analysis are presented on Table 6-3 and are based on the daytime and off-peak hour time periods, described in Section 7.5, and trips identified in the *Majestic Chino Heritage Traffic Impact Analysis*. (2)

TABLE 6-1: OFF-SITE ROADWAY PARAMETERS

ID	Roadway	Segment	Adjacent Planned (Existing if Different) Land Use[1]	Distance from Centerline to Nearest Adjacent Land Use (Feet)[2]	Vehicle Speed (mph)[3]
1	Central Av.	n/o El Prado Rd.	Industrial/Urban Reserve	60'	45
2	Central Av.	s/o El Prado Rd.	Industrial	60'	45
3	El Prado Rd.	n/o Kimball Av.	Industrial/Urban Reserve	44'	45
4	Euclid Av.	n/o Walnut Av.	Commercial	84'	55
5	Euclid Av.	n/o Riverside Dr.	Residential/Commercial	84'	55
6	Euclid Av.	n/o Chino Av.	Residential/Commercial	84'	55
7	Euclid Av.	n/o Schaefer Av.	Residential/Commercial	84'	55
8	Euclid Av.	n/o Edison Av.	Residential/Commercial	84'	55
9	Euclid Av.	n/o Eucalyptus Av.	Residential/Commercial	84'	55
10	Euclid Av.	n/o Merrill Av.	Residential/Agricultural	84'	55
11	Euclid Av.	s/o Merrill Av.	Open Space/Airport Related	84'	55
12	Euclid Av.	n/o Kimball Av.	Industrial/Airport Related	84'	55
13	Euclid Av.	n/o Bickmore Av.	Industrial/Commercial	84'	55
14	Archibald Av.	n/o Limonite Av.	Commercial/Residential	84'	55
15	Archibald Av.	s/o Limonite Av.	Commercial/Residential	76'	45
16	Archibald Av.	s/o Schleisman Rd.	Commercial/ Residential	76'	45
17	Kimball Av.	w/o Mountain Av.	Urban Reserve/Industrial	44'	50
18	Kimball Av.	w/o Euclid Av.	Industrial/Airport Related	44'	50
19	Kimball Av.	e/o Euclid Av.	Industrial/Airport Related	49'	50
20	Kimball Av.	w/o Rincon Meadows Av.	Airport Related/Residential	49'	50
21	Kimball Av.	e/o Rincon Meadows Av.	Airport Related/Residential	49'	50
22	Kimball Av.	e/o Mill Creek Av.	Airport Related/Residential	49'	50
23	Kimball Av.	e/o Main St.	Airport Related/Residential	49'	50
24	Kimball Av.	e/o Flight Av.	Industrial/Residential	49'	50
25	Limonite Av.	w/o Archibald Av.	Industrial	76'	50
26	Limonite Av.	e/o Archibald Av.	Commercial/Residential	76'	50
27	Pine Av.	w/o El Prado Rd.	Open Space (Golf Course)	60'	45
28	Pine Av.	w/o Euclid Av.	Industrial/Open Space	60'	45
29	Pine Av.	e/o Euclid Av.	Comm./Recreation (Residential)	60'	45
30	Pine Av.	w/o Chino Corona Rd.	Commercial/Residential	60'	45
31	Pine Av.	w/o W. Preserve Loop	Residential	60'	45
32	Pine Av.	w/o E. Preserve Loop	Residential	60'	45
33	Pine Av.	w/o Hellman Av.	Residential	60'	45
34	Schleisman Rd.	w/o Archibald Av.	Commercial/Residential	76'	45
35[4]	Chino Corona Rd.	s/o Pine Av.	Commercial/Residential	30'	45
36[4]	Chino Corona Rd.	e/o Cucamonga Av.	Residential/Agricultural	30'	40
37[4]	Hellman Av.	s/o Pine Av.	Residential	49'	45

[1] Sources: Land Use Maps of the City of Chino, Chino Hills, Ontario, and Eastvale, and aerial imagery.
[2] Distance 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: Majestic Chino Heritage Traffic Impact Analysis, prepared by Urban Crossroads, Inc.
[4] Segments 35 to 37 are only analyzed under Existing and Existing with Project conditions to determine potential off-site traffic noise impacts during dirt haul truck trips associated with Project construction.

TABLE 6-2: OPERATIONAL AVERAGE DAILY TRAFFIC VOLUMES

ID	Roadway	Segment	Average Daily Traffic Volumes[1]					
			Existing 2019		Opening Year 2022		Horizon Year 2040	
			Without Project	With Project	Without Project	With Project	Without Project	With Project
1	Central Av.	n/o El Prado Rd.	29,420	29,772	31,600	31,954	33,180	33,535
2	Central Av.	s/o El Prado Rd.	34,911	35,873	37,909	38,873	39,805	40,021
3	El Prado Rd.	n/o Kimball Av.	24,718	26,099	27,269	28,653	28,632	29,164
4	Euclid Av.	n/o Walnut Av.	30,254	30,863	34,918	35,531	52,793	53,422
5	Euclid Av.	n/o Riverside Dr.	25,283	25,924	29,681	30,326	45,572	46,231
6	Euclid Av.	n/o Chino Av.	25,245	25,994	29,908	30,662	49,051	49,822
7	Euclid Av.	n/o Schaefer Av.	27,794	28,582	32,723	33,515	49,457	50,264
8	Euclid Av.	n/o Edison Av.	29,878	30,668	35,053	35,847	52,051	52,860
9	Euclid Av.	n/o Eucalyptus Av.	27,743	28,639	32,935	33,836	47,542	48,456
10	Euclid Av.	n/o Merrill Av.	31,921	32,894	36,593	37,570	47,149	48,135
11	Euclid Av.	s/o Merrill Av.	30,618	31,662	34,987	36,035	49,987	51,048
12	Euclid Av.	n/o Kimball Av.	30,229	31,272	34,574	35,621	49,377	50,437
13	Euclid Av.	n/o Bickmore Av.	18,579	19,643	22,353	23,421	36,945	38,833
14	Archibald Av.	n/o Limonite Av.	25,446	25,613	29,340	29,511	46,489	46,675
15	Archibald Av.	s/o Limonite Av.	24,166	24,896	27,324	28,057	36,298	36,347
16	Archibald Av.	s/o Schleisman Rd.	21,994	22,146	24,024	24,178	27,702	27,859
17	Kimball Av.	w/o Mountain Av.	19,433	20,629	21,661	22,859	22,744	23,271
18	Kimball Av.	w/o Euclid Av.	22,184	22,245	24,434	24,497	29,863	29,889
19	Kimball Av.	e/o Euclid Av.	17,975	18,063	20,429	20,520	24,348	25,135
20	Kimball Av.	w/o Rincon Meadows Av.	19,031	19,120	21,291	21,382	22,356	23,141
21	Kimball Av.	e/o Rincon Meadows Av.	18,215	18,304	20,432	20,523	21,454	22,238
22	Kimball Av.	e/o Mill Creek Av.	16,458	16,545	18,591	18,680	19,521	20,303
23	Kimball Av.	e/o Main St.	15,466	15,552	17,491	17,579	18,365	19,110
24	Kimball Av.	e/o Flight Av.	13,131	13,143	14,790	14,803	15,529	16,235
25	Limonite Av.	w/o Archibald Av.	n/a	n/a	n/a	n/a	27,217	27,934
26	Limonite Av.	e/o Archibald Av.	18,317	18,897	22,105	22,688	43,320	43,906
27	Pine Av.	w/o El Prado Rd.	25	25	27	27	27,780	29,483
28	Pine Av.	w/o Euclid Av.	7,306	7,979	7,772	8,446	25,288	25,605
29	Pine Av.	e/o Euclid Av.	25,747	26,758	28,876	29,889	37,279	37,606
30	Pine Av.	w/o Chino Corona Rd.	29,771	30,785	32,911	33,928	36,277	36,604
31	Pine Av.	w/o W. Preserve Loop	16,445	17,411	18,578	19,546	19,507	19,782
32	Pine Av.	w/o E. Preserve Loop	26,664	27,639	30,018	30,996	31,519	31,805
33	Pine Av.	w/o Hellman Av.	26,513	27,488	29,448	30,426	30,920	31,206
34	Schleisman Rd.	w/o Archibald Av.	28,660	29,565	31,944	32,852	38,337	38,557

[1] Source: Majestic Chino Heritage 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: SOIL IMPORT/EXPORT AVERAGE DAILY TRAFFIC VOLUMES

ID	Roadway	Segment	Average Daily Traffic Volumes[1]		
			Existing 2019		
			Without Project	With Daytime Hauling	With Off-Peak Hauling
29	Pine Av.	e/o Euclid Av.	25,747	27,093	27,093
30	Pine Av.	w/o Chino Corona Rd.	29,771	31,117	31,117
31	Pine Av.	w/o W. Preserve Loop	16,445	17,791	17,791
32	Pine Av.	w/o E. Preserve Loop	26,664	28,010	28,010
33	Pine Av.	w/o Hellman Av.	26,513	27,859	27,859
35	Chino Corona Rd.	s/o Pine Av.	3,068	4,400	4,400
36	Chino Corona Rd.	e/o Cucamonga Av.	3,068	4,400	4,400
37	Hellman Av.	s/o Pine Av.	13,118	14,464	14,464

[1] Source: Majestic Chino Heritage 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 6-4: TIME OF DAY VEHICLE SPLITS

Vehicle Type	Time of Day Splits			Total of Time of Day Splits
	Daytime	Evening	Nighttime	
Autos	66.20%	13.50%	20.30%	100.00%
Medium Trucks	77.10%	5.30%	17.60%	100.00%
Heavy Trucks	86.30%	1.50%	12.20%	100.00%

Based on an existing vehicle count taken at Pine Avenue and Chino Corona Road (Majestic Chino Heritage 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: WITHOUT PROJECT CONDITIONS VEHICLE MIX

Classification	Total % Traffic Flow			Total
	Autos	Medium Trucks	Heavy Trucks	
All Segments	93.40%	4.70%	1.90%	100.00%

Based on an existing vehicle count taken at Pine Avenue and Chino Corona Road (Majestic Chino Heritage 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 6-6: EXISTING WITH PROJECT CONDITIONS VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Central Av.	n/o El Prado Rd.	93.47%	4.65%	1.88%	100.00%
2	Central Av.	s/o El Prado Rd.	92.99%	4.82%	2.19%	100.00%
3	El Prado Rd.	n/o Kimball Av.	93.11%	4.72%	2.17%	100.00%
4	Euclid Av.	n/o Walnut Av.	92.46%	5.06%	2.48%	100.00%
5	Euclid Av.	n/o Riverside Dr.	92.29%	5.12%	2.59%	100.00%
6	Euclid Av.	n/o Chino Av.	92.32%	5.10%	2.58%	100.00%
7	Euclid Av.	n/o Schaefer Av.	92.42%	5.06%	2.52%	100.00%
8	Euclid Av.	n/o Edison Av.	92.49%	5.03%	2.48%	100.00%
9	Euclid Av.	n/o Eucalyptus Av.	92.45%	5.04%	2.51%	100.00%
10	Euclid Av.	n/o Merrill Av.	92.59%	4.98%	2.43%	100.00%
11	Euclid Av.	s/o Merrill Av.	92.57%	4.99%	2.44%	100.00%
12	Euclid Av.	n/o Kimball Av.	92.56%	4.99%	2.45%	100.00%
13	Euclid Av.	n/o Bickmore Av.	92.28%	5.07%	2.65%	100.00%
14	Archibald Av.	n/o Limonite Av.	93.44%	4.67%	1.89%	100.00%
15	Archibald Av.	s/o Limonite Av.	93.36%	4.66%	1.98%	100.00%
16	Archibald Av.	s/o Schleisman Rd.	93.33%	4.72%	1.95%	100.00%
17	Kimball Av.	w/o Mountain Av.	92.98%	4.77%	2.26%	100.00%
18	Kimball Av.	w/o Euclid Av.	93.23%	4.77%	2.00%	100.00%
19	Kimball Av.	e/o Euclid Av.	93.43%	4.68%	1.89%	100.00%
20	Kimball Av.	w/o Rincon Meadows Av.	93.42%	4.68%	1.89%	100.00%
21	Kimball Av.	e/o Rincon Meadows Av.	93.43%	4.68%	1.89%	100.00%
22	Kimball Av.	e/o Mill Creek Av.	93.43%	4.68%	1.89%	100.00%
23	Kimball Av.	e/o Main St.	93.43%	4.68%	1.89%	100.00%
24	Kimball Av.	e/o Flight Av.	93.40%	4.70%	1.90%	100.00%
25	Limonite Av.	w/o Archibald Av.	93.40%	4.70%	1.90%	100.00%
26	Limonite Av.	e/o Archibald Av.	93.29%	4.69%	2.02%	100.00%
27	Pine Av.	w/o El Prado Rd.	93.40%	4.70%	1.90%	100.00%
28	Pine Av.	w/o Euclid Av.	92.40%	4.96%	2.64%	100.00%
29	Pine Av.	e/o Euclid Av.	93.33%	4.66%	2.01%	100.00%
30	Pine Av.	w/o Chino Corona Rd.	93.34%	4.66%	2.00%	100.00%
31	Pine Av.	w/o W. Preserve Loop	93.28%	4.64%	2.07%	100.00%
32	Pine Av.	w/o E. Preserve Loop	93.33%	4.66%	2.01%	100.00%
33	Pine Av.	w/o Hellman Av.	93.33%	4.66%	2.01%	100.00%
34	Schleisman Rd.	w/o Archibald Av.	93.32%	4.68%	2.01%	100.00%

[1] Source: Majestic Chino Heritage Traffic Impact Analysis, Urban Crossroads, Inc.

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

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

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Central Av.	n/o El Prado Rd.	93.47%	4.65%	1.88%	100.00%
2	Central Av.	s/o El Prado Rd.	93.03%	4.81%	2.16%	100.00%
3	El Prado Rd.	n/o Kimball Av.	93.14%	4.72%	2.15%	100.00%
4	Euclid Av.	n/o Walnut Av.	92.58%	5.01%	2.41%	100.00%
5	Euclid Av.	n/o Riverside Dr.	92.45%	5.06%	2.49%	100.00%
6	Euclid Av.	n/o Chino Av.	92.48%	5.04%	2.48%	100.00%
7	Euclid Av.	n/o Schaefer Av.	92.57%	5.01%	2.43%	100.00%
8	Euclid Av.	n/o Edison Av.	92.62%	4.99%	2.39%	100.00%
9	Euclid Av.	n/o Eucalyptus Av.	92.60%	4.99%	2.42%	100.00%
10	Euclid Av.	n/o Merrill Av.	92.69%	4.95%	2.36%	100.00%
11	Euclid Av.	s/o Merrill Av.	92.67%	4.95%	2.38%	100.00%
12	Euclid Av.	n/o Kimball Av.	92.66%	4.95%	2.38%	100.00%
13	Euclid Av.	n/o Bickmore Av.	92.46%	5.01%	2.53%	100.00%
14	Archibald Av.	n/o Limonite Av.	93.43%	4.68%	1.89%	100.00%
15	Archibald Av.	s/o Limonite Av.	93.36%	4.67%	1.97%	100.00%
16	Archibald Av.	s/o Schleisman Rd.	93.34%	4.72%	1.95%	100.00%
17	Kimball Av.	w/o Mountain Av.	93.02%	4.76%	2.22%	100.00%
18	Kimball Av.	w/o Euclid Av.	93.24%	4.76%	1.99%	100.00%
19	Kimball Av.	e/o Euclid Av.	93.42%	4.68%	1.89%	100.00%
20	Kimball Av.	w/o Rincon Meadows Av.	93.42%	4.68%	1.89%	100.00%
21	Kimball Av.	e/o Rincon Meadows Av.	93.42%	4.68%	1.89%	100.00%
22	Kimball Av.	e/o Mill Creek Av.	93.43%	4.68%	1.89%	100.00%
23	Kimball Av.	e/o Main St.	93.43%	4.68%	1.89%	100.00%
24	Kimball Av.	e/o Flight Av.	93.40%	4.70%	1.90%	100.00%
25	Limonite Av.	w/o Archibald Av.	93.40%	4.70%	1.90%	100.00%
26	Limonite Av.	e/o Archibald Av.	93.31%	4.69%	2.00%	100.00%
27	Pine Av.	w/o El Prado Rd.	93.40%	4.70%	1.90%	100.00%
28	Pine Av.	w/o Euclid Av.	92.45%	4.95%	2.60%	100.00%
29	Pine Av.	e/o Euclid Av.	93.34%	4.66%	2.00%	100.00%
30	Pine Av.	w/o Chino Corona Rd.	93.35%	4.67%	1.99%	100.00%
31	Pine Av.	w/o W. Preserve Loop	93.30%	4.65%	2.05%	100.00%
32	Pine Av.	w/o E. Preserve Loop	93.33%	4.67%	2.00%	100.00%
33	Pine Av.	w/o Hellman Av.	93.33%	4.67%	2.00%	100.00%
34	Schleisman Rd.	w/o Archibald Av.	93.32%	4.68%	2.00%	100.00%

[1] Source: Majestic Chino Heritage Traffic Impact Analysis, Urban Crossroads, Inc.

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

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

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Central Av.	n/o El Prado Rd.	93.46%	4.65%	1.88%	100.00%
2	Central Av.	s/o El Prado Rd.	93.43%	4.68%	1.89%	100.00%
3	El Prado Rd.	n/o Kimball Av.	93.51%	4.62%	1.87%	100.00%
4	Euclid Av.	n/o Walnut Av.	92.86%	4.91%	2.24%	100.00%
5	Euclid Av.	n/o Riverside Dr.	92.78%	4.94%	2.29%	100.00%
6	Euclid Av.	n/o Chino Av.	92.84%	4.91%	2.26%	100.00%
7	Euclid Av.	n/o Schaefer Av.	92.85%	4.90%	2.25%	100.00%
8	Euclid Av.	n/o Edison Av.	92.87%	4.89%	2.23%	100.00%
9	Euclid Av.	n/o Eucalyptus Av.	92.84%	4.90%	2.26%	100.00%
10	Euclid Av.	n/o Merrill Av.	92.85%	4.89%	2.26%	100.00%
11	Euclid Av.	s/o Merrill Av.	92.89%	4.88%	2.24%	100.00%
12	Euclid Av.	n/o Kimball Av.	92.88%	4.88%	2.24%	100.00%
13	Euclid Av.	n/o Bickmore Av.	92.76%	4.88%	2.36%	100.00%
14	Archibald Av.	n/o Limonite Av.	93.42%	4.69%	1.89%	100.00%
15	Archibald Av.	s/o Limonite Av.	93.36%	4.72%	1.93%	100.00%
16	Archibald Av.	s/o Schleisman Rd.	93.35%	4.71%	1.94%	100.00%
17	Kimball Av.	w/o Mountain Av.	93.54%	4.60%	1.86%	100.00%
18	Kimball Av.	w/o Euclid Av.	93.40%	4.70%	1.90%	100.00%
19	Kimball Av.	e/o Euclid Av.	93.44%	4.62%	1.94%	100.00%
20	Kimball Av.	w/o Rincon Meadows Av.	93.44%	4.62%	1.94%	100.00%
21	Kimball Av.	e/o Rincon Meadows Av.	93.44%	4.61%	1.94%	100.00%
22	Kimball Av.	e/o Mill Creek Av.	93.45%	4.61%	1.95%	100.00%
23	Kimball Av.	e/o Main St.	93.44%	4.61%	1.95%	100.00%
24	Kimball Av.	e/o Flight Av.	93.43%	4.60%	1.97%	100.00%
25	Limonite Av.	w/o Archibald Av.	93.42%	4.64%	1.94%	100.00%
26	Limonite Av.	e/o Archibald Av.	93.39%	4.68%	1.93%	100.00%
27	Pine Av.	w/o El Prado Rd.	92.38%	5.02%	2.60%	100.00%
28	Pine Av.	w/o Euclid Av.	93.32%	4.71%	1.97%	100.00%
29	Pine Av.	e/o Euclid Av.	93.34%	4.71%	1.95%	100.00%
30	Pine Av.	w/o Chino Corona Rd.	93.34%	4.71%	1.95%	100.00%
31	Pine Av.	w/o W. Preserve Loop	93.28%	4.72%	2.00%	100.00%
32	Pine Av.	w/o E. Preserve Loop	93.32%	4.72%	1.96%	100.00%
33	Pine Av.	w/o Hellman Av.	93.32%	4.72%	1.96%	100.00%
34	Schleisman Rd.	w/o Archibald Av.	93.33%	4.72%	1.95%	100.00%

[1] Source: Majestic Chino Heritage Traffic Impact Analysis, Urban Crossroads, Inc.

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

6.3 VIBRATION ASSESSMENT

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

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

TABLE 6-9: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

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

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

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7 OFF-SITE 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 *Majestic Chino Heritage Traffic Impact Analysis*. (2) Noise contour boundaries represent the equal levels of noise exposure and are measured in CNEL from the center of the roadway. Noise contours were developed for the following traffic scenarios:

PROJECT OPERATIONAL TRAFFIC

- Existing Conditions Without Project: This scenario refers to the existing present-day noise conditions without the proposed Project.
    - Existing With Project: This scenario refers to the existing present-day noise conditions with the proposed Project.
- Opening Year 2022 Without the Project: This scenario refers to Opening Year noise conditions without the proposed Project.
    - Opening Year 2022 With Project: This scenario includes all cumulative projects identified in the *Traffic Impact Analysis*.
- Horizon Year 2040 Without Project: This scenario refers to the background noise conditions at Horizon Year 2040 without the proposed Project.
    - Horizon Year 2040 With Project: This scenario corresponds to Horizon Year 2040 conditions, and includes all cumulative projects identified in the *Traffic Impact Analysis*.

SOIL IMPORT/EXPORT HAUL TRUCK CONSTRUCTION TRAFFIC

- Existing Conditions Without Project: This scenario refers to the existing present-day noise conditions without the proposed Project.
    - Existing With Project: This scenario refers to the existing present-day noise conditions with the proposed soil import/export truck haul trips to the Excess Fill Dirt Sites.

7.1 PROJECT OPERATIONAL TRAFFIC NOISE CONTOURS

Noise contours were used to assess the Project's incremental traffic-related noise impacts at land uses adjacent to roadways conveying Project traffic. The noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway for the 70, 65, and 60 dBA noise levels. The noise contours do not consider the effect of any existing noise barriers or topography that may attenuate ambient noise levels. In addition, because the noise contours reflect modeling of vehicular noise on area roadways, they appropriately do not reflect noise contributions from the surrounding stationary noise sources within the Project study area. Tables 7-1 and 7-6 present a summary of the exterior traffic noise levels, without barrier attenuation, for the study area roadway segments analyzed from the without Project to the with Project conditions for Existing, Opening Year 2022, and Horizon Year 2040 conditions. Appendix 7.1 includes a summary of the traffic noise level contours for each of the traffic scenarios.

TABLE 7-1: EXISTING WITHOUT PROJECT CONDITIONS NOISE CONTOURS

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Nearest Adjacent Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Central Av.	n/o El Prado Rd.	Industrial/Urban Reserve	74.5	119	257	553
2	Central Av.	s/o El Prado Rd.	Industrial	75.3	136	293	632
3	El Prado Rd.	n/o Kimball Av.	Industrial/Urban Reserve	74.7	90	194	417
4	Euclid Av.	n/o Walnut Av.	Commercial	78.8	322	695	1497
5	Euclid Av.	n/o Riverside Dr.	Residential/Commercial	78.0	286	616	1328
6	Euclid Av.	n/o Chino Av.	Residential/Commercial	78.0	286	616	1327
7	Euclid Av.	n/o Schaefer Av.	Residential/Commercial	78.4	305	657	1414
8	Euclid Av.	n/o Edison Av.	Residential/Commercial	78.7	320	689	1484
9	Euclid Av.	n/o Eucalyptus Av.	Residential/Commercial	78.4	304	656	1413
10	Euclid Av.	n/o Merrill Av.	Residential/Agricultural	79.0	334	720	1551
11	Euclid Av.	s/o Merrill Av.	Open Space/Airport Related	78.8	325	700	1509
12	Euclid Av.	n/o Kimball Av.	Industrial/Airport Related	78.8	322	694	1496
13	Euclid Av.	n/o Bickmore Av.	Industrial/Commercial	76.6	233	502	1081
14	Archibald Av.	n/o Limonite Av.	Commercial/Residential	78.0	287	619	1334
15	Archibald Av.	s/o Limonite Av.	Commercial/Residential	71.4	94	204	438
16	Archibald Av.	s/o Schleisman Rd.	Commercial/ Residential	71.0	89	191	412
17	Kimball Av.	w/o Mountain Av.	Urban Reserve/Industrial	74.7	90	195	420
18	Kimball Av.	w/o Euclid Av.	Industrial/Airport Related	75.3	99	213	459
19	Kimball Av.	e/o Euclid Av.	Industrial/Airport Related	74.1	92	198	426
20	Kimball Av.	w/o Rincon Meadows Av.	Airport Related/Residential	74.3	95	205	443
21	Kimball Av.	e/o Rincon Meadows Av.	Airport Related/Residential	74.1	93	200	430
22	Kimball Av.	e/o Mill Creek Av.	Airport Related/Residential	73.7	87	187	402
23	Kimball Av.	e/o Main St.	Airport Related/Residential	73.4	83	179	386
24	Kimball Av.	e/o Flight Av.	Industrial/Residential	72.7	74	160	346
25	Limonite Av.	w/o Archibald Av.	Industrial	n/a	n/a	n/a	n/a
26	Limonite Av.	e/o Archibald Av.	Commercial/Residential	71.3	93	200	431
27	Pine Av.	w/o El Prado Rd.	Open Space (Golf Course)	43.8	RW	RW	RW
28	Pine Av.	w/o Euclid Av.	Industrial/Open Space	68.4	RW	101	219
29	Pine Av.	e/o Euclid Av.	Comm./Recreation (Residential)	73.9	109	235	506
30	Pine Av.	w/o Chino Corona Rd.	Commercial/Residential	74.5	120	259	558
31	Pine Av.	w/o W. Preserve Loop	Residential	71.9	81	174	376
32	Pine Av.	w/o E. Preserve Loop	Residential	74.0	112	241	518
33	Pine Av.	w/o Hellman Av.	Residential	74.0	111	240	516
34	Schleisman Rd.	w/o Archibald Av.	Commercial/Residential	72.2	106	228	491

[1] Sources: Land Use Maps of the City of Chino, Chino Hills, 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 WITH PROJECT CONDITIONS NOISE CONTOURS

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Nearest Adjacent Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Central Av.	n/o El Prado Rd.	Industrial/Urban Reserve	74.5	120	258	556
2	Central Av.	s/o El Prado Rd.	Industrial	75.6	142	307	661
3	El Prado Rd.	n/o Kimball Av.	Industrial/Urban Reserve	75.0	95	206	443
4	Euclid Av.	n/o Walnut Av.	Commercial	79.2	344	741	1596
5	Euclid Av.	n/o Riverside Dr.	Residential/Commercial	78.5	309	665	1434
6	Euclid Av.	n/o Chino Av.	Residential/Commercial	78.5	309	666	1434
7	Euclid Av.	n/o Schaefer Av.	Residential/Commercial	78.9	327	705	1520
8	Euclid Av.	n/o Edison Av.	Residential/Commercial	79.1	342	737	1587
9	Euclid Av.	n/o Eucalyptus Av.	Residential/Commercial	78.9	327	705	1520
10	Euclid Av.	n/o Merrill Av.	Residential/Agricultural	79.4	357	768	1655
11	Euclid Av.	s/o Merrill Av.	Open Space/Airport Related	79.3	348	750	1615
12	Euclid Av.	n/o Kimball Av.	Industrial/Airport Related	79.2	345	744	1603
13	Euclid Av.	n/o Bickmore Av.	Industrial/Commercial	77.3	257	554	1194
14	Archibald Av.	n/o Limonite Av.	Commercial/Residential	78.0	288	620	1336
15	Archibald Av.	s/o Limonite Av.	Commercial/Residential	71.6	97	209	449
16	Archibald Av.	s/o Schleisman Rd.	Commercial/ Residential	71.1	90	193	416
17	Kimball Av.	w/o Mountain Av.	Urban Reserve/Industrial	75.1	97	209	450
18	Kimball Av.	w/o Euclid Av.	Industrial/Airport Related	75.3	100	215	464
19	Kimball Av.	e/o Euclid Av.	Industrial/Airport Related	74.1	92	198	427
20	Kimball Av.	w/o Rincon Meadows Av.	Airport Related/Residential	74.3	96	206	443
21	Kimball Av.	e/o Rincon Meadows Av.	Airport Related/Residential	74.2	93	200	431
22	Kimball Av.	e/o Mill Creek Av.	Airport Related/Residential	73.7	87	187	402
23	Kimball Av.	e/o Main St.	Airport Related/Residential	73.4	83	179	386
24	Kimball Av.	e/o Flight Av.	Industrial/Residential	72.7	74	160	346
25	Limonite Av.	w/o Archibald Av.	Industrial	n/a	n/a	n/a	n/a
26	Limonite Av.	e/o Archibald Av.	Commercial/Residential	71.5	95	206	443
27	Pine Av.	w/o El Prado Rd.	Open Space (Golf Course)	43.8	RW	RW	RW
28	Pine Av.	w/o Euclid Av.	Industrial/Open Space	69.3	RW	115	248
29	Pine Av.	e/o Euclid Av.	Comm./Recreation (Residential)	74.1	113	243	523
30	Pine Av.	w/o Chino Corona Rd.	Commercial/Residential	74.7	124	266	574
31	Pine Av.	w/o W. Preserve Loop	Residential	72.3	85	183	395
32	Pine Av.	w/o E. Preserve Loop	Residential	74.3	115	248	535
33	Pine Av.	w/o Hellman Av.	Residential	74.2	115	247	533
34	Schleisman Rd.	w/o Archibald Av.	Commercial/Residential	72.3	109	235	505

[1] Sources: Land Use Maps of the City of Chino, Chino Hills, 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: OPENING YEAR 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	Central Av.	n/o El Prado Rd.	Industrial/Urban Reserve	74.8	125	269	580
2	Central Av.	s/o El Prado Rd.	Industrial	75.7	144	310	667
3	El Prado Rd.	n/o Kimball Av.	Industrial/Urban Reserve	75.1	96	207	446
4	Euclid Av.	n/o Walnut Av.	Commercial	79.4	355	764	1647
5	Euclid Av.	n/o Riverside Dr.	Residential/Commercial	78.7	318	686	1478
6	Euclid Av.	n/o Chino Av.	Residential/Commercial	78.7	320	689	1485
7	Euclid Av.	n/o Schaefer Av.	Residential/Commercial	79.1	340	732	1577
8	Euclid Av.	n/o Edison Av.	Residential/Commercial	79.4	356	766	1651
9	Euclid Av.	n/o Eucalyptus Av.	Residential/Commercial	79.1	341	735	1584
10	Euclid Av.	n/o Merrill Av.	Residential/Agricultural	79.6	366	789	1699
11	Euclid Av.	s/o Merrill Av.	Open Space/Airport Related	79.4	355	765	1649
12	Euclid Av.	n/o Kimball Av.	Industrial/Airport Related	79.3	352	759	1636
13	Euclid Av.	n/o Bickmore Av.	Industrial/Commercial	77.4	264	568	1223
14	Archibald Av.	n/o Limonite Av.	Commercial/Residential	78.6	316	681	1466
15	Archibald Av.	s/o Limonite Av.	Commercial/Residential	72.0	103	221	476
16	Archibald Av.	s/o Schleisman Rd.	Commercial/ Residential	71.4	94	203	437
17	Kimball Av.	w/o Mountain Av.	Urban Reserve/Industrial	75.2	97	210	451
18	Kimball Av.	w/o Euclid Av.	Industrial/Airport Related	75.7	105	227	489
19	Kimball Av.	e/o Euclid Av.	Industrial/Airport Related	74.6	100	215	464
20	Kimball Av.	w/o Rincon Meadows Av.	Airport Related/Residential	74.8	103	221	477
21	Kimball Av.	e/o Rincon Meadows Av.	Airport Related/Residential	74.6	100	215	464
22	Kimball Av.	e/o Mill Creek Av.	Airport Related/Residential	74.2	94	202	436
23	Kimball Av.	e/o Main St.	Airport Related/Residential	74.0	90	194	419
24	Kimball Av.	e/o Flight Av.	Industrial/Residential	73.2	81	174	374
25	Limonite Av.	w/o Archibald Av.	Industrial	28.7	RW	RW	RW
26	Limonite Av.	e/o Archibald Av.	Commercial/Residential	72.1	105	227	488
27	Pine Av.	w/o El Prado Rd.	Open Space (Golf Course)	44.1	RW	RW	RW
28	Pine Av.	w/o Euclid Av.	Industrial/Open Space	68.7	RW	106	228
29	Pine Av.	e/o Euclid Av.	Comm./Recreation (Residential)	74.4	118	254	547
30	Pine Av.	w/o Chino Corona Rd.	Commercial/Residential	75.0	128	277	596
31	Pine Av.	w/o W. Preserve Loop	Residential	72.5	88	189	407
32	Pine Av.	w/o E. Preserve Loop	Residential	74.6	121	260	561
33	Pine Av.	w/o Hellman Av.	Residential	74.5	119	257	554
34	Schleisman Rd.	w/o Archibald Av.	Commercial/Residential	72.6	114	245	528

[1] Sources: Land Use Maps of the City of Chino, Chino Hills, 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: OPENING YEAR WITH PROJECT CONDITIONS NOISE CONTOURS

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Nearest Adjacent Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Central Av.	n/o El Prado Rd.	Industrial/Urban Reserve	74.8	125	270	582
2	Central Av.	s/o El Prado Rd.	Industrial	76.0	150	323	696
3	El Prado Rd.	n/o Kimball Av.	Industrial/Urban Reserve	75.4	101	218	470
4	Euclid Av.	n/o Walnut Av.	Commercial	79.7	375	808	1742
5	Euclid Av.	n/o Riverside Dr.	Residential/Commercial	79.1	340	733	1578
6	Euclid Av.	n/o Chino Av.	Residential/Commercial	79.1	342	737	1587
7	Euclid Av.	n/o Schaefer Av.	Residential/Commercial	79.5	361	778	1677
8	Euclid Av.	n/o Edison Av.	Residential/Commercial	79.8	377	812	1749
9	Euclid Av.	n/o Eucalyptus Av.	Residential/Commercial	79.5	363	782	1685
10	Euclid Av.	n/o Merrill Av.	Residential/Agricultural	80.0	387	835	1799
11	Euclid Av.	s/o Merrill Av.	Open Space/Airport Related	79.8	377	813	1751
12	Euclid Av.	n/o Kimball Av.	Industrial/Airport Related	79.7	375	807	1738
13	Euclid Av.	n/o Bickmore Av.	Industrial/Commercial	78.0	286	617	1329
14	Archibald Av.	n/o Limonite Av.	Commercial/Residential	78.6	317	682	1469
15	Archibald Av.	s/o Limonite Av.	Commercial/Residential	72.1	105	226	486
16	Archibald Av.	s/o Schleisman Rd.	Commercial/ Residential	71.4	95	204	440
17	Kimball Av.	w/o Mountain Av.	Urban Reserve/Industrial	75.6	103	223	480
18	Kimball Av.	w/o Euclid Av.	Industrial/Airport Related	75.8	107	229	494
19	Kimball Av.	e/o Euclid Av.	Industrial/Airport Related	74.7	100	216	465
20	Kimball Av.	w/o Rincon Meadows Av.	Airport Related/Residential	74.8	103	222	478
21	Kimball Av.	e/o Rincon Meadows Av.	Airport Related/Residential	74.7	100	216	465
22	Kimball Av.	e/o Mill Creek Av.	Airport Related/Residential	74.2	94	203	436
23	Kimball Av.	e/o Main St.	Airport Related/Residential	74.0	90	195	419
24	Kimball Av.	e/o Flight Av.	Industrial/Residential	73.2	81	174	374
25	Limonite Av.	w/o Archibald Av.	Industrial	28.7	RW	RW	RW
26	Limonite Av.	e/o Archibald Av.	Commercial/Residential	72.3	108	232	500
27	Pine Av.	w/o El Prado Rd.	Open Space (Golf Course)	44.1	RW	RW	RW
28	Pine Av.	w/o Euclid Av.	Industrial/Open Space	69.5	RW	119	257
29	Pine Av.	e/o Euclid Av.	Comm./Recreation (Residential)	74.6	121	261	563
30	Pine Av.	w/o Chino Corona Rd.	Commercial/Residential	75.1	132	284	612
31	Pine Av.	w/o W. Preserve Loop	Residential	72.8	92	198	426
32	Pine Av.	w/o E. Preserve Loop	Residential	74.7	124	268	577
33	Pine Av.	w/o Hellman Av.	Residential	74.7	123	264	570
34	Schleisman Rd.	w/o Archibald Av.	Commercial/Residential	72.8	117	251	542

[1] Sources: Land Use Maps of the City of Chino, Chino Hills, 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: HORIZON YEAR 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	Central Av.	n/o El Prado Rd.	Industrial/Urban Reserve	75.0	129	278	600
2	Central Av.	s/o El Prado Rd.	Industrial	75.9	149	320	689
3	El Prado Rd.	n/o Kimball Av.	Industrial/Urban Reserve	75.3	99	214	460
4	Euclid Av.	n/o Walnut Av.	Commercial	81.2	467	1007	2169
5	Euclid Av.	n/o Riverside Dr.	Residential/Commercial	80.5	424	913	1967
6	Euclid Av.	n/o Chino Av.	Residential/Commercial	80.9	445	959	2066
7	Euclid Av.	n/o Schaefer Av.	Residential/Commercial	80.9	447	964	2077
8	Euclid Av.	n/o Edison Av.	Residential/Commercial	81.1	463	998	2149
9	Euclid Av.	n/o Eucalyptus Av.	Residential/Commercial	80.7	436	939	2023
10	Euclid Av.	n/o Merrill Av.	Residential/Agricultural	80.7	433	934	2012
11	Euclid Av.	s/o Merrill Av.	Open Space/Airport Related	80.9	451	971	2092
12	Euclid Av.	n/o Kimball Av.	Industrial/Airport Related	80.9	447	963	2075
13	Euclid Av.	n/o Bickmore Av.	Industrial/Commercial	79.6	368	794	1710
14	Archibald Av.	n/o Limonite Av.	Commercial/Residential	80.6	429	925	1993
15	Archibald Av.	s/o Limonite Av.	Commercial/Residential	73.2	124	267	575
16	Archibald Av.	s/o Schleisman Rd.	Commercial/ Residential	72.0	103	223	480
17	Kimball Av.	w/o Mountain Av.	Urban Reserve/Industrial	75.4	100	216	466
18	Kimball Av.	w/o Euclid Av.	Industrial/Airport Related	76.6	120	260	559
19	Kimball Av.	e/o Euclid Av.	Industrial/Airport Related	75.4	112	242	522
20	Kimball Av.	w/o Rincon Meadows Av.	Airport Related/Residential	75.0	106	229	493
21	Kimball Av.	e/o Rincon Meadows Av.	Airport Related/Residential	74.9	103	223	480
22	Kimball Av.	e/o Mill Creek Av.	Airport Related/Residential	74.4	97	209	450
23	Kimball Av.	e/o Main St.	Airport Related/Residential	74.2	93	201	432
24	Kimball Av.	e/o Flight Av.	Industrial/Residential	73.5	83	179	387
25	Limonite Av.	w/o Archibald Av.	Industrial	73.0	121	260	561
26	Limonite Av.	e/o Archibald Av.	Commercial/Residential	75.0	165	355	764
27	Pine Av.	w/o El Prado Rd.	Open Space (Golf Course)	74.2	115	247	533
28	Pine Av.	w/o Euclid Av.	Industrial/Open Space	73.8	108	232	500
29	Pine Av.	e/o Euclid Av.	Comm./Recreation (Residential)	75.5	140	301	648
30	Pine Av.	w/o Chino Corona Rd.	Commercial/Residential	75.4	137	295	636
31	Pine Av.	w/o W. Preserve Loop	Residential	72.7	91	195	421
32	Pine Av.	w/o E. Preserve Loop	Residential	74.8	125	269	579
33	Pine Av.	w/o Hellman Av.	Residential	74.7	123	266	572
34	Schleisman Rd.	w/o Archibald Av.	Commercial/Residential	73.4	128	277	596

[1] Sources: Land Use Maps of the City of Chino, Chino Hills, 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.

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

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Nearest Adjacent Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Central Av.	n/o El Prado Rd.	Industrial/Urban Reserve	75.0	130	279	602
2	Central Av.	s/o El Prado Rd.	Industrial	75.9	149	320	690
3	El Prado Rd.	n/o Kimball Av.	Industrial/Urban Reserve	75.3	100	215	463
4	Euclid Av.	n/o Walnut Av.	Commercial	81.4	485	1045	2252
5	Euclid Av.	n/o Riverside Dr.	Residential/Commercial	80.8	443	954	2054
6	Euclid Av.	n/o Chino Av.	Residential/Commercial	81.1	464	999	2153
7	Euclid Av.	n/o Schaefer Av.	Residential/Commercial	81.2	466	1005	2164
8	Euclid Av.	n/o Edison Av.	Residential/Commercial	81.4	482	1037	2235
9	Euclid Av.	n/o Eucalyptus Av.	Residential/Commercial	81.0	455	981	2113
10	Euclid Av.	n/o Merrill Av.	Residential/Agricultural	81.0	453	976	2104
11	Euclid Av.	s/o Merrill Av.	Open Space/Airport Related	81.2	470	1013	2183
12	Euclid Av.	n/o Kimball Av.	Industrial/Airport Related	81.2	467	1005	2166
13	Euclid Av.	n/o Bickmore Av.	Industrial/Commercial	80.1	395	852	1835
14	Archibald Av.	n/o Limonite Av.	Commercial/Residential	80.6	430	926	1995
15	Archibald Av.	s/o Limonite Av.	Commercial/Residential	73.2	124	268	577
16	Archibald Av.	s/o Schleisman Rd.	Commercial/ Residential	72.1	104	225	484
17	Kimball Av.	w/o Mountain Av.	Urban Reserve/Industrial	75.4	101	218	470
18	Kimball Av.	w/o Euclid Av.	Industrial/Airport Related	76.6	120	260	559
19	Kimball Av.	e/o Euclid Av.	Industrial/Airport Related	75.5	115	247	533
20	Kimball Av.	w/o Rincon Meadows Av.	Airport Related/Residential	75.2	109	234	504
21	Kimball Av.	e/o Rincon Meadows Av.	Airport Related/Residential	75.0	106	228	491
22	Kimball Av.	e/o Mill Creek Av.	Airport Related/Residential	74.6	100	215	462
23	Kimball Av.	e/o Main St.	Airport Related/Residential	74.4	96	206	444
24	Kimball Av.	e/o Flight Av.	Industrial/Residential	73.7	86	185	399
25	Limonite Av.	w/o Archibald Av.	Industrial	73.1	123	265	571
26	Limonite Av.	e/o Archibald Av.	Commercial/Residential	75.1	166	358	772
27	Pine Av.	w/o El Prado Rd.	Open Space (Golf Course)	74.9	128	275	593
28	Pine Av.	w/o Euclid Av.	Industrial/Open Space	73.9	109	236	508
29	Pine Av.	e/o Euclid Av.	Comm./Recreation (Residential)	75.6	141	304	654
30	Pine Av.	w/o Chino Corona Rd.	Commercial/Residential	75.4	138	298	643
31	Pine Av.	w/o W. Preserve Loop	Residential	72.8	92	199	428
32	Pine Av.	w/o E. Preserve Loop	Residential	74.8	126	272	586
33	Pine Av.	w/o Hellman Av.	Residential	74.8	125	269	579
34	Schleisman Rd.	w/o Archibald Av.	Commercial/Residential	73.5	130	279	602

[1] Sources: Land Use Maps of the City of Chino, Chino Hills, 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.

7.2 EXISTING CONDITION PROJECT OPERATIONAL TRAFFIC NOISE LEVEL CONTRIBUTIONS

An analysis of existing traffic noise levels plus traffic noise generated by the proposed Project has been included in this report for informational purposes. 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 2022 cumulative conditions. Moreover, a focused analysis of the construction-related soil import/export truck haul trips is provided n Section 7.5.

Table 7-1 presents the Existing without Project conditions CNEL noise levels. The without Project exterior noise levels are expected to range from 43.8 to 79.0 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-2 shows the Existing with Project conditions will range from 43.8 to 79.4 dBA CNEL. As shown on Table 7-7 the Project will generate a noise level increase of up to 0.8 dBA CNEL on the study area roadway segments.

7.3 OPENING YEAR 2022 PROJECT OPERATIONAL TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-3 presents the Opening Year without Project conditions CNEL noise levels which are expected to range from 44.1 to 79.6 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography.

Table 7-4 shows the Opening Year with Project conditions will range from 44.1 to 80.0 dBA CNEL. As shown on Table 7-8 the Project will generate a noise level increase of up to 0.8 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 with Project conditions at the land uses adjacent to roadways conveying Project traffic.

7.4 HORIZON YEAR 2040 PROJECT OPERATIONAL TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-5 presents the Horizon Year 2040 without Project conditions CNEL noise levels are expected to range from 72.0 to 81.2 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography.

Table 7-6 shows the Horizon Year 2040 with Project conditions will range from 72.1 to 81.4 dBA CNEL. As shown on Table 7-9 the Project will generate a noise level increase of up to 0.7 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 conditions at the land uses adjacent to roadways conveying Project traffic.

TABLE 7-7: EXISTING OFF-SITE 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 Exceeded?[2]
				No Project	With Project	Project Addition		
1	Central Av.	n/o El Prado Rd.	Industrial/Urban Reserve	74.5	74.5	0.0	No	No
2	Central Av.	s/o El Prado Rd.	Industrial	75.3	75.6	0.3	No	No
3	El Prado Rd.	n/o Kimball Av.	Industrial/Urban Reserve	74.7	75.0	0.4	No	No
4	Euclid Av.	n/o Walnut Av.	Commercial	78.8	79.2	0.4	No	No
5	Euclid Av.	n/o Riverside Dr.	Residential/Commercial	78.0	78.5	0.5	Yes	No
6	Euclid Av.	n/o Chino Av.	Residential/Commercial	78.0	78.5	0.5	Yes	No
7	Euclid Av.	n/o Schaefer Av.	Residential/Commercial	78.4	78.9	0.5	Yes	No
8	Euclid Av.	n/o Edison Av.	Residential/Commercial	78.7	79.1	0.4	Yes	No
9	Euclid Av.	n/o Eucalyptus Av.	Residential/Commercial	78.4	78.9	0.5	Yes	No
10	Euclid Av.	n/o Merrill Av.	Residential/Agricultural	79.0	79.4	0.4	Yes	No
11	Euclid Av.	s/o Merrill Av.	Open Space/Airport Related	78.8	79.3	0.4	No	No
12	Euclid Av.	n/o Kimball Av.	Industrial/Airport Related	78.8	79.2	0.4	No	No
13	Euclid Av.	n/o Bickmore Av.	Industrial/Commercial	76.6	77.3	0.6	No	No
14	Archibald Av.	n/o Limonite Av.	Commercial/Residential	78.0	78.0	0.0	Yes	No
15	Archibald Av.	s/o Limonite Av.	Commercial/Residential	71.4	71.6	0.2	Yes	No
16	Archibald Av.	s/o Schleisman Rd.	Commercial/ Residential	71.0	71.1	0.1	Yes	No
17	Kimball Av.	w/o Mountain Av.	Urban Reserve/Industrial	74.7	75.1	0.4	No	No
18	Kimball Av.	w/o Euclid Av.	Industrial/Airport Related	75.3	75.3	0.1	No	No
19	Kimball Av.	e/o Euclid Av.	Industrial/Airport Related	74.1	74.1	0.0	No	No
20	Kimball Av.	w/o Rincon Meadows Av.	Airport Related/Residential	74.3	74.3	0.0	Yes	No
21	Kimball Av.	e/o Rincon Meadows Av.	Airport Related/Residential	74.1	74.2	0.0	Yes	No
22	Kimball Av.	e/o Mill Creek Av.	Airport Related/Residential	73.7	73.7	0.0	Yes	No
23	Kimball Av.	e/o Main St.	Airport Related/Residential	73.4	73.4	0.0	Yes	No
24	Kimball Av.	e/o Flight Av.	Industrial/Residential	72.7	72.7	0.0	Yes	No
25	Limonite Av.	w/o Archibald Av.	Industrial	n/a	n/a	n/a	No	n/a
26	Limonite Av.	e/o Archibald Av.	Commercial/Residential	71.3	71.5	0.2	Yes	No
27	Pine Av.	w/o El Prado Rd.	Open Space (Golf Course)	43.8	43.8	0.0	No	No

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold Exceeded?[2]
				No Project	With Project	Project Addition		
28	Pine Av.	w/o Euclid Av.	Industrial/Open Space	68.4	69.3	0.8	No	No
29	Pine Av.	e/o Euclid Av.	Comm./Recreation (Residential)	73.9	74.1	0.2	Yes	No
30	Pine Av.	w/o Chino Corona Rd.	Commercial/Residential	74.5	74.7	0.2	Yes	No
31	Pine Av.	w/o W. Preserve Loop	Residential	71.9	72.3	0.3	Yes	No
32	Pine Av.	w/o E. Preserve Loop	Residential	74.0	74.3	0.2	Yes	No
33	Pine Av.	w/o Hellman Av.	Residential	74.0	74.2	0.2	Yes	No
34	Schleisman Rd.	w/o Archibald Av.	Commercial/Residential	72.2	72.3	0.2	Yes	No

[1] Sources: Land Use Maps of the City of Chino, Chino Hills, 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 7-8: OPENING YEAR OFF-SITE PROJECT-RELATED TRAFFIC NOISE IMPACTS

ID	Road	Segment	CNEL at Adjacent Land Use (dBA)[1]			Noise-Sensitive Land Use?	Threshold Exceeded?[2]
			No Project	With Project	Project Addition		
1	Central Av.	n/o El Prado Rd.	74.8	74.8	0.0	No	No
2	Central Av.	s/o El Prado Rd.	75.7	76.0	0.3	No	No
3	El Prado Rd.	n/o Kimball Av.	75.1	75.4	0.4	No	No
4	Euclid Av.	n/o Walnut Av.	79.4	79.7	0.4	No	No
5	Euclid Av.	n/o Riverside Dr.	78.7	79.1	0.4	Yes	No
6	Euclid Av.	n/o Chino Av.	78.7	79.1	0.4	Yes	No
7	Euclid Av.	n/o Schaefer Av.	79.1	79.5	0.4	Yes	No
8	Euclid Av.	n/o Edison Av.	79.4	79.8	0.4	Yes	No
9	Euclid Av.	n/o Eucalyptus Av.	79.1	79.5	0.4	Yes	No
10	Euclid Av.	n/o Merrill Av.	79.6	80.0	0.4	Yes	No
11	Euclid Av.	s/o Merrill Av.	79.4	79.8	0.4	No	No
12	Euclid Av.	n/o Kimball Av.	79.3	79.7	0.4	No	No
13	Euclid Av.	n/o Bickmore Av.	77.4	78.0	0.5	No	No
14	Archibald Av.	n/o Limonite Av.	78.6	78.6	0.0	Yes	No
15	Archibald Av.	s/o Limonite Av.	72.0	72.1	0.1	Yes	No
16	Archibald Av.	s/o Schleisman Rd.	71.4	71.4	0.1	Yes	No
17	Kimball Av.	w/o Mountain Av.	75.2	75.6	0.4	No	No
18	Kimball Av.	w/o Euclid Av.	75.7	75.8	0.1	No	No
19	Kimball Av.	e/o Euclid Av.	74.6	74.7	0.0	No	No
20	Kimball Av.	w/o Rincon Meadows Av.	74.8	74.8	0.0	Yes	No
21	Kimball Av.	e/o Rincon Meadows Av.	74.6	74.7	0.0	Yes	No
22	Kimball Av.	e/o Mill Creek Av.	74.2	74.2	0.0	Yes	No
23	Kimball Av.	e/o Main St.	74.0	74.0	0.0	Yes	No
24	Kimball Av.	e/o Flight Av.	73.2	73.2	0.0	Yes	No
25	Limonite Av.	w/o Archibald Av.	n/a	n/a	n/a	No	n/a
26	Limonite Av.	e/o Archibald Av.	72.1	72.3	0.2	Yes	No
27	Pine Av.	w/o El Prado Rd.	44.1	44.1	0.0	No	No
28	Pine Av.	w/o Euclid Av.	68.7	69.5	0.8	No	No
29	Pine Av.	e/o Euclid Av.	74.4	74.6	0.2	Yes	No
30	Pine Av.	w/o Chino Corona Rd.	75.0	75.1	0.2	Yes	No
31	Pine Av.	w/o W. Preserve Loop	72.5	72.8	0.3	Yes	No
32	Pine Av.	w/o E. Preserve Loop	74.6	74.7	0.2	Yes	No
33	Pine Av.	w/o Hellman Av.	74.5	74.7	0.2	Yes	No
34	Schleisman Rd.	w/o Archibald Av.	72.6	72.8	0.2	Yes	No

[1] The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use. Values rounded to the nearest one-tenth.

[2] Significance Criteria (Section 4).

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

TABLE 7-9: HORIZON YEAR 2040 OFF-SITE PROJECT-RELATED TRAFFIC NOISE IMPACTS

ID	Road	Segment	CNEL at Adjacent Land Use (dBA)[1]			Noise-Sensitive Land Use?	Threshold Exceeded?[2]
			No Project	With Project	Project Addition		
1	Central Av.	n/o El Prado Rd.	75.0	75.0	0.0	No	No
2	Central Av.	s/o El Prado Rd.	75.9	75.9	0.0	No	No
3	El Prado Rd.	n/o Kimball Av.	75.3	75.3	0.0	No	No
4	Euclid Av.	n/o Walnut Av.	81.2	81.4	0.2	No	No
5	Euclid Av.	n/o Riverside Dr.	80.5	80.8	0.3	Yes	No
6	Euclid Av.	n/o Chino Av.	80.9	81.1	0.3	Yes	No
7	Euclid Av.	n/o Schaefer Av.	80.9	81.2	0.3	Yes	No
8	Euclid Av.	n/o Edison Av.	81.1	81.4	0.3	Yes	No
9	Euclid Av.	n/o Eucalyptus Av.	80.7	81.0	0.3	Yes	No
10	Euclid Av.	n/o Merrill Av.	80.7	81.0	0.3	Yes	No
11	Euclid Av.	s/o Merrill Av.	80.9	81.2	0.3	No	No
12	Euclid Av.	n/o Kimball Av.	80.9	81.2	0.3	No	No
13	Euclid Av.	n/o Bickmore Av.	79.6	80.1	0.5	No	No
14	Archibald Av.	n/o Limonite Av.	80.6	80.6	0.0	Yes	No
15	Archibald Av.	s/o Limonite Av.	73.2	73.2	0.0	Yes	No
16	Archibald Av.	s/o Schleisman Rd.	72.0	72.1	0.0	Yes	No
17	Kimball Av.	w/o Mountain Av.	75.4	75.4	0.1	No	No
18	Kimball Av.	w/o Euclid Av.	76.6	76.6	0.0	No	No
19	Kimball Av.	e/o Euclid Av.	75.4	75.5	0.1	No	No
20	Kimball Av.	w/o Rincon Meadows Av.	75.0	75.2	0.1	Yes	No
21	Kimball Av.	e/o Rincon Meadows Av.	74.9	75.0	0.2	Yes	No
22	Kimball Av.	e/o Mill Creek Av.	74.4	74.6	0.2	Yes	No
23	Kimball Av.	e/o Main St.	74.2	74.4	0.2	Yes	No
24	Kimball Av.	e/o Flight Av.	73.5	73.7	0.2	Yes	No
25	Limonite Av.	w/o Archibald Av.	73.0	73.1	0.1	No	No
26	Limonite Av.	e/o Archibald Av.	75.0	75.1	0.1	Yes	No
27	Pine Av.	w/o El Prado Rd.	74.2	74.9	0.7	No	No
28	Pine Av.	w/o Euclid Av.	73.8	73.9	0.1	No	No
29	Pine Av.	e/o Euclid Av.	75.5	75.6	0.1	Yes	No
30	Pine Av.	w/o Chino Corona Rd.	75.4	75.4	0.1	Yes	No
31	Pine Av.	w/o W. Preserve Loop	72.7	72.8	0.1	Yes	No
32	Pine Av.	w/o E. Preserve Loop	74.8	74.8	0.1	Yes	No
33	Pine Av.	w/o Hellman Av.	74.7	74.8	0.1	Yes	No
34	Schleisman Rd.	w/o Archibald Av.	73.4	73.5	0.1	Yes	No

[1] The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use. Values rounded to the nearest one-tenth.

[2] Significance Criteria (Section 4).

7.5 SOIL IMPORT/EXPORT HAUL TRUCK CONSTRUCTION TRAFFIC

The 96.9-acre Project site is located at the southeast corner of Mountain Avenue and Bickmore Avenue in the City of Chino and is generally below the 566 elevation. In order for the Project to be feasible, it requires that dirt be imported to raise the proposed building elevations so that they are 567-feet above mean sea level. To accomplish this, five nearby borrow sites (or "Excess Fill Dirt Sites") have been identified that can provide export to be used as import for the Project. The order in which soil will be imported from the Excess Fill Dirt Sites is as follows (see Exhibits 7-B and 7-C):

- Excess Fill Dirt Site #1
- Excess Fill Dirt Site #3
- Excess Fill Dirt Site #4
- Excess Fill Dirt Site #5
- Excess Fill Dirt Site #2

It is our understanding that import activities from the Excess Fill Dirt Sites will not overlap with another (i.e., hauling activity at one site is independent from other sites). Soil import/export activity could occur during typical construction daytime (7:00 a.m. – 3:00 p.m.) or off-peak/nighttime (6:00 p.m. – 2:00 a.m.) hours. Notwithstanding, the off-road construction equipment is not anticipated to operate for more than eight hours per day. Exhibit 7-A shows the hauling hours in comparison to the time of day used in calculating the 24-hour CNEL for off-site traffic noise analysis. Exhibits 7-B and 7-C show the truck distribution used in the *Traffic Impact Analysis* and the associated Excess Fill Dirt Sites.

EXHIBIT 7-A: HAUL TRUCK HOURS

Hour	CNEL Timeframe	Hauling Activity
0	Nighttime	Hauling (Off-Peak)
1		
2		
3		*No Hauling Activity*
4		
5		
6		
7	Daytime	Hauling (Daytime)
8		
9		
10		
11		
12		
13		
14		
15		
16		*No Hauling Activity*
17		
18		Hauling (Off-Peak)
19	Evening	Hauling (Off-Peak)
20		
21		
22	Nighttime	Hauling (Off-Peak)
23		
24		

EXHIBIT 7-B: EXCESS FILL DIRT SITE LOCATION MAP (1 OF 2)

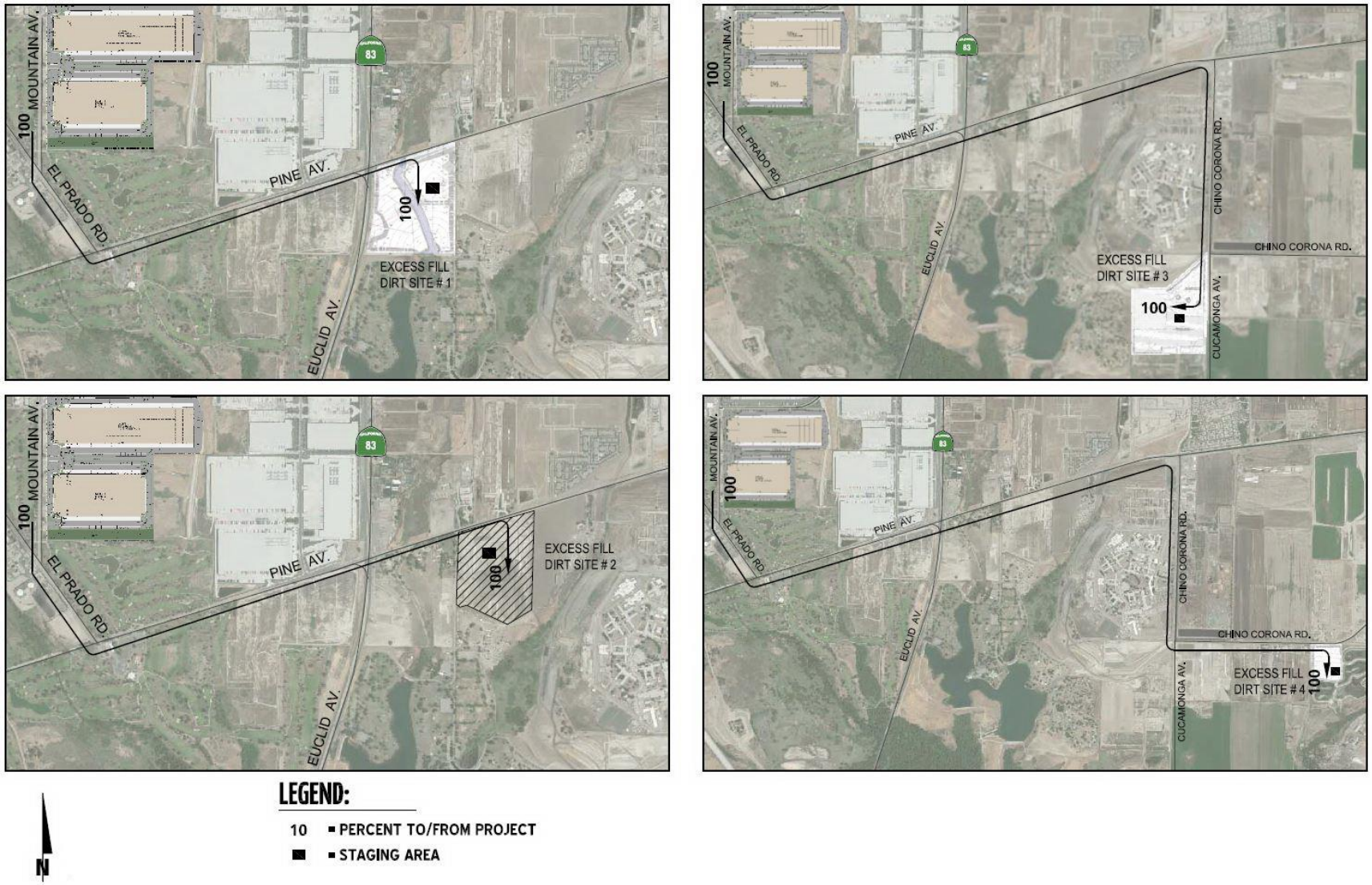


EXHIBIT 7-C: EXCESS FILL DIRT SITE LOCATION MAP (2 OF 2)

LEGEND:

10 = PERCENT TO/FROM PROJECT

■ = STAGING AREA

N

7.5.1 DAYTIME HAUL TRUCK OFF-SITE TRAFFIC NOISE IMPACTS

The following analysis presents the potential off-site traffic noise impacts if all truck haul trips occur within the daytime hours of 7:00 a.m. to 7:00 p.m. for analysis purposes using the CNEL metric. Actual daytime soil import/export haul truck activities are anticipated to occur between the hours of 7:00 a.m. and 3:00 p.m. Table 7-10 presents the Existing without Project conditions CNEL noise levels which are expected to range from 66.4 to 74.5 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-11 shows the Existing with daytime-only soil import/export truck haul trip conditions will range from 72.5 to 75.6 dBA CNEL.

As shown on Table 7-12 the Project will generate a noise level increase ranging from 1.1 to 6.1 dBA CNEL on the study area roadway segments if activity occurs during the daytime hours. Based on the significance criteria in Section 4, the Project soil import/export truck trip-related noise level increases are considered *potentially significant* impacts under Existing conditions at the land uses adjacent to roadways conveying Project traffic.

The analysis shows that the unmitigated Project-related traffic noise level increases will be *potentially significant* at existing and future noise-sensitive land uses, if built and occupied at the time of soil import/export haul truck activity adjacent to the following roadway segments, as shown on Exhibit 7-D:

- Pine Av. west of W. Preserve Loop (Excess Fill Dirt Site #5);
- Chino Corona Rd. south of Pine Av. (Excess Fill Dirt Sites #3 & #4);
- Chino Corona Rd. east of Cucamonga Av. (Excess Fill Dirt Site #4);
- Hellman Av. south of Pine Av. (Excess Fill Dirt Site #5).

TABLE 7-10: EXISTING WITHOUT PROJECT CONDITIONS NOISE CONTOURS

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Nearest Adjacent Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
29	Pine Av.	e/o Euclid Av.	Comm./Recreation (Residential)	73.9	109	235	506
30	Pine Av.	w/o Chino Corona Rd.	Commercial/Residential	74.5	120	259	558
31	Pine Av.	w/o W. Preserve Loop	Residential	71.9	81	174	376
32	Pine Av.	w/o E. Preserve Loop	Residential	74.0	112	241	518
33	Pine Av.	w/o Hellman Av.	Residential	74.0	111	240	516
35	Chino Corona Rd.	s/o Pine Av.	Commercial/Residential	67.6	RW	45	96
36	Chino Corona Rd.	e/o Cucamonga Av.	Residential/Agricultural	66.4	RW	37	80
37	Hellman Av.	s/o Pine Av.	Residential	71.6	63	136	292

[1] Sources: Land Use Maps of the City of Chino, Chino Hills, 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.

TABLE 7-11: EXISTING WITH DAYTIME IMPORT/EXPORT HAUL TRUCK TRIP 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
29	Pine Av.	e/o Euclid Av.	Comm./Recreation (Residential)	75.1	132	284	612
30	Pine Av.	w/o Chino Corona Rd.	Commercial/Residential	75.6	142	306	659
31	Pine Av.	w/o W. Preserve Loop	Residential	73.8	107	230	495
32	Pine Av.	w/o E. Preserve Loop	Residential	75.2	134	289	623
33	Pine Av.	w/o Hellman Av.	Residential	75.2	134	288	621
35	Chino Corona Rd.	s/o Pine Av.	Commercial/Residential	73.3	50	108	232
36	Chino Corona Rd.	e/o Cucamonga Av.	Residential/Agricultural	72.5	44	94	203
37	Hellman Av.	s/o Pine Av.	Residential	73.8	88	189	408

[1] Sources: Land Use Maps of the City of Chino, Chino Hills, 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.

TABLE 7-12: DAYTIME IMPORT/EXPORT OFF-SITE TRUCK TRIP-RELATED TRAFFIC NOISE IMPACTS

ID	Road	Segment	CNEL at Adjacent Land Use (dBA)[1]			Noise-Sensitive Land Use?	Threshold Exceeded?[2]
			No Project	With Project	Project Addition		
29	Pine Av.	e/o Euclid Av.	73.9	75.1	1.2	Yes	No
30	Pine Av.	w/o Chino Corona Rd.	74.5	75.6	1.1	Yes	No
31	Pine Av.	w/o W. Preserve Loop	71.9	73.8	1.9	Yes	Yes
32	Pine Av.	w/o E. Preserve Loop	74.0	75.2	1.2	Yes	No
33	Pine Av.	w/o Hellman Av.	74.0	75.2	1.2	Yes	No
35	Chino Corona Rd.	s/o Pine Av.	67.6	73.3	5.7	Yes	Yes
36	Chino Corona Rd.	e/o Cucamonga Av.	66.4	72.5	6.1	Yes	Yes
37	Hellman Av.	s/o Pine Av.	71.6	73.8	2.2	Yes	Yes

[1] The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use. Values rounded to the nearest one-tenth.
[2] Significance Criteria (Section 4).

7.5.2 OFF-PEAK HAUL TRUCK OFF-SITE TRAFFIC NOISE IMPACTS

The following analysis presents the potential off-site traffic noise impacts if all truck haul trips occur within the daytime hours of 7:00 a.m. to 7:00 p.m., evening hours of 7:00 p.m. to 10:00 p.m., and nighttime hours of 10:00 p.m. to 7:00 a.m. for analysis purposes using the CNEL metric. Actual off-peak soil import/export haul truck activities are anticipated to occur between the hours of 6:00 p.m. – 2:00 a.m. Table 7-10 previously provided the Existing without Project conditions CNEL noise levels which are expected to range from 66.4 to 74.5 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-13 shows the Existing with off-peak soil import/export truck haul trip conditions will range from 78.6 to 80.7 dBA CNEL.

As shown on Table 7-14 the Project will generate a noise level increase ranging from 4.8 to 13.5 dBA CNEL on the study area roadway segments if activity occurs during the off-peak hours. Based on the significance criteria in Section 4, the Project soil import/export truck trip-related noise level increases are considered *potentially significant* impacts under Existing conditions at the land uses adjacent to roadways conveying Project traffic.

The analysis shows that the unmitigated Project-related traffic noise level increases will be *potentially significant* at existing and future noise-sensitive land uses, if built and occupied at the time of soil import/export haul truck activity adjacent to the following roadway segments, as shown on Exhibit 7-E:

- Pine Av. east of Euclid Av. (Excess Fill Dirt Sites #2 to #5);
- Pine Av. west of Chino Corona Rd. (Excess Fill Dirt Sites #2 to #5);
- Pine Av. west of W. Preserve Loop (Excess Fill Dirt Site #5);
- Pine Av. west of E. Preserve Loop (Excess Fill Dirt Site #5);
- Pine Av. west of Hellman Av. (Excess Fill Dirt Site #5);
- Chino Corona Rd. south of Pine Av. (Excess Fill Dirt Sites #3 & #4);
- Chino Corona Rd. east of Cucamonga Av. (Excess Fill Dirt Site #4);
- Hellman Av. south of Pine Av. (Excess Fill Dirt Site #5).

TABLE 7-13: EXISTING WITH OFF-PEAK IMPORT/EXPORT HAUL TRUCK TRIP 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
29	Pine Av.	e/o Euclid Av.	Comm./Recreation (Residential)	79.1	243	523	1127
30	Pine Av.	w/o Chino Corona Rd.	Commercial/Residential	79.3	250	539	1162
31	Pine Av.	w/o W. Preserve Loop	Residential	78.6	225	484	1044
32	Pine Av.	w/o E. Preserve Loop	Residential	79.2	245	527	1135
33	Pine Av.	w/o Hellman Av.	Residential	79.1	244	526	1134
35	Chino Corona Rd.	s/o Pine Av.	Commercial/Residential	80.7	155	333	718
36	Chino Corona Rd.	e/o Cucamonga Av.	Residential/Agricultural	79.9	137	296	638
37	Hellman Av.	s/o Pine Av.	Residential	79.1	198	426	918

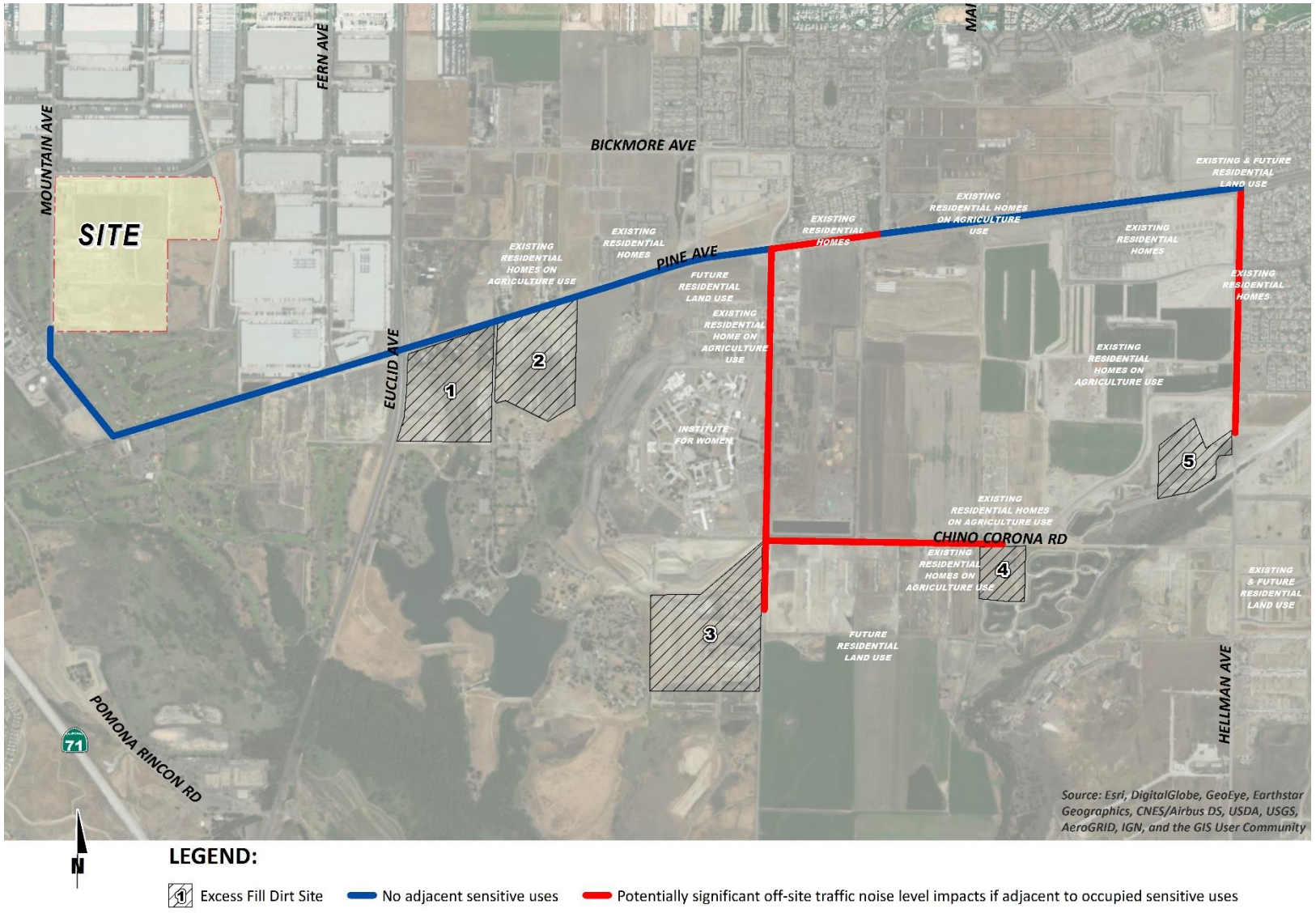
[1] Sources: Land Use Maps of the City of Chino, Chino Hills, Ontario, and Eastvale, and aerial imagery.
[2] The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.
"RW" = Location of the respective noise contour falls within the right-of-way of the road.

TABLE 7-14: OFF-PEAK IMPORT/EXPORT OFF-SITE TRUCK TRIP-RELATED TRAFFIC NOISE IMPACTS

ID	Road	Segment	CNEL at Adjacent Land Use (dBA)[1]			Noise-Sensitive Land Use?	Threshold Exceeded?[2]
			No Project	With Project	Project Addition		
29	Pine Av.	e/o Euclid Av.	73.9	79.1	5.2	Yes	Yes
30	Pine Av.	w/o Chino Corona Rd.	74.5	79.3	4.8	Yes	Yes
31	Pine Av.	w/o W. Preserve Loop	71.9	78.6	6.7	Yes	Yes
32	Pine Av.	w/o E. Preserve Loop	74.0	79.2	5.2	Yes	Yes
33	Pine Av.	w/o Hellman Av.	74.0	79.1	5.1	Yes	Yes
35	Chino Corona Rd.	s/o Pine Av.	67.6	80.7	13.1	Yes	Yes
36	Chino Corona Rd.	e/o Cucamonga Av.	66.4	79.9	13.5	Yes	Yes
37	Hellman Av.	s/o Pine Av.	71.6	79.1	7.5	Yes	Yes

[1] The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use. Values rounded to the nearest one-tenth.
[2] Significance Criteria (Section 4).

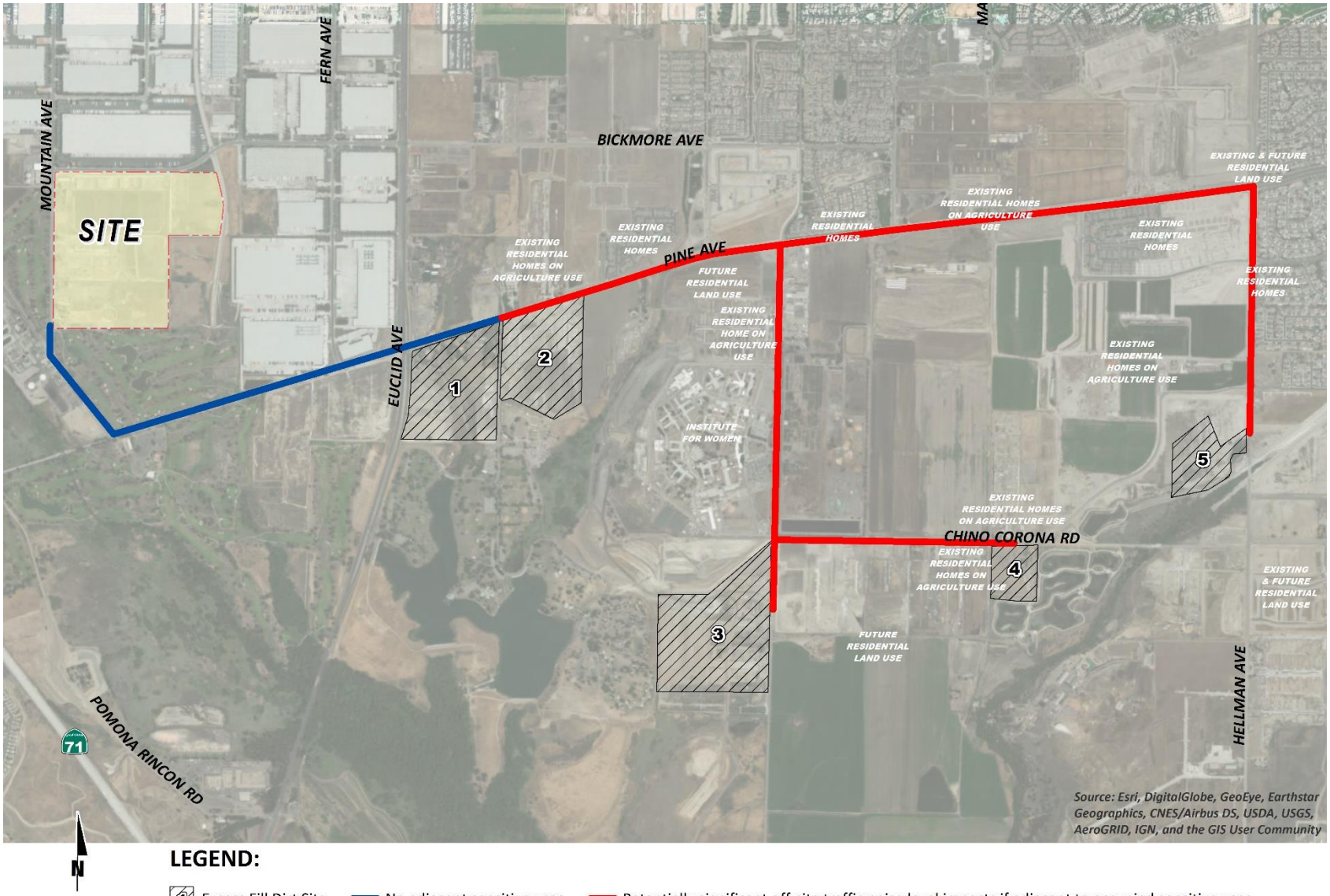
EXHIBIT 7-D: DAYTIME EXCESS FILL DIRT SITE OFF-SITE TRAFFIC NOISE IMPACTS



LEGEND:

1 Excess Fill Dirt Site — No adjacent sensitive uses — Potentially significant off-site traffic noise level impacts if adjacent to occupied sensitive uses

EXHIBIT 7-E: OFF-PEAK EXCESS FILL DIRT SITE OFF-SITE TRAFFIC NOISE IMPACTS



LEGEND:

1 Excess Fill Dirt Site — No adjacent sensitive uses — Potentially significant off-site traffic noise level impacts if adjacent to occupied sensitive uses

8 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. The Project's Biology report will analyze the significance of any potential noise impacts to sensitive wildlife species.

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

Sensitive receivers near the Project site 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 3,594 feet west of the Project site, R1 represents existing residential homes east of State Route 71 in the City of Chino Hills. A 24-hour noise level measurement was taken near this location, L1, to describe the existing ambient noise environment.

R2: Location R2 represents existing park use west of the Project site at approximately 2,938 feet, east of State Route 71 in the City of Chino Hills. A 24-hour noise level measurement was taken near this location, L1, to describe the existing ambient noise environment.

R3: Located approximately 4,240 feet east of the Project site, and 147 feet north of Excess Fill Dirt Site #2, R3 represents an existing residential home on agricultural land use on the north side of Pine Avenue in the City of Chino. A 24-hour noise level measurement was taken near this location, L3, to describe the existing ambient noise environment.

R4: Location R4 represents the existing equestrian center located roughly 135 feet south of Excess Fill Dirt Site #2, south of Pine Avenue. A 24-hour noise level measurement was taken near this location, L4, to describe the existing ambient noise environment.

R5: Located approximately 331 feet southeast of Excess Fill Dirt Site #1, R5 represents existing Prado Regional Park uses. A 24-hour noise level measurement was taken near this location, L4, to describe the existing ambient noise environment.

R6: Located approximately 487 feet north of Excess Fill Dirt Site #2, R6 represents existing residential homes north of Pine Avenue. A 24-hour noise level measurement was taken near this location, L5, to describe the existing ambient noise environment.

R7: Location R7 represents the existing women's correctional facility located roughly 653 feet north of Excess Fill Dirt Site #3, west of Chino Corona Road. A 24-hour noise level measurement was taken near this location, L7, to describe the existing ambient noise environment.

R8: Located approximately 75 feet west of Excess Fill Dirt Site #3, R8 represents existing Prado Regional Park uses. A 24-hour noise level measurement was taken near this location, L6, to describe the existing ambient noise environment.

R9: Located approximately 88 feet east of Excess Fill Dirt Site #3, R9 represents future, planned residential use east of Chino Corona Road. A 24-hour noise level measurement was taken near this location, L7, to describe the existing ambient noise environment.

R10: Location R10 represents an existing residential home on agricultural use and future residential development west of Excess Fill Dirt Site #4 at roughly 102 feet, south of Chino Corona Road. A 24-hour noise level measurement was taken near this location, L8, to describe the existing ambient noise environment.

R11: Located approximately 151 feet north of Excess Fill Dirt Site #4, R11 represents an existing residential home on agricultural use. A 24-hour noise level measurement was taken near this location, L8, to describe the existing ambient noise environment.

R12: Located approximately 752 feet north of Excess Fill Dirt Site #5, R12 represents existing residential homes west of Hellman Avenue. A 24-hour noise level measurement was taken near this location, L9, to describe the existing ambient noise environment.

R13: Location R13 represents the existing residential homes located roughly 282 feet east of Excess Fill Dirt Site #5, south of Pine Avenue in the City of Eastvale. A 24-hour noise level measurement was taken near this location, L10, to describe the existing ambient noise environment.

R14: Located approximately 1,405 feet southeast of Excess Fill Dirt Site #5, R14 represents existing and future residential uses east of Hellman Avenue in the City of Eastvale. A 24-hour noise level measurement was taken near this location, L11, to describe the existing ambient noise environment.

R15 – R22: Receiver locations R15 to R22 represent open space receiver locations that are identified for informational purposes only. The Project's Biology report will analyze the significance of any potential noise impacts to sensitive wildlife species.

EXHIBIT 8-A: RECEIVER LOCATIONS

LEGEND:

Excess Fill Dirt Site | Receiver Locations (e.g., residential) | Distance from receiver to site boundary (in feet)

Open Space 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.

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 10-1 used to estimate the Project operational noise impacts. It is important to note that the following projected noise levels assume the worst-case noise environment with the roof-top air conditioning units, idling trucks, delivery truck activities, backup alarms, as well as loading and unloading of dry goods, and parking lot vehicle movements all operating continuously. These noise level impacts will likely vary throughout the day.

9.1.1 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.

9.1.2 TRUCK IDLING, DELIVERIES, BACKUP ALARMS, AND LOADING/UNLOADING

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.

9.1.3 PARKING LOT VEHICLE MOVEMENTS (AUTOS)

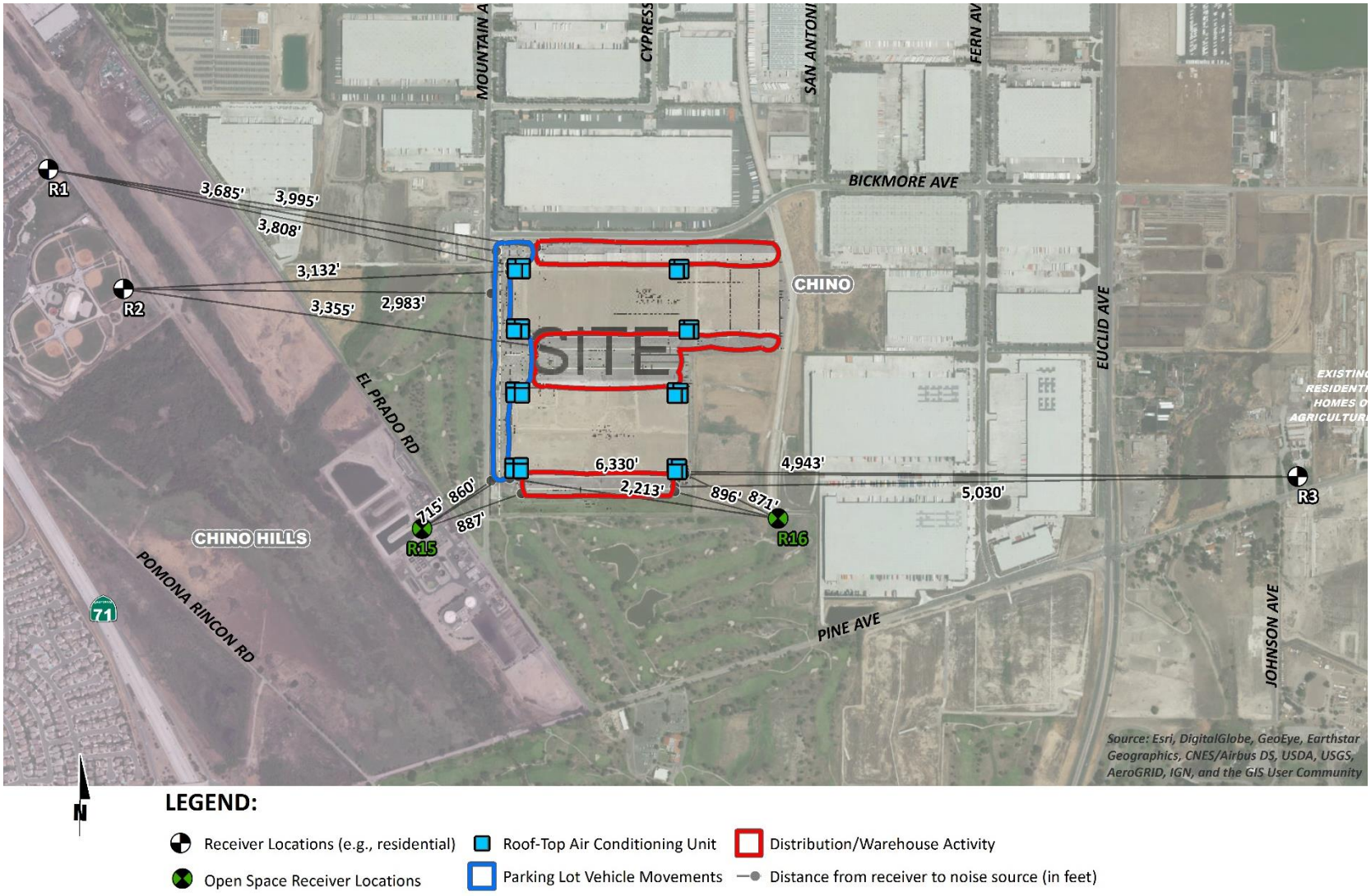
To determine the noise levels associated with parking lot vehicle movements, Urban Crossroads collected reference noise level measurements over a 24-hour period on May 17th, 2017 at the parking lot for the Panasonic Avionics Corporation in the City of Lake Forest. The peak hour of activity measured over 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)	Hourly Activity (Minutes)[4]	Noise Level (dBA L_{50})	
					@ Ref. Distance	@ 50 Feet
Roof-Top Air Conditioning Units[1]	01:00:00	5'	5'	39	74.4	54.4
Truck Unloading/Docking Activity[2]	00:15:00	30'	8'	60	64.2	59.8
Parking Lot Vehicle Movements[3]	01:00:00	10'	5'	60	49.0	35.0

[1] As measured by Urban Crossroads, Inc. on 7/27/2015 at the Santee Walmart located at 170 Town Center Parkway.
[2] Reference noise level measurements were collected on 1/7/2015 from the existing operations of the Motivational Fulfillment & Logistics Services distribution facility located at 6810 Bickmore Avenue in the City of Chino.
[3] As measured by Urban Crossroads, Inc. on 5/17/2017 at the Panasonic Avionics Corporation parking lot in the City of Lake Forest.
[4] Duration (minutes within the hour) of noise activity during peak hourly conditions.

EXHIBIT 9-A: OPERATIONAL NOISE SOURCE AND RECEIVER LOCATIONS



9.2 OPERATIONAL NOISE LEVELS

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

Table 9-2 indicates that the noise levels associated with the roof-top air conditioning units, idling trucks, delivery truck activities, backup alarms, as well as loading and unloading of dry goods, and parking lot vehicle movements are expected to range from 20.5 to 24.1 dBA L_{50} at the noise-sensitive off-site receiver locations. Open space receiver locations are shown to experience Project operational noise levels ranging from 35.5 to 35.6 dBA L_{50}. Receiver locations R15 to R22 represent open space receiver locations that are identified for informational purposes only. The Project's Biology report will analyze the significance of any potential noise impacts to sensitive wildlife species. In addition, only open space receiver locations R15 and R16 are analyzed in this section since receiver locations R17 to R22 are located further from the on-site Project operational activities, and as such, would experience operational noise levels less than those identified at R15 and R16. The 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_{50} (30 mins)	L_{25} (15 mins)	L_8 (5 mins)	L_2 (1 min)	L_{max} (<1 min)
R1	Roof-Top Air Conditioning Units	14.9	16.6	17.9	18.2	18.7
	Truck Unloading/Docking Activity	21.7	24.7	29.3	33.1	37.5
	Parking Lot Vehicle Movements	0.0	0.0	3.7	9.7	20.6
	Combined Noise Level:	**22.5**	**25.3**	**29.6**	**33.3**	**37.6**
R2	Roof-Top Air Conditioning Units	16.6	18.3	19.6	19.9	20.4
	Truck Unloading/Docking Activity	23.2	26.2	30.8	34.6	39.0
	Parking Lot Vehicle Movements	0.0	0.5	5.5	11.5	22.4
	Combined Noise Level:	**24.1**	**26.9**	**31.1**	**34.8**	**39.2**
R3	Roof-Top Air Conditioning Units	12.6	14.3	15.6	15.9	16.4
	Truck Unloading/Docking Activity	19.7	22.7	27.3	31.1	35.5
	Parking Lot Vehicle Movements	0.0	0.0	0.0	5.0	15.9
	Combined Noise Level:	**20.5**	**23.3**	**27.6**	**31.2**	**35.6**
R15	Roof-Top Air Conditioning Units	27.8	29.5	30.8	31.1	31.6
	Truck Unloading/Docking Activity	34.8	37.8	42.4	46.2	50.6
	Parking Lot Vehicle Movements	11.9	12.9	17.9	23.9	34.8
	Combined Noise Level:	**35.6**	**38.4**	**42.7**	**46.4**	**50.8**
R16	Roof-Top Air Conditioning Units	27.7	29.4	30.7	31.0	31.5
	Truck Unloading/Docking Activity	34.7	37.7	42.3	46.1	50.5
	Parking Lot Vehicle Movements	2.1	3.1	8.1	14.1	25.0
	Combined Noise Level:	**35.5**	**38.3**	**42.6**	**46.2**	**50.6**

[1] See Exhibit 9-A for the receiver and noise source locations.
[2] Reference noise sources as shown on Table 9-1.
[3] Operational noise level calculations are provided in Appendix 9.1.
Note: Receiver locations R4 to R14 are not included in this analysis since they are located further from the on-site Project operational activities, and as such, would experience operational noise levels less than those identified at R3.

9.3 UNMITIGATED OPERATIONAL NOISE LEVEL COMPLIANCE

To demonstrate compliance with local noise regulations, the Project-only operational noise levels are evaluated against exterior noise level threshold based on the City of Chino and City of Chino Hills exterior noise level standards. Table 9-3 shows the operational noise levels associated with Majestic Chino Heritage Project will not exceed the City of Chino and City of Chino Hills Municipal Code daytime and nighttime exterior noise level standards at nearby receiver locations in each jurisdiction, respectively.

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_{50} (30 mins)	L_{25} (15 mins)	L_8 (5 mins)	L_2 (1 min)	L_{max} (<1 min)	
Daytime	**Chino**	**Residential Standards**	**55**	**60**	**65**	**70**	**75**	**-**
Nighttime			**50**	**55**	**60**	**65**	**70**	**-**
Any Time	**Chino Hills**		**65**	**70**	**75**	**80**	**85**	**-**
R1	Chino Hills	Residential	22.5	25.3	29.6	33.3	37.6	No
R2	Chino Hills	Park	24.1	26.9	31.1	34.8	39.2	No
R3	Chino	Residential	20.5	23.3	27.6	31.2	35.6	No
R15	Open Space Receiver[4]		35.6	38.4	42.7	46.4	50.8	-
R16	Open Space Receiver[4]		35.5	38.3	42.6	46.2	50.6	-

[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)?
[4] Open space receiver locations are identified for informational purposes only. The Project's Biology report will analyze the significance of any potential noise impacts to sensitive wildlife species. Receiver locations R17 to R22 are located further from the on-site Project operational activities, and as such, would experience operational noise levels less than those identified at R15 and R16 for open space receiver locations.

10 CONSTRUCTION IMPACTS

This section analyzes potential impacts resulting from the short-term construction activities associated with the development of the Project. Exhibit 10-A shows the construction activity boundaries at the Project site, and Exhibit 10-B shows the Excess Dirt Fill Sites in relation to the nearby sensitive receiver locations.

10.1 CONSTRUCTION NOISE LEVELS

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

- Soil Import/Export Process
- 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 *Majestic Chino Heritage Air Quality Impact Analysis* prepared by Urban Crossroads, Inc. (28)

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	Scraper, Water Truck, & Dozer Activity[4]	0:30:00	30'	79.7	75.3
8	Concrete Mixer Truck Movements[5]	0:01:00	50'	71.2	71.2
9	Concrete Paver Activities[5]	0:01:00	30'	70.0	65.6
10	Concrete Mixer Pour & Paving Activities[5]	0:01:00	30'	70.3	65.9
11	Concrete Mixer Backup Alarms & Air Brakes[5]	0:00:20	50'	71.6	71.6
12	Concrete Mixer Pour Activities[5]	1:00:00	50'	67.7	67.7

[1] As measured by Urban Crossroads, Inc. on 10/14/15 at a business park construction site located at the northwest corner of Barranca Parkway and Alton Parkway in the City of Irvine.
[2] As measured by Urban Crossroads, Inc. on 10/20/15 at a construction site located in Rancho Mission Viejo.
[3] As measured by Urban Crossroads, Inc. on 10/20/15 at a residential construction site located in Rancho Mission Viejo.
[4] 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] 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

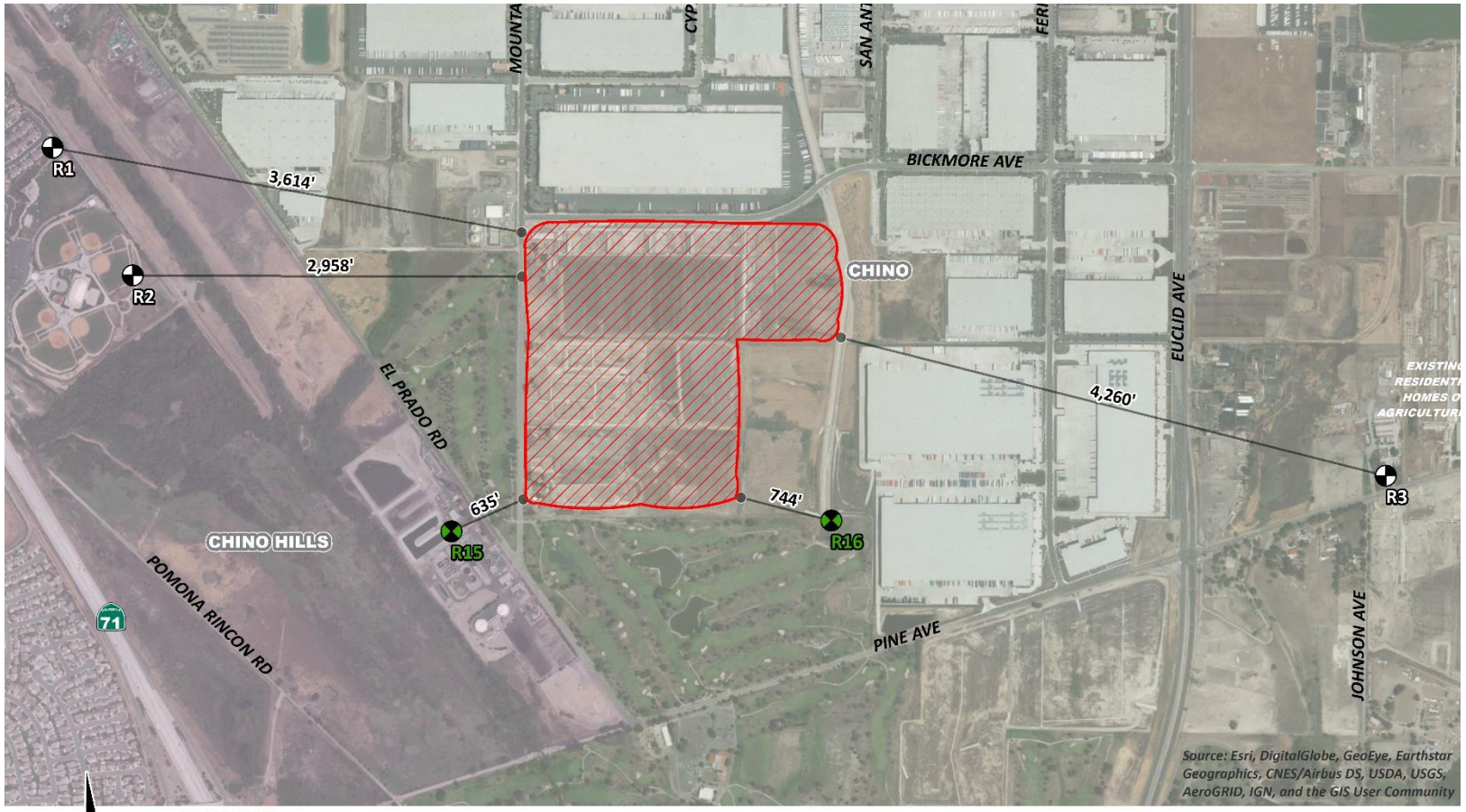
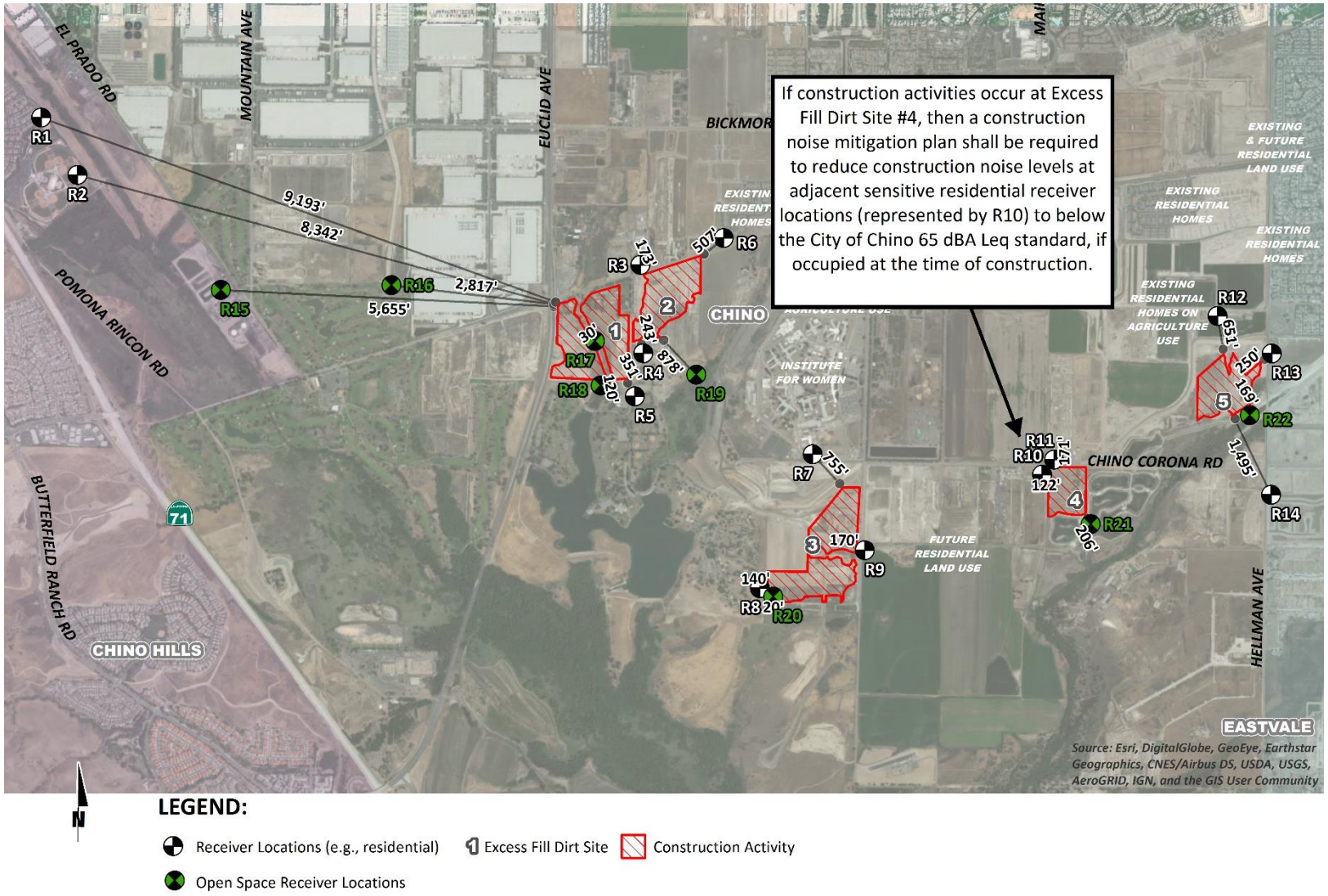


EXHIBIT 10-B: EXCESS DIRT FILL SITE CONSTRUCTION ACTIVITY AND RECEIVER LOCATIONS



10.3 CONSTRUCTION NOISE ANALYSIS

Tables 10-2 to 10-6 show the Project construction stages and the reference construction noise levels used for each stage. Table 10-7 provides a summary of the noise levels from each stage of construction at each of the sensitive receiver locations. Based on the reference construction noise levels, the Project-related construction noise levels when the highest reference noise level is operating at the edge of primary construction activity nearest each sensitive receiver location will range from 28.9 to 67.5 dBA L_{eq} at the noise-sensitive receiver locations, as shown on Table 10-7. Open space receiver locations, which are identified for information purposes only, are shown to experience construction noise levels ranging from 34.2 to 83.2 dBA L_{eq}. The Project's Biology report will analyze the significance of any potential noise impacts to sensitive wildlife species.

TABLE 10-2: SOIL IMPORT/EXPORT ACTIVITY NOISE LEVELS (DAYTIME & NIGHTTIME)

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
Scraper, Water Truck, & Dozer Activity	75.3
Highest Reference Noise Level at 50 Feet (dBA L_{eq}):	75.3

Receiver Location	Distance to Closest Fill Site Activity (Feet)[2]	Distance Attenuation (dBA L_{eq})[3]	Estimated Noise Barrier Attenuation (dBA L_{eq})[4]	Construction Noise Level (dBA L_{eq})
R1	9,193'	-45.3	0.0	30.0
R2	8,342'	-44.4	0.0	30.8
R3	173'	-10.8	0.0	64.5
R4	243'	-13.7	0.0	61.5
R5	351'	-16.9	0.0	58.3
R6	507'	-20.1	0.0	55.1
R7	755'	-23.6	0.0	51.7
R8	140'	-8.9	0.0	66.3
R9	170'	-10.6	0.0	64.6
R10	122'	-7.7	0.0	67.5
R11	171'	-10.7	0.0	64.6
R12	651'	-22.3	0.0	53.0
R13	250'	-14.0	0.0	61.3
R14	1,495'	-29.5	0.0	45.7
R15	5,655'	-41.1	0.0	34.2
R16	2,817'	-35.0	0.0	40.2
R17	30'	4.4	0.0	79.7
R18	120'	-7.6	0.0	67.7
R19	878'	-24.9	0.0	50.4
R20	20'	8.0	0.0	83.2
R21	206'	-12.3	0.0	63.0
R22	169'	-10.6	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: 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	3,614'	-37.2	0.0	36.3
R2	2,958'	-35.4	0.0	38.0
R3	4,260'	-38.6	0.0	34.9
R15	635'	-22.1	0.0	51.4
R16	744'	-23.5	0.0	50.0

[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: 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	3,614'	-37.2	0.0	31.0
R2	2,958'	-35.4	0.0	32.7
R3	4,260'	-38.6	0.0	29.6
R15	635'	-22.1	0.0	46.1
R16	744'	-23.5	0.0	44.7

[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 10-5: PAVING ACTIVITY NOISE LEVELS

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

Receiver Location	Distance to 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	3,614'	-37.2	0.0	34.4
R2	2,958'	-35.4	0.0	36.2
R3	4,260'	-38.6	0.0	33.0
R15	635'	-22.1	0.0	49.5
R16	744'	-23.5	0.0	48.1

[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: 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	3,614'	-37.2	0.0	30.3
R2	2,958'	-35.4	0.0	32.0
R3	4,260'	-38.6	0.0	28.9
R15	635'	-22.1	0.0	45.4
R16	744'	-23.5	0.0	44.0

[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 10-7: UNMITIGATED CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY

Receiver Location[1]	Construction Noise Levels by Stage (dBA L_{eq})					
	Soil Import/Export Process	Grading	Building Construction	Paving	Architectural Coating	Highest Construction Noise Level[2]
R1	30.0	36.3	31.0	34.4	30.3	36.3
R2	30.8	38.0	32.7	36.2	32.0	38.0
R3	64.5	34.9	29.6	33.0	28.9	64.5
R4	61.5	-[3]	-[3]	-[3]	-[3]	61.5
R5	58.3	-[3]	-[3]	-[3]	-[3]	58.3
R6	55.1	-[3]	-[3]	-[3]	-[3]	55.1
R7	51.7	-[3]	-[3]	-[3]	-[3]	51.7
R8	66.3	-[3]	-[3]	-[3]	-[3]	66.3
R9	64.6	-[3]	-[3]	-[3]	-[3]	64.6
R10	67.5	-[3]	-[3]	-[3]	-[3]	67.5
R11	64.6	-[3]	-[3]	-[3]	-[3]	64.6
R12	53.0	-[3]	-[3]	-[3]	-[3]	53.0
R13	61.3	-[3]	-[3]	-[3]	-[3]	61.3
R14	45.7	-[3]	-[3]	-[3]	-[3]	45.7
R15	34.2	51.4	46.1	49.5	45.4	51.4
R16	40.2	50.0	44.7	48.1	44.0	50.0
R17	79.7	-[4]	-[4]	-[4]	-[4]	79.7
R18	67.7	-[4]	-[4]	-[4]	-[4]	67.7
R19	50.4	-[4]	-[4]	-[4]	-[4]	50.4
R20	83.2	-[4]	-[4]	-[4]	-[4]	83.2
R21	63.0	-[4]	-[4]	-[4]	-[4]	63.0
R22	64.7	-[4]	-[4]	-[4]	-[4]	64.7

[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.

[3] Receiver locations R4 to R14 are located further from the on-site Project construction activities (non-soil import activities), and as such, would experience construction noise levels less than those identified at R3.

[4] Open space receiver locations are identified for informational purposes only. The Project's Biology report will analyze the significance of any potential noise impacts to sensitive wildlife species. Receiver locations R17 to R22 are located further from the on-site Project construction activities (non-soil import activities), and as such, would experience construction noise levels less than those identified at R15 and R16 for open space receiver locations.

10.4 CONSTRUCTION NOISE THRESHOLDS OF SIGNIFICANCE

To evaluate whether the Project will generate potentially significant short-term noise levels at off-site noise-sensitive receiver locations the City of Chino noise level threshold of 65 dBA L_{eq} is used.

10.4.1 PROJECT SITE CONSTRUCTION NOISE ANALYSIS

The Project-related short-term construction noise levels are expected to range approach 38.0 dBA L_{eq} and will not exceed the 65 dBA L_{eq} City of Chino construction noise level threshold at the nearby sensitive receiver locations. Therefore, based on the results of this analysis, all nearby sensitive receiver locations (R1 to R3) will experience *less than significant* impacts due to Project site construction noise levels, as shown on Table 10-8.

10.4.2 PROJECT NIGHTTIME CONCRETE POUR ACTIVITY ANALYSIS

It is our understanding that nighttime concrete pouring activities may occur as a part of Project construction activities. The paving stage construction noise levels, previously presented on Table 10-5, are based on nighttime concrete pouring activity reference noise level measurements, which are shown to result in Project construction noise levels ranging from 33.0 to 36.2 dBA L_{eq} at the nearby sensitive receiver locations. Therefore, nighttime concrete pouring activity would result in Project construction noise levels that will not exceed the City of Chino 65 dBA L_{eq} exterior noise level standard at nearby sensitive receiver locations.

10.4.3 SOIL IMPORT/EXPORT CONSTRUCTION NOISE ANALYSIS

The short-term construction noise levels associated with soil import/export activity, which could occur during daytime or nighttime hours, are expected to range from 30.0 to 67.5 dBA L_{eq} and will potentially exceed the 65 dBA L_{eq} City of Chino construction noise level threshold at one of the sensitive receiver locations, R10, near Excess Fill Dirt Site #4. Therefore, based on the results of this analysis, sensitive receiver location R10, if R10 represent built and occupied residential use, will experience *potentially significant* impacts due to construction noise levels generated by activities at Excess Fill Dirt Site #4. As such, a construction noise mitigation plan shall be required, as outlined in the Executive Summary, if Excess Fill Dirt Site #4 is used for soil import/export activities, and if R10 represents built and occupied residential use at the time of the soil import/export activities. All other receiver locations will experience *less than significant* noise impacts due to construction activities at the Excess Fill Dirt Sites.

10.4.4 CONSTRUCTION NOISE LEVELS AT OPEN SPACE RECEIVER LOCATIONS

As previously stated, open space receiver locations R15 to R22 are identified for information purposes only. The Project's Biology report will analyze the significance of any potential noise impacts to sensitive wildlife species.

On-site Project construction noise levels are anticipated to range from 44.0 to 51.4 dBA L_{eq} at open space receiver locations R15 to R16, which represent the closest open space receiver locations to the Project site. R17 to R22, located at greater distances, would experience lower

on-site Project construction noise levels. Similarly, on-site Project nighttime concrete pour noise levels would range from 48.1 to 49.5 dBA L_{eq} at receiver locations R15 to R16.

The short-term construction noise levels associated with soil import/export activity, which could occur during daytime or nighttime hours, are expected to range from 34.2 to 83.2 dBA L_{eq} at the off-site open space receiver locations.

TABLE 10-8: CONSTRUCTION EQUIPMENT NOISE LEVEL COMPLIANCE (DBA L_{EQ})

Receiver Location[1]	Land Use	Highest Unmitigated Construction Noise Levels (dBA L_{eq})[2]	Construction Activity	Threshold (dBA L_{eq})[3]	Threshold Exceeded?[4]
R1	Residential	36.3	Project Grading	65	No
R2	Park	38.0	Project Grading	n/a	No
R3	Residential	64.5	Dirt Import/Export	65	No
R4	Equestrian Center	61.5	Dirt Import/Export	65	No
R5	Park	58.3	Dirt Import/Export	n/a	No
R6	Residential	55.1	Dirt Import/Export	65	No
R7	Institutional	51.7	Dirt Import/Export	n/a	No
R8	Park	66.3	Dirt Import/Export	n/a	No
R9	Residential (Future)	64.6	Dirt Import/Export	65	No
R10	Residential	67.5	Dirt Import/Export	65	**Yes**
R11	Residential	64.6	Dirt Import/Export	65	No
R12	Residential	53.0	Dirt Import/Export	65	No
R13	Residential	61.3	Dirt Import/Export	65	No
R14	Residential	45.7	Dirt Import/Export	65	No
R15	Open Space Receiver[5]	51.4	Dirt Import/Export	-	-
R16	Open Space Receiver[5]	50.0	Dirt Import/Export	-	-
R17	Open Space Receiver[5]	79.7	Dirt Import/Export	-	-
R18	Open Space Receiver[5]	67.7	Dirt Import/Export	-	-
R19	Open Space Receiver[5]	50.4	Dirt Import/Export	-	-
R20	Open Space Receiver[5]	83.2	Dirt Import/Export	-	-
R21	Open Space Receiver[5]	63.0	Dirt Import/Export	-	-
R22	Open Space Receiver[5]	64.7	Dirt Import/Export	-	-

[1] Noise receiver locations are shown on Exhibits 10-A and 10-B

[2] Estimated highest construction noise levels, as shown on Table 10-7.

[3] Construction noise standard as shown on Table 4-2.

[4] Do the estimated Project construction noise levels satisfy the construction noise level threshold?

[5] Open space receiver locations are identified for informational purposes only. The Project's Biology report will analyze the significance of any potential noise impacts to sensitive wildlife species.

"n/a" = No construction noise level threshold is identified for the given use; however, construction noise levels are presented for informational purposes.

10.5 CONSTRUCTION VIBRATION IMPACTS

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

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

Ground-borne vibration levels resulting from construction activities occurring within the Project site were estimated by data published by the Federal Transit Administration (FTA). Construction activities that would have the potential to generate low levels of ground-borne vibration within the Project site include mobile equipment activities and pile driving, among others. Using the vibration source level of construction equipment provided on Table 6-9 and the construction vibration assessment methodology published by the FTA, it is possible to estimate the Project vibration impacts.

The construction vibration analysis is based on the shortest distance to either Project site construction or Excess Fill Dirt Site soil import/export activities. Based on the analysis, construction vibration velocity levels are expected to approach 0.012 in/sec PPV, and 0.009 in/sec RMS, as shown on Table 10-9. 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, the City of Chino Hills 0.2 in/sec PPV standard, and the City of Eastvale 0.0787 in/sec PPV 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 10-9: UNMITIGATED CONSTRUCTION EQUIPMENT VIBRATION LEVELS

Receiver Location[1]	City	Shortest Distance to Const. Activity (Feet)	Receiver PPV Levels (in/sec)[2]					RMS Velocity Levels (in/sec)[3]	Threshold (in/sec)		Threshold Exceeded?[4]
			Small Bulldozer	Jack-hammer	Loaded Trucks	Large Bulldozer	Peak Vibration		PPV	RMS	
R1	Chino Hills	3,614'	0.0000	0.0000	0.0000	0.0001	0.0001	-	0.20	-	No
R2	Chino Hills	2,958'	0.0000	0.0000	0.0001	0.0001	0.0001	-	0.20	-	No
R3	Chino	167'	0.0002	0.0020	0.0044	0.0052	0.0052	0.004	-	0.05	No
R4	Chino	155'	0.0002	0.0023	0.0049	0.0058	0.0058	0.004	-	0.05	No
R5	Chino	351'	0.0001	0.0007	0.0014	0.0017	0.0017	0.001	-	0.05	No
R6	Chino	507'	0.0000	0.0004	0.0008	0.0010	0.0010	0.001	-	0.05	No
R7	Chino	673'	0.0000	0.0003	0.0005	0.0006	0.0006	0.000	-	0.05	No
R8	Chino	95'	0.0004	0.0047	0.0103	0.0120	0.0120	0.009	-	0.05	No
R9	Chino	108'	0.0003	0.0039	0.0085	0.0099	0.0099	0.007	-	0.05	No
R10	Chino	122'	0.0003	0.0032	0.0070	0.0083	0.0083	0.006	-	0.05	No
R11	Chino	171'	0.0002	0.0020	0.0042	0.0050	0.0050	0.004	-	0.05	No
R12	Chino	772'	0.0000	0.0002	0.0004	0.0005	0.0005	0.000	-	0.05	No
R11	Eastvale	282'	0.0001	0.0009	0.0020	0.0023	0.0023	-	0.0787	-	No
R12	Eastvale	1,425'	0.0000	0.0001	0.0002	0.0002	0.0002	-	0.0787	-	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] Does the vibration exceed the maximum acceptable vibration threshold?

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11 REFERENCES

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19. **City of Chino Hills.** *Municipal Code, Title 16 - Development Code, Chapter 16 - Performance Standards.*
20. **City of Ontario.** *Municipal Code, Title 5, Chapter 29 - Noise.*
21. **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.
22. **County of San Bernardino.** *Chino Airport Master Plan, Appendix B Environmental Overview.* 2010.
23. **Federal Interagency Committee on Noise.** *Federal Agency Review of Selected Airport Noise Analysis Issues.* August 1992.

24. **American National Standards Institute (ANSI).** *Specification for Sound Level Meters ANSI S1.4-2014/IEC 61672-1:2013.*

25. **U.S. Department of Transportation, Federal Highway Administration.** *FHWA Highway Traffic Noise Prediction Model.* December 1978. FHWA-RD-77-108.

26. **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.

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

28. **Urban Crossroads, Inc.** *Majestic Chino Heritage Air Quality Impact Analysis.* May 2019.

12 CERTIFICATION

The contents of this noise study report represent an accurate depiction of the noise environment and impacts associated with the proposed Majestic Chino Heritage 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 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:10351 Study Area Photos

L1 East
33, 57' 24.830000", 117, 40' 39.870000"

L1 North
33, 57' 24.780000", 117, 40' 39.790000"

L1 South
33, 57' 24.830000", 117, 40' 39.870000"

L1 West
33, 57' 24.820000", 117, 40' 39.840000"

L2 East
33, 57' 12.770000", 117, 40' 1.120000"

L2 North
33, 57' 12.860000", 117, 40' 1.140000"

JN:10351 Study Area Photos

L2 South
33, 57' 12.770000", 117, 40' 1.090000"

L2 West
33, 57' 12.760000", 117, 40' 1.120000"

L3 East
33, 57' 17.730000", 117, 38' 42.430000"

L3 North
33, 57' 17.690000", 117, 38' 42.430000"

L3 South
33, 57' 17.700000", 117, 38' 42.430000"

L3 West
33, 57' 17.690000", 117, 38' 42.430000"

L4 East
33, 57' 2.870000", 117, 38' 45.450000"

L4 North
33, 57' 2.850000", 117, 38' 45.450000"

L4 South
33, 57' 2.850000", 117, 38' 45.420000"

L4 West
33, 57' 2.850000", 117, 38' 45.450000"

L5 East
33, 57' 23.610000", 117, 38' 28.530000"

L5 North
33, 57' 23.620000", 117, 38' 28.530000"

JN:10351 Study Area Photos

L5 South
33, 57' 23.550000", 117, 38' 28.530000"

L5 West
33, 57' 23.610000", 117, 38' 28.580000"

L6 East
33, 56' 27.620000", 117, 38' 28.420000"

L6 North
33, 56' 27.650000", 117, 38' 28.420000"

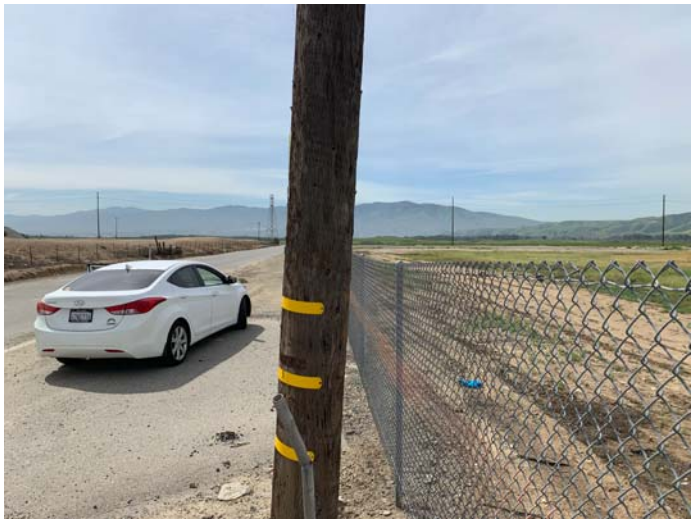
L6 South
33, 56' 27.660000", 117, 38' 28.420000"

L6 West
33, 56' 27.650000", 117, 38' 28.420000"

JN:10351 Study Area Photos

L7 East
33, 56' 39.770000", 117, 37' 59.610000"

L7 North
33, 56' 39.770000", 117, 37' 59.640000"



L7 South
33, 56' 39.790000", 117, 37' 59.610000"

L7 West
33, 56' 39.830000", 117, 37' 59.610000"

L8 East
33, 56' 45.970000", 117, 37' 22.610000"

L8 North
33, 56' 45.950000", 117, 37' 22.640000"

JN:10351 Study Area Photos

L8 South
33, 56' 45.950000", 117, 37' 22.610000"

L8 West
33, 56' 45.940000", 117, 37' 22.670000"

L9 East
33, 57' 5.590000", 117, 36' 53.990000"

L9 North
33, 57' 5.660000", 117, 36' 53.960000"

L9 South
33, 57' 5.630000", 117, 36' 53.990000"

L9 West
33, 57' 5.630000", 117, 36' 53.960000"

JN:10351 Study Area Photos

L10 East
33, 57' 7.690000", 117, 36' 39.220000"

L10 North
33, 57' 7.710000", 117, 36' 39.220000"

L10 South
33, 57' 7.730000", 117, 36' 39.190000"

L10 West
33, 57' 7.710000", 117, 36' 39.220000"

L11 East
33, 56' 45.940000", 117, 36' 31.250000"

L11 North
33, 56' 45.940000", 117, 36' 31.280000"

JN:10351 Study Area Photos

L11 South
33, 56' 45.910000", 117, 36' 31.280000"

L11 West
33, 56' 45.910000", 117, 36' 31.250000"

APPENDIX 5.2:

NOISE LEVEL MEASUREMENT WORKSHEETS

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24-Hour Noise Level Measurement Summary

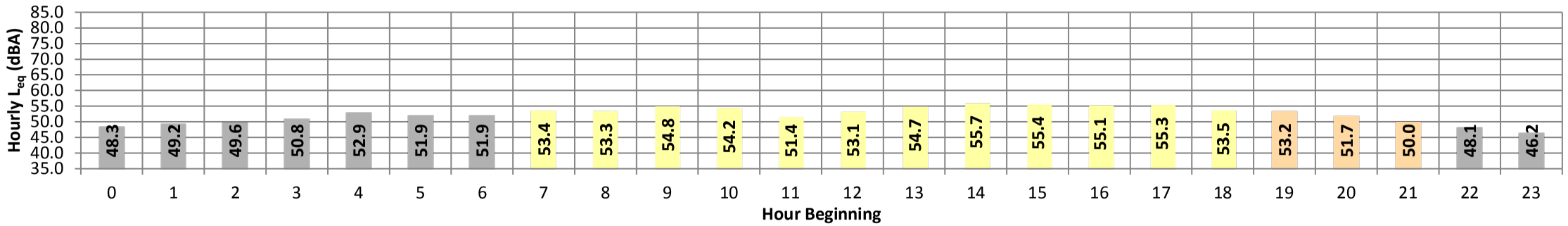
Date: Tuesday, April 02, 2019
Project: MCH

Location: L1 - Located near a Big League Dreams and Fairfield Ranch Park, west of the Project site.

Meter: Piccolo I

JN: 10351
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	48.3	63.6	42.5	53.0	52.0	51.0	50.0	48.0	47.0	45.0	44.0	43.0	48.3	10.0	58.3
	1	49.2	61.1	43.1	55.0	54.0	52.0	51.0	49.0	48.0	46.0	45.0	44.0	49.2	10.0	59.2
	2	49.6	59.6	42.5	55.0	54.0	52.0	52.0	50.0	48.0	46.0	45.0	44.0	49.6	10.0	59.6
	3	50.8	60.0	43.1	56.0	55.0	54.0	53.0	51.0	50.0	47.0	45.0	44.0	50.8	10.0	60.8
	4	52.9	65.9	47.5	58.0	57.0	55.0	54.0	53.0	52.0	50.0	49.0	48.0	52.9	10.0	62.9
	5	51.9	63.9	45.2	57.0	56.0	55.0	54.0	52.0	51.0	48.0	47.0	46.0	51.9	10.0	61.9
	6	51.9	61.2	47.9	56.0	55.0	54.0	53.0	52.0	51.0	49.0	49.0	48.0	51.9	10.0	61.9
Day	7	53.4	74.2	45.9	60.0	57.0	55.0	54.0	52.0	51.0	48.0	47.0	46.0	53.4	0.0	53.4
	8	53.3	65.8	44.0	62.0	61.0	60.0	58.0	51.0	48.0	46.0	46.0	45.0	53.3	0.0	53.3
	9	54.8	71.4	46.0	63.0	61.0	59.0	58.0	55.0	52.0	48.0	47.0	46.0	54.8	0.0	54.8
	10	54.2	70.6	44.8	65.0	63.0	58.0	56.0	52.0	50.0	47.0	47.0	46.0	54.2	0.0	54.2
	11	51.4	64.8	45.0	60.0	58.0	54.0	53.0	51.0	50.0	47.0	47.0	46.0	51.4	0.0	51.4
	12	53.1	64.1	46.8	58.0	57.0	55.0	55.0	53.0	52.0	50.0	49.0	48.0	53.1	0.0	53.1
	13	54.7	65.7	49.8	61.0	59.0	57.0	56.0	55.0	53.0	52.0	51.0	50.0	54.7	0.0	54.7
	14	55.7	76.1	49.2	62.0	59.0	57.0	57.0	55.0	54.0	52.0	52.0	51.0	55.7	0.0	55.7
	15	55.4	67.4	50.8	61.0	60.0	58.0	57.0	55.0	54.0	53.0	52.0	51.0	55.4	0.0	55.4
	16	55.1	68.7	50.5	62.0	60.0	57.0	56.0	55.0	54.0	52.0	52.0	51.0	55.1	0.0	55.1
	17	55.3	67.4	49.5	62.0	60.0	57.0	57.0	55.0	54.0	52.0	51.0	50.0	55.3	0.0	55.3
	18	53.5	65.5	47.9	59.0	58.0	56.0	55.0	53.0	52.0	50.0	50.0	49.0	53.5	0.0	53.5
Evening	19	53.2	63.3	48.5	58.0	57.0	55.0	55.0	53.0	52.0	50.0	50.0	49.0	53.2	5.0	58.2
	20	51.7	70.9	46.4	57.0	56.0	54.0	53.0	52.0	51.0	48.0	48.0	47.0	51.7	5.0	56.7
	21	50.0	60.7	44.3	54.0	53.0	52.0	52.0	50.0	49.0	47.0	46.0	45.0	50.0	5.0	55.0
Night	22	48.1	60.3	43.3	53.0	51.0	50.0	50.0	48.0	47.0	45.0	44.0	44.0	48.1	10.0	58.1
	23	46.2	58.6	41.3	50.0	49.0	48.0	48.0	46.0	45.0	43.0	43.0	42.0	46.2	10.0	56.2

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	51.4	64.1	44.0	58.0	57.0	54.0	53.0	51.0	48.0	46.0	46.0	45.0
	Max	55.7	76.1	50.8	65.0	63.0	60.0	58.0	55.0	54.0	53.0	52.0	51.0
Energy Average		54.3	Average:		61.3	59.4	56.9	56.0	53.5	52.0	49.8	49.3	48.3
Evening	Min	50.0	60.7	44.3	54.0	53.0	52.0	52.0	50.0	49.0	47.0	46.0	45.0
	Max	53.2	70.9	48.5	58.0	57.0	55.0	55.0	53.0	52.0	50.0	50.0	49.0
Energy Average		51.8	Average:		56.3	55.3	53.7	53.3	51.7	50.7	48.3	48.0	47.0
Night	Min	46.2	58.6	41.3	50.0	49.0	48.0	48.0	46.0	45.0	43.0	43.0	42.0
	Max	52.9	65.9	47.9	58.0	57.0	55.0	54.0	53.0	52.0	50.0	49.0	48.0
Energy Average		50.3	Average:		54.8	53.7	52.3	51.7	49.9	48.8	46.6	45.7	44.8

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
52.9	53.9	50.3

24-Hour CNEL (dBA)
57.8

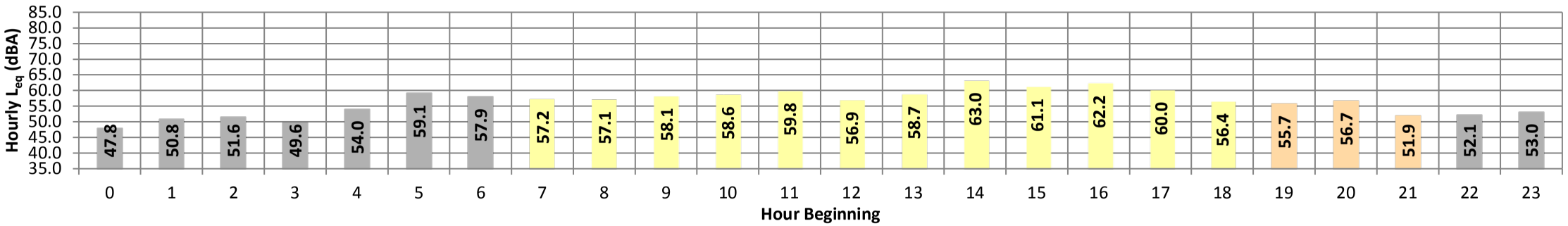
URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

Date: Tuesday, April 02, 2019 *Location:* L2 - Located on Mountain Avenue, north of El Prado Road south of the Project site boundary. *Meter:* Piccolo I *JN:* 10351

Project: MCH *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	47.8	70.2	39.0	56.0	54.0	51.0	49.0	46.0	44.0	42.0	41.0	40.0	47.8	10.0	57.8
	1	50.8	74.7	40.7	57.0	53.0	51.0	50.0	48.0	46.0	43.0	43.0	42.0	50.8	10.0	60.8
	2	51.6	79.0	42.0	59.0	56.0	51.0	50.0	48.0	46.0	44.0	44.0	43.0	51.6	10.0	61.6
	3	49.6	69.2	40.8	57.0	55.0	53.0	52.0	49.0	47.0	44.0	44.0	42.0	49.6	10.0	59.6
	4	54.0	78.0	45.9	62.0	59.0	57.0	56.0	52.0	50.0	47.0	47.0	46.0	54.0	10.0	64.0
	5	59.1	81.5	46.8	70.0	66.0	60.0	59.0	55.0	52.0	49.0	49.0	48.0	59.1	10.0	69.1
	6	57.9	78.7	47.7	69.0	65.0	61.0	59.0	56.0	53.0	49.0	49.0	48.0	57.9	10.0	67.9
Day	7	57.2	78.7	43.3	67.0	65.0	61.0	59.0	55.0	52.0	48.0	46.0	45.0	57.2	0.0	57.2
	8	57.1	80.6	42.0	69.0	65.0	59.0	57.0	53.0	49.0	44.0	44.0	43.0	57.1	0.0	57.1
	9	58.1	81.4	42.8	70.0	67.0	61.0	58.0	52.0	49.0	45.0	44.0	43.0	58.1	0.0	58.1
	10	58.6	81.0	43.6	71.0	66.0	63.0	60.0	54.0	51.0	47.0	46.0	45.0	58.6	0.0	58.6
	11	59.8	83.2	43.7	72.0	68.0	62.0	59.0	53.0	50.0	47.0	46.0	45.0	59.8	0.0	59.8
	12	56.9	77.6	46.1	66.0	64.0	61.0	60.0	56.0	53.0	49.0	48.0	47.0	56.9	0.0	56.9
	13	58.7	78.7	49.5	67.0	66.0	63.0	62.0	58.0	55.0	52.0	51.0	50.0	58.7	0.0	58.7
	14	63.0	86.9	50.6	71.0	69.0	67.0	65.0	61.0	58.0	54.0	54.0	52.0	63.0	0.0	63.0
	15	61.1	81.5	50.1	70.0	68.0	65.0	64.0	60.0	57.0	53.0	52.0	51.0	61.1	0.0	61.1
	16	62.2	84.2	50.7	71.0	69.0	66.0	64.0	60.0	58.0	54.0	53.0	52.0	62.2	0.0	62.2
	17	60.0	79.5	48.5	68.0	66.0	64.0	63.0	60.0	57.0	53.0	52.0	51.0	60.0	0.0	60.0
	18	56.4	77.2	48.0	64.0	61.0	58.0	57.0	55.0	53.0	50.0	49.0	48.0	56.4	0.0	56.4
Evening	19	55.7	77.3	48.2	62.0	60.0	58.0	57.0	54.0	52.0	50.0	50.0	49.0	55.7	5.0	60.7
	20	56.7	77.9	44.7	70.0	63.0	57.0	56.0	52.0	50.0	47.0	47.0	46.0	56.7	5.0	61.7
	21	51.9	69.5	44.9	62.0	57.0	55.0	54.0	50.0	49.0	47.0	47.0	46.0	51.9	5.0	56.9
Night	22	52.1	77.3	44.3	59.0	55.0	53.0	52.0	49.0	48.0	46.0	45.0	45.0	52.1	10.0	62.1
	23	53.0	81.4	39.0	56.0	54.0	52.0	50.0	46.0	45.0	42.0	42.0	40.0	53.0	10.0	63.0

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	56.4	77.2	42.0	64.0	61.0	58.0	57.0	52.0	49.0	44.0	44.0	43.0
	Max	63.0	86.9	50.7	72.0	69.0	67.0	65.0	61.0	58.0	54.0	54.0	52.0
Energy Average		59.6	Average:		68.8	66.2	62.5	60.7	56.4	53.5	49.7	48.8	47.7
Evening	Min	51.9	69.5	44.7	62.0	57.0	55.0	54.0	50.0	49.0	47.0	47.0	46.0
	Max	56.7	77.9	48.2	70.0	63.0	58.0	57.0	54.0	52.0	50.0	50.0	49.0
Energy Average		55.2	Average:		64.7	60.0	56.7	55.7	52.0	50.3	48.0	48.0	47.0
Night	Min	47.8	69.2	39.0	56.0	53.0	51.0	49.0	46.0	44.0	42.0	41.0	40.0
	Max	59.1	81.5	47.7	70.0	66.0	61.0	59.0	56.0	53.0	49.0	49.0	48.0
Energy Average		54.4	Average:		60.6	57.4	54.3	53.0	49.9	47.9	45.1	44.9	43.8

L_{eq} (dBA)		
24-Hour	*Daytime*	*Nighttime*
57.8	**59.0**	**54.4**

24-Hour CNEL (dBA)
62.1

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

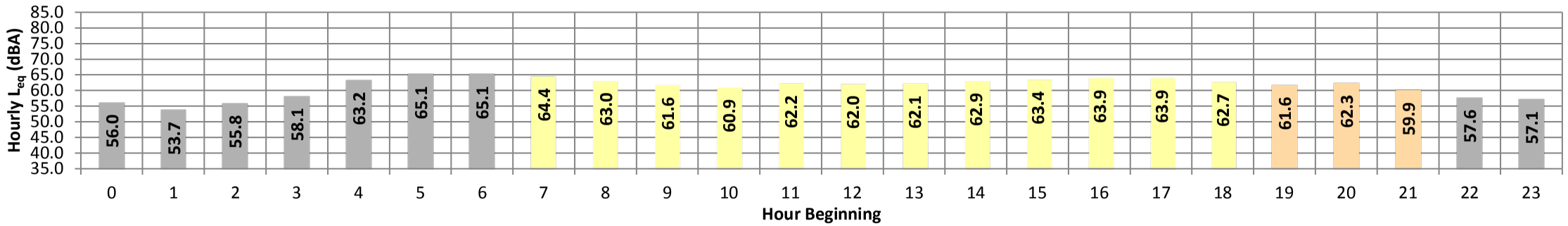
Date: Tuesday, April 02, 2019
Project: MCH

Location: L3 - Located on Pine Avenue, near Lizze Custom Processing, southeast of the Project site.

Meter: Piccolo I

JN: 10351
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	56.0	78.5	42.5	67.0	64.0	60.0	59.0	53.0	47.0	45.0	44.0	43.0	56.0	10.0	66.0
	1	53.7	76.3	43.2	63.0	60.0	58.0	57.0	51.0	48.0	46.0	45.0	44.0	53.7	10.0	63.7
	2	55.8	79.2	44.4	66.0	63.0	60.0	59.0	52.0	48.0	46.0	46.0	45.0	55.8	10.0	65.8
	3	58.1	75.9	42.5	69.0	66.0	64.0	62.0	57.0	50.0	45.0	44.0	43.0	58.1	10.0	68.1
	4	63.2	81.7	46.2	73.0	71.0	68.0	66.0	63.0	60.0	50.0	48.0	47.0	63.2	10.0	73.2
	5	65.1	91.1	46.7	73.0	71.0	68.0	67.0	63.0	61.0	56.0	53.0	49.0	65.1	10.0	75.1
	6	65.1	84.2	51.1	74.0	72.0	70.0	68.0	64.0	62.0	58.0	56.0	53.0	65.1	10.0	75.1
Day	7	64.4	86.4	46.5	73.0	72.0	69.0	67.0	63.0	61.0	56.0	55.0	51.0	64.4	0.0	64.4
	8	63.0	85.8	43.1	72.0	71.0	68.0	66.0	61.0	58.0	51.0	49.0	45.0	63.0	0.0	63.0
	9	61.6	81.1	42.0	71.0	69.0	67.0	65.0	60.0	57.0	49.0	47.0	44.0	61.6	0.0	61.6
	10	60.9	80.1	42.5	70.0	69.0	66.0	65.0	60.0	57.0	50.0	47.0	45.0	60.9	0.0	60.9
	11	62.2	80.0	41.8	72.0	71.0	68.0	66.0	61.0	57.0	49.0	48.0	45.0	62.2	0.0	62.2
	12	62.0	82.9	47.6	71.0	69.0	66.0	65.0	61.0	57.0	51.0	50.0	48.0	62.0	0.0	62.0
	13	62.1	78.8	47.1	72.0	70.0	67.0	66.0	61.0	58.0	52.0	50.0	48.0	62.1	0.0	62.1
	14	62.9	79.1	47.9	72.0	70.0	68.0	66.0	62.0	59.0	54.0	53.0	49.0	62.9	0.0	62.9
	15	63.4	80.7	52.6	71.0	70.0	67.0	66.0	63.0	61.0	58.0	57.0	54.0	63.4	0.0	63.4
	16	63.9	92.1	51.2	71.0	69.0	66.0	65.0	62.0	59.0	55.0	54.0	53.0	63.9	0.0	63.9
	17	63.9	83.9	49.3	74.0	70.0	67.0	66.0	62.0	60.0	55.0	54.0	52.0	63.9	0.0	63.9
	18	62.7	81.2	48.0	73.0	70.0	67.0	65.0	62.0	59.0	55.0	53.0	51.0	62.7	0.0	62.7
Evening	19	61.6	80.8	46.6	70.0	68.0	65.0	64.0	61.0	59.0	54.0	51.0	48.0	61.6	5.0	66.6
	20	62.3	82.9	44.5	72.0	70.0	66.0	64.0	61.0	58.0	51.0	49.0	46.0	62.3	5.0	67.3
	21	59.9	79.0	44.3	70.0	67.0	64.0	62.0	59.0	57.0	48.0	47.0	45.0	59.9	5.0	64.9
Night	22	57.6	73.1	43.2	68.0	66.0	62.0	61.0	57.0	53.0	45.0	44.0	43.0	57.6	10.0	67.6
	23	57.1	78.0	41.5	68.0	65.0	61.0	60.0	56.0	50.0	44.0	44.0	43.0	57.1	10.0	67.1

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	60.9	78.8	41.8	70.0	69.0	66.0	65.0	60.0	57.0	49.0	47.0	44.0
	Max	64.4	92.1	52.6	74.0	72.0	69.0	67.0	63.0	61.0	58.0	57.0	54.0
Energy Average		62.9	Average:		71.8	70.0	67.2	65.7	61.5	58.6	52.9	51.4	48.8
Evening	Min	59.9	79.0	44.3	70.0	67.0	64.0	62.0	59.0	57.0	48.0	47.0	45.0
	Max	62.3	82.9	46.6	72.0	70.0	66.0	64.0	61.0	59.0	54.0	51.0	48.0
Energy Average		61.4	Average:		70.7	68.3	65.0	63.3	60.3	58.0	51.0	49.0	46.3
Night	Min	53.7	73.1	41.5	63.0	60.0	58.0	57.0	51.0	47.0	44.0	44.0	43.0
	Max	65.1	91.1	51.1	74.0	72.0	70.0	68.0	64.0	62.0	58.0	56.0	53.0
Energy Average		61.0	Average:		69.0	66.4	63.4	62.1	57.3	53.2	48.3	47.1	45.6

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
62.1	62.6	61.0

24-Hour CNEL (dBA)
67.9

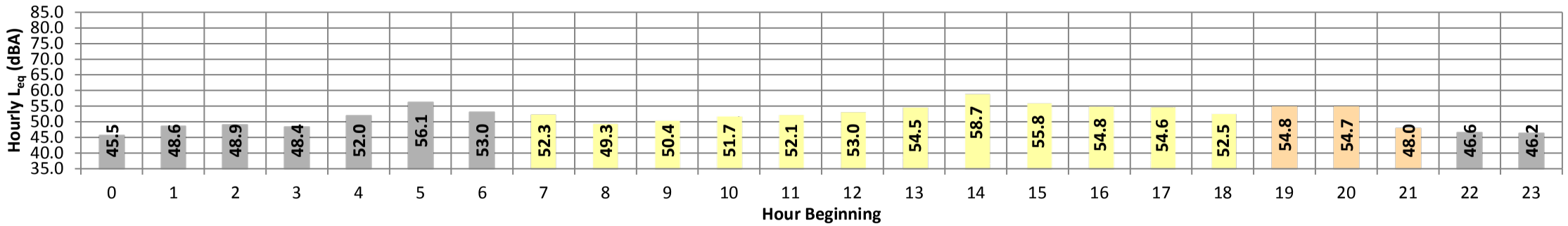
URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

Date: Tuesday, April 02, 2019 *Location:* L4 - Located on Johnson Avenue, near Prado Park Equestrian Center, southeast of the Project site. *Meter:* Piccolo I *JN:* 10351

Project: MCH *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	45.5	57.9	41.0	51.0	50.0	48.0	47.0	46.0	44.0	42.0	42.0	41.0	45.5	10.0	55.5
	1	48.6	65.6	42.9	53.0	52.0	51.0	50.0	49.0	48.0	45.0	44.0	44.0	48.6	10.0	58.6
	2	48.9	61.6	44.2	55.0	53.0	51.0	50.0	49.0	48.0	46.0	45.0	45.0	48.9	10.0	58.9
	3	48.4	60.1	41.4	55.0	53.0	51.0	51.0	49.0	47.0	44.0	43.0	42.0	48.4	10.0	58.4
	4	52.0	79.5	44.1	54.0	52.0	50.0	50.0	48.0	47.0	45.0	45.0	44.0	52.0	10.0	62.0
	5	56.1	85.6	43.6	59.0	58.0	55.0	53.0	51.0	49.0	46.0	46.0	45.0	56.1	10.0	66.1
	6	53.0	67.4	47.7	61.0	60.0	56.0	55.0	52.0	51.0	49.0	49.0	48.0	53.0	10.0	63.0
Day	7	52.3	69.7	44.2	61.0	59.0	56.0	54.0	51.0	50.0	48.0	47.0	45.0	52.3	0.0	52.3
	8	49.3	67.0	41.7	60.0	56.0	52.0	51.0	48.0	45.0	43.0	43.0	42.0	49.3	0.0	49.3
	9	50.4	68.0	41.5	62.0	59.0	55.0	52.0	48.0	46.0	43.0	42.0	42.0	50.4	0.0	50.4
	10	51.7	74.7	41.3	61.0	59.0	55.0	54.0	50.0	47.0	44.0	43.0	42.0	51.7	0.0	51.7
	11	52.1	71.4	40.6	64.0	60.0	56.0	54.0	49.0	47.0	44.0	43.0	42.0	52.1	0.0	52.1
	12	53.0	71.3	43.0	62.0	58.0	56.0	55.0	52.0	50.0	46.0	45.0	44.0	53.0	0.0	53.0
	13	54.5	73.1	44.9	62.0	60.0	58.0	57.0	54.0	51.0	48.0	47.0	46.0	54.5	0.0	54.5
	14	58.7	86.5	46.7	67.0	62.0	58.0	56.0	54.0	52.0	49.0	49.0	48.0	58.7	0.0	58.7
	15	55.8	71.8	48.0	63.0	61.0	59.0	58.0	56.0	53.0	50.0	50.0	49.0	55.8	0.0	55.8
	16	54.8	75.2	45.2	62.0	60.0	58.0	57.0	54.0	52.0	49.0	48.0	47.0	54.8	0.0	54.8
	17	54.6	70.9	46.9	64.0	62.0	58.0	57.0	53.0	51.0	49.0	48.0	48.0	54.6	0.0	54.6
	18	52.5	71.9	45.8	63.0	59.0	55.0	54.0	51.0	49.0	47.0	47.0	46.0	52.5	0.0	52.5
Evening	19	54.8	84.0	45.5	58.0	57.0	54.0	53.0	51.0	49.0	48.0	47.0	46.0	54.8	5.0	59.8
	20	54.7	78.6	44.8	62.0	61.0	57.0	54.0	50.0	49.0	47.0	46.0	45.0	54.7	5.0	59.7
	21	48.0	58.4	44.0	54.0	53.0	51.0	50.0	48.0	47.0	45.0	45.0	44.0	48.0	5.0	53.0
Night	22	46.6	60.0	42.3	51.0	50.0	49.0	48.0	47.0	45.0	44.0	43.0	43.0	46.6	10.0	56.6
	23	46.2	59.2	41.4	52.0	50.0	49.0	48.0	46.0	45.0	43.0	43.0	42.0	46.2	10.0	56.2

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	49.3	67.0	40.6	60.0	56.0	52.0	51.0	48.0	45.0	43.0	42.0	42.0
	Max	58.7	86.5	48.0	67.0	62.0	59.0	58.0	56.0	53.0	50.0	50.0	49.0
Energy Average		54.0	Average:		62.6	59.6	56.3	54.9	51.7	49.4	46.7	46.0	45.1
Evening	Min	48.0	58.4	44.0	54.0	53.0	51.0	50.0	48.0	47.0	45.0	45.0	44.0
	Max	54.8	84.0	45.5	62.0	61.0	57.0	54.0	51.0	49.0	48.0	47.0	46.0
Energy Average		53.4	Average:		58.0	57.0	54.0	52.3	49.7	48.3	46.7	46.0	45.0
Night	Min	45.5	57.9	41.0	51.0	50.0	48.0	47.0	46.0	44.0	42.0	42.0	41.0
	Max	56.1	85.6	47.7	61.0	60.0	56.0	55.0	52.0	51.0	49.0	49.0	48.0
Energy Average		50.9	Average:		54.6	53.1	51.1	50.2	48.6	47.1	44.9	44.4	43.8

L_{eq} (dBA)		
24-Hour	*Daytime*	*Nighttime*
53.0	**53.9**	**50.9**

24-Hour CNEL (dBA)
58.3

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

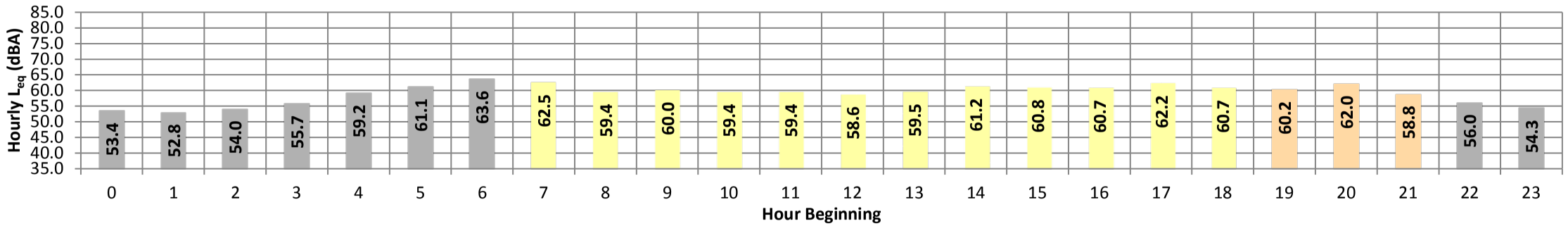
Date: Tuesday, April 02, 2019
Project: MCH

Location: L5 - Located on Meadowhouse Avenue, near Meadow Square Apartment Homes, east of the Project site.

Meter: Piccolo I

JN: 10351
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	53.4	70.4	42.9	62.0	61.0	59.0	57.0	52.0	49.0	45.0	44.0	43.0	53.4	10.0	63.4
	1	52.8	70.3	44.5	62.0	60.0	58.0	56.0	51.0	49.0	47.0	46.0	45.0	52.8	10.0	62.8
	2	54.0	74.0	45.5	65.0	61.0	58.0	56.0	52.0	49.0	47.0	47.0	46.0	54.0	10.0	64.0
	3	55.7	75.6	43.5	67.0	64.0	60.0	58.0	54.0	50.0	46.0	45.0	44.0	55.7	10.0	65.7
	4	59.2	74.6	45.9	69.0	68.0	65.0	62.0	58.0	55.0	51.0	50.0	49.0	59.2	10.0	69.2
	5	61.1	84.4	46.3	71.0	69.0	65.0	63.0	59.0	56.0	53.0	51.0	48.0	61.1	10.0	71.1
	6	63.6	81.1	51.4	73.0	71.0	69.0	68.0	62.0	59.0	55.0	54.0	52.0	63.6	10.0	73.6
Day	7	62.5	78.6	48.3	72.0	71.0	68.0	66.0	61.0	58.0	53.0	52.0	50.0	62.5	0.0	62.5
	8	59.4	77.5	42.6	69.0	67.0	65.0	64.0	58.0	55.0	49.0	48.0	45.0	59.4	0.0	59.4
	9	60.0	80.0	44.3	70.0	68.0	65.0	64.0	58.0	55.0	50.0	48.0	46.0	60.0	0.0	60.0
	10	59.4	76.1	44.4	69.0	67.0	65.0	63.0	59.0	55.0	50.0	49.0	46.0	59.4	0.0	59.4
	11	59.4	76.1	44.1	69.0	67.0	65.0	63.0	59.0	55.0	49.0	48.0	46.0	59.4	0.0	59.4
	12	58.6	72.0	45.9	68.0	66.0	63.0	62.0	58.0	55.0	51.0	50.0	47.0	58.6	0.0	58.6
	13	59.5	76.2	48.7	67.0	66.0	64.0	63.0	59.0	57.0	52.0	51.0	50.0	59.5	0.0	59.5
	14	61.2	79.0	49.0	70.0	68.0	65.0	64.0	60.0	58.0	54.0	53.0	51.0	61.2	0.0	61.2
	15	60.8	76.4	49.1	69.0	67.0	65.0	64.0	60.0	58.0	55.0	54.0	53.0	60.8	0.0	60.8
	16	60.7	79.4	49.4	69.0	67.0	65.0	63.0	60.0	58.0	55.0	54.0	52.0	60.7	0.0	60.7
	17	62.2	80.5	50.2	71.0	70.0	67.0	65.0	61.0	59.0	55.0	54.0	52.0	62.2	0.0	62.2
	18	60.7	78.0	47.6	70.0	68.0	66.0	64.0	59.0	57.0	53.0	52.0	49.0	60.7	0.0	60.7
Evening	19	60.2	74.3	48.3	69.0	67.0	65.0	63.0	59.0	57.0	53.0	52.0	50.0	60.2	5.0	65.2
	20	62.0	78.7	46.2	74.0	71.0	66.0	64.0	59.0	57.0	51.0	50.0	47.0	62.0	5.0	67.0
	21	58.8	74.8	45.5	69.0	67.0	64.0	62.0	58.0	55.0	49.0	48.0	46.0	58.8	5.0	63.8
Night	22	56.0	76.9	44.6	66.0	63.0	60.0	59.0	56.0	52.0	46.0	46.0	45.0	56.0	10.0	66.0
	23	54.3	74.6	42.7	65.0	63.0	59.0	57.0	53.0	48.0	44.0	44.0	43.0	54.3	10.0	64.3

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	58.6	72.0	42.6	67.0	66.0	63.0	62.0	58.0	55.0	49.0	48.0	45.0
	Max	62.5	80.5	50.2	72.0	71.0	68.0	66.0	61.0	59.0	55.0	54.0	53.0
Energy Average		60.5	Average:		69.4	67.7	65.3	63.8	59.3	56.7	52.2	51.1	48.9
Evening	Min	58.8	74.3	45.5	69.0	67.0	64.0	62.0	58.0	55.0	49.0	48.0	46.0
	Max	62.0	78.7	48.3	74.0	71.0	66.0	64.0	59.0	57.0	53.0	52.0	50.0
Energy Average		60.5	Average:		70.7	68.3	65.0	63.0	58.7	56.3	51.0	50.0	47.7
Night	Min	52.8	70.3	42.7	62.0	60.0	58.0	56.0	51.0	48.0	44.0	44.0	43.0
	Max	63.6	84.4	51.4	73.0	71.0	69.0	68.0	62.0	59.0	55.0	54.0	52.0
Energy Average		58.3	Average:		66.7	64.4	61.4	59.6	55.2	51.9	48.2	47.4	46.1

L_{eq} (dBA)		
24-Hour	*Daytime*	*Nighttime*
59.8	60.5	58.3

24-Hour CNEL (dBA)
65.5

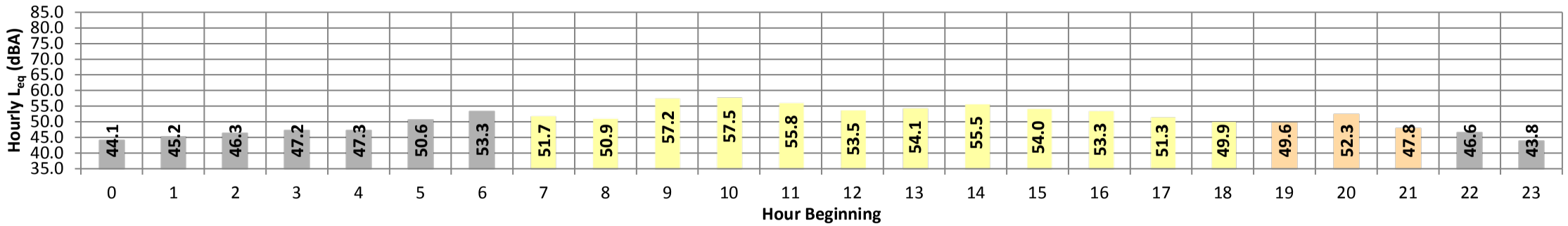
URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

Date: Tuesday, April 02, 2019 *Location:* L6 - Located in Prado Regional Park near campground areas. *Meter:* Piccolo I *JN:* 10351

Project: MCH *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	44.1	54.4	39.7	49.0	48.0	47.0	46.0	44.0	43.0	41.0	41.0	41.0	44.1	10.0	54.1
	1	45.2	55.6	41.1	51.0	49.0	48.0	47.0	45.0	44.0	42.0	42.0	41.0	45.2	10.0	55.2
	2	46.3	57.2	41.8	51.0	50.0	49.0	48.0	46.0	45.0	43.0	42.0	42.0	46.3	10.0	56.3
	3	47.2	56.6	41.2	52.0	51.0	50.0	49.0	48.0	46.0	43.0	42.0	42.0	47.2	10.0	57.2
	4	47.3	57.2	44.1	53.0	51.0	49.0	49.0	47.0	46.0	45.0	45.0	44.0	47.3	10.0	57.3
	5	50.6	67.1	45.4	56.0	54.0	53.0	52.0	51.0	50.0	46.0	46.0	46.0	50.6	10.0	60.6
	6	53.3	71.1	45.9	62.0	60.0	58.0	55.0	52.0	51.0	48.0	47.0	46.0	53.3	10.0	63.3
Day	7	51.7	73.9	39.4	63.0	57.0	51.0	50.0	47.0	44.0	40.0	39.0	39.0	51.7	0.0	51.7
	8	50.9	74.5	40.0	63.0	61.0	55.0	51.0	45.0	42.0	41.0	41.0	41.0	50.9	0.0	50.9
	9	57.2	81.9	44.1	67.0	62.0	58.0	57.0	52.0	49.0	46.0	45.0	45.0	57.2	0.0	57.2
	10	57.5	79.8	42.4	69.0	66.0	59.0	56.0	51.0	48.0	45.0	44.0	43.0	57.5	0.0	57.5
	11	55.8	81.3	41.8	66.0	63.0	58.0	56.0	51.0	48.0	44.0	44.0	43.0	55.8	0.0	55.8
	12	53.5	73.9	45.1	62.0	60.0	57.0	56.0	52.0	50.0	47.0	47.0	46.0	53.5	0.0	53.5
	13	54.1	69.3	45.8	61.0	60.0	58.0	57.0	54.0	52.0	48.0	47.0	47.0	54.1	0.0	54.1
	14	55.5	77.3	46.0	66.0	60.0	57.0	56.0	52.0	50.0	48.0	47.0	46.0	55.5	0.0	55.5
	15	54.0	68.7	46.0	63.0	61.0	59.0	57.0	53.0	51.0	48.0	48.0	47.0	54.0	0.0	54.0
	16	53.3	72.5	46.7	63.0	60.0	57.0	55.0	52.0	50.0	48.0	47.0	47.0	53.3	0.0	53.3
	17	51.3	68.5	45.2	61.0	59.0	55.0	53.0	50.0	48.0	46.0	46.0	46.0	51.3	0.0	51.3
	18	49.9	70.1	45.3	59.0	56.0	52.0	51.0	48.0	47.0	46.0	46.0	45.0	49.9	0.0	49.9
Evening	19	49.6	67.4	44.9	57.0	55.0	52.0	51.0	48.0	47.0	46.0	46.0	45.0	49.6	5.0	54.6
	20	52.3	73.3	43.1	63.0	60.0	55.0	52.0	49.0	48.0	46.0	45.0	44.0	52.3	5.0	57.3
	21	47.8	65.0	43.3	53.0	51.0	50.0	49.0	47.0	47.0	45.0	45.0	45.0	47.8	5.0	52.8
Night	22	46.6	59.0	42.4	51.0	50.0	49.0	48.0	47.0	45.0	44.0	43.0	43.0	46.6	10.0	56.6
	23	43.8	50.5	39.4	47.0	46.0	46.0	45.0	44.0	43.0	41.0	41.0	39.0	43.8	10.0	53.8

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	49.9	68.5	39.4	59.0	56.0	51.0	50.0	45.0	42.0	40.0	39.0	39.0
	Max	57.5	81.9	46.7	69.0	66.0	59.0	57.0	54.0	52.0	48.0	48.0	47.0
Energy Average		54.4	Average:		63.6	60.4	56.3	54.6	50.6	48.3	45.6	45.1	44.6
Evening	Min	47.8	65.0	43.1	53.0	51.0	50.0	49.0	47.0	47.0	45.0	45.0	44.0
	Max	52.3	73.3	44.9	63.0	60.0	55.0	52.0	49.0	48.0	46.0	46.0	45.0
Energy Average		50.3	Average:		57.7	55.3	52.3	50.7	48.0	47.3	45.7	45.3	44.7
Night	Min	43.8	50.5	39.4	47.0	46.0	46.0	45.0	44.0	43.0	41.0	41.0	39.0
	Max	53.3	71.1	45.9	62.0	60.0	58.0	55.0	52.0	51.0	48.0	47.0	46.0
Energy Average		48.3	Average:		52.4	51.0	49.9	48.8	47.1	45.9	43.7	43.2	42.7

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
52.4	53.8	48.3

24-Hour CNEL (dBA)
56.3

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

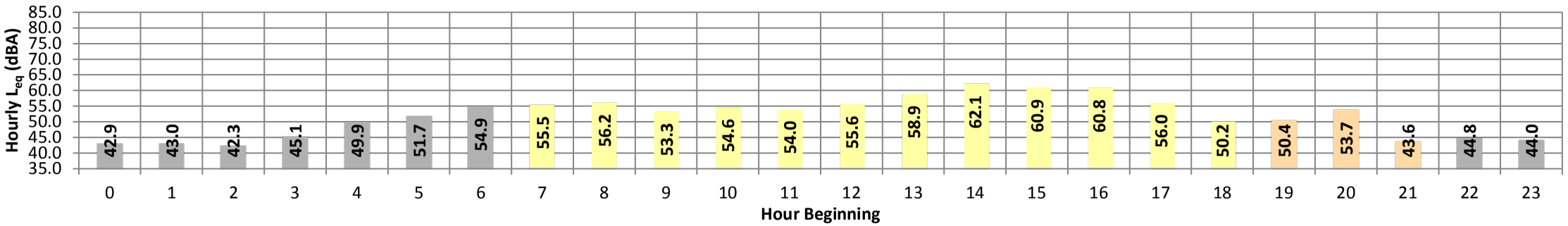
Date: Tuesday, April 02, 2019
Project: MCH

Location: L7 - Located on Cucamonga Road, near Vermontes Mulch, southeast of the Project site.

Meter: Piccolo I

JN: 10351
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	42.9	54.2	39.0	49.0	48.0	46.0	45.0	43.0	41.0	39.0	39.0	39.0	42.9	10.0	52.9
	1	43.0	56.5	40.2	49.0	47.0	45.0	44.0	43.0	42.0	40.0	40.0	40.0	43.0	10.0	53.0
	2	42.3	53.9	39.1	48.0	47.0	44.0	43.0	42.0	42.0	40.0	40.0	39.0	42.3	10.0	52.3
	3	45.1	58.8	39.1	53.0	52.0	49.0	48.0	45.0	42.0	40.0	39.0	39.0	45.1	10.0	55.1
	4	49.9	74.9	43.0	59.0	55.0	51.0	49.0	46.0	45.0	44.0	43.0	43.0	49.9	10.0	59.9
	5	51.7	75.6	43.0	58.0	54.0	51.0	50.0	48.0	47.0	45.0	44.0	44.0	51.7	10.0	61.7
	6	54.9	81.0	43.1	64.0	59.0	55.0	54.0	50.0	48.0	45.0	44.0	44.0	54.9	10.0	64.9
Day	7	55.5	79.0	45.4	66.0	60.0	57.0	56.0	53.0	49.0	46.0	46.0	45.0	55.5	0.0	55.5
	8	56.2	83.5	39.1	66.0	63.0	54.0	52.0	47.0	45.0	41.0	40.0	39.0	56.2	0.0	56.2
	9	53.3	77.7	39.0	65.0	61.0	56.0	53.0	47.0	44.0	41.0	40.0	39.0	53.3	0.0	53.3
	10	54.6	77.6	39.1	66.0	61.0	56.0	55.0	50.0	46.0	42.0	41.0	40.0	54.6	0.0	54.6
	11	54.0	76.2	39.1	67.0	63.0	56.0	54.0	49.0	45.0	41.0	40.0	39.0	54.0	0.0	54.0
	12	55.6	74.1	40.8	66.0	63.0	61.0	60.0	54.0	49.0	43.0	42.0	41.0	55.6	0.0	55.6
	13	58.9	72.7	43.1	69.0	67.0	65.0	63.0	58.0	53.0	47.0	45.0	43.0	58.9	0.0	58.9
	14	62.1	79.2	42.6	71.0	69.0	67.0	66.0	62.0	58.0	50.0	48.0	45.0	62.1	0.0	62.1
	15	60.9	75.5	43.8	70.0	68.0	66.0	65.0	61.0	57.0	50.0	48.0	46.0	60.9	0.0	60.9
	16	60.8	75.8	42.7	70.0	68.0	66.0	65.0	61.0	57.0	49.0	47.0	44.0	60.8	0.0	60.8
	17	56.0	71.1	42.6	65.0	63.0	61.0	60.0	56.0	52.0	45.0	44.0	43.0	56.0	0.0	56.0
	18	50.2	69.7	42.0	60.0	57.0	54.0	53.0	48.0	46.0	43.0	43.0	43.0	50.2	0.0	50.2
Evening	19	50.4	72.1	42.1	60.0	58.0	55.0	53.0	49.0	46.0	44.0	43.0	43.0	50.4	5.0	55.4
	20	53.7	78.2	41.7	62.0	60.0	56.0	53.0	48.0	46.0	43.0	42.0	42.0	53.7	5.0	58.7
	21	43.6	51.2	41.3	47.0	46.0	45.0	44.0	43.0	43.0	42.0	42.0	42.0	43.6	5.0	48.6
Night	22	44.8	63.9	40.8	51.0	50.0	47.0	46.0	44.0	43.0	42.0	42.0	41.0	44.8	10.0	54.8
	23	44.0	60.7	39.1	49.0	48.0	47.0	46.0	44.0	43.0	40.0	40.0	39.0	44.0	10.0	54.0

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	50.2	69.7	39.0	60.0	57.0	54.0	52.0	47.0	44.0	41.0	40.0	39.0
	Max	62.1	83.5	45.4	71.0	69.0	67.0	66.0	62.0	58.0	50.0	48.0	46.0
Energy Average		57.8	Average:		66.8	63.6	59.9	58.5	53.8	50.1	44.8	43.7	42.3
Evening	Min	43.6	51.2	41.3	47.0	46.0	45.0	44.0	43.0	43.0	42.0	42.0	42.0
	Max	53.7	78.2	42.1	62.0	60.0	56.0	53.0	49.0	46.0	44.0	43.0	43.0
Energy Average		50.9	Average:		56.3	54.7	52.0	50.0	46.7	45.0	43.0	42.3	42.3
Night	Min	42.3	53.9	39.0	48.0	47.0	44.0	43.0	42.0	41.0	39.0	39.0	39.0
	Max	54.9	81.0	43.1	64.0	59.0	55.0	54.0	50.0	48.0	45.0	44.0	44.0
Energy Average		48.9	Average:		53.3	51.1	48.3	47.2	45.0	43.7	41.7	41.2	40.9

L_{eq} (dBA)		
24-Hour	*Daytime*	*Nighttime*
55.4	**57.0**	**48.9**

24-Hour CNEL (dBA)
58.1

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

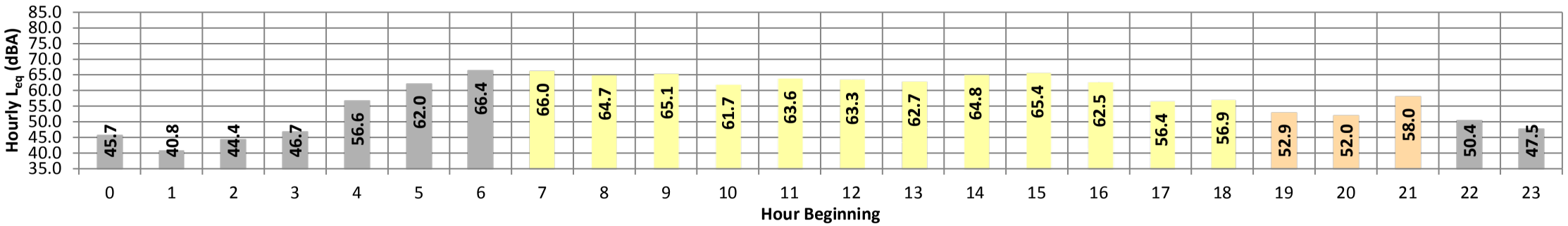
Date: Tuesday, April 02, 2019
Project: MCH

Location: L8 - Located on Chino Corona Road, near County Road, adjacent to existing rural residential homes.

Meter: Piccolo I

JN: 10351
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	45.7	68.7	39.3	54.0	52.0	49.0	48.0	45.0	42.0	40.0	39.0	39.0	45.7	10.0	55.7
	1	40.8	55.6	36.4	49.0	48.0	44.0	42.0	40.0	39.0	36.0	36.0	36.0	40.8	10.0	50.8
	2	44.4	73.5	36.4	51.0	49.0	44.0	42.0	41.0	39.0	39.0	39.0	36.0	44.4	10.0	54.4
	3	46.7	71.5	39.2	55.0	54.0	50.0	48.0	44.0	42.0	39.0	39.0	39.0	46.7	10.0	56.7
	4	56.6	84.7	41.1	63.0	58.0	52.0	48.0	44.0	43.0	42.0	42.0	41.0	56.6	10.0	66.6
	5	62.0	83.7	43.7	75.0	73.0	69.0	64.0	52.0	48.0	45.0	45.0	44.0	62.0	10.0	72.0
	6	66.4	86.0	45.6	77.0	75.0	73.0	71.0	63.0	57.0	50.0	49.0	47.0	66.4	10.0	76.4
Day	7	66.0	89.9	47.0	77.0	75.0	72.0	70.0	59.0	53.0	49.0	48.0	48.0	66.0	0.0	66.0
	8	64.7	93.5	40.7	75.0	71.0	64.0	59.0	51.0	49.0	45.0	43.0	41.0	64.7	0.0	64.7
	9	65.1	90.3	41.1	78.0	73.0	66.0	61.0	51.0	48.0	44.0	43.0	42.0	65.1	0.0	65.1
	10	61.7	85.3	41.1	76.0	71.0	63.0	59.0	52.0	48.0	45.0	44.0	42.0	61.7	0.0	61.7
	11	63.6	87.1	36.4	76.0	73.0	66.0	61.0	51.0	47.0	42.0	40.0	39.0	63.6	0.0	63.6
	12	63.3	89.4	38.8	76.0	73.0	67.0	62.0	52.0	48.0	42.0	41.0	39.0	63.3	0.0	63.3
	13	62.7	84.5	45.2	75.0	73.0	68.0	64.0	55.0	52.0	48.0	47.0	46.0	62.7	0.0	62.7
	14	64.8	91.2	44.8	77.0	73.0	69.0	65.0	54.0	51.0	48.0	47.0	46.0	64.8	0.0	64.8
	15	65.4	89.0	43.6	77.0	74.0	71.0	69.0	57.0	51.0	46.0	45.0	44.0	65.4	0.0	65.4
	16	62.5	87.2	42.7	74.0	72.0	67.0	62.0	52.0	49.0	45.0	44.0	43.0	62.5	0.0	62.5
	17	56.4	80.1	41.0	70.0	67.0	59.0	55.0	48.0	46.0	43.0	43.0	41.0	56.4	0.0	56.4
	18	56.9	81.4	40.9	70.0	68.0	59.0	55.0	47.0	44.0	42.0	42.0	41.0	56.9	0.0	56.9
Evening	19	52.9	80.6	41.4	64.0	58.0	54.0	52.0	46.0	44.0	42.0	42.0	42.0	52.9	5.0	57.9
	20	52.0	76.1	40.7	63.0	60.0	55.0	53.0	46.0	43.0	41.0	41.0	41.0	52.0	5.0	57.0
	21	58.0	77.9	39.3	72.0	70.0	62.0	56.0	45.0	43.0	41.0	41.0	39.0	58.0	5.0	63.0
Night	22	50.4	79.1	39.2	60.0	54.0	50.0	47.0	42.0	41.0	39.0	39.0	39.0	50.4	10.0	60.4
	23	47.5	74.2	39.3	54.0	50.0	48.0	48.0	43.0	42.0	41.0	40.0	39.0	47.5	10.0	57.5

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	56.4	80.1	36.4	70.0	67.0	59.0	55.0	47.0	44.0	42.0	40.0	39.0
	Max	66.0	93.5	47.0	78.0	75.0	72.0	70.0	59.0	53.0	49.0	48.0	48.0
Energy Average		63.5	Average:		75.1	71.9	65.9	61.8	52.4	48.8	44.9	43.9	42.7
Evening	Min	52.0	76.1	39.3	63.0	58.0	54.0	52.0	45.0	43.0	41.0	41.0	39.0
	Max	58.0	80.6	41.4	72.0	70.0	62.0	56.0	46.0	44.0	42.0	42.0	42.0
Energy Average		55.2	Average:		66.3	62.7	57.0	53.7	45.7	43.3	41.3	41.3	40.7
Night	Min	40.8	55.6	36.4	49.0	48.0	44.0	42.0	40.0	39.0	36.0	36.0	36.0
	Max	66.4	86.0	45.6	77.0	75.0	73.0	71.0	63.0	57.0	50.0	49.0	47.0
Energy Average		58.7	Average:		59.8	57.0	53.2	50.9	46.0	43.7	41.2	40.9	40.0

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
61.6	62.7	58.7

24-Hour CNEL (dBA)
66.1

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

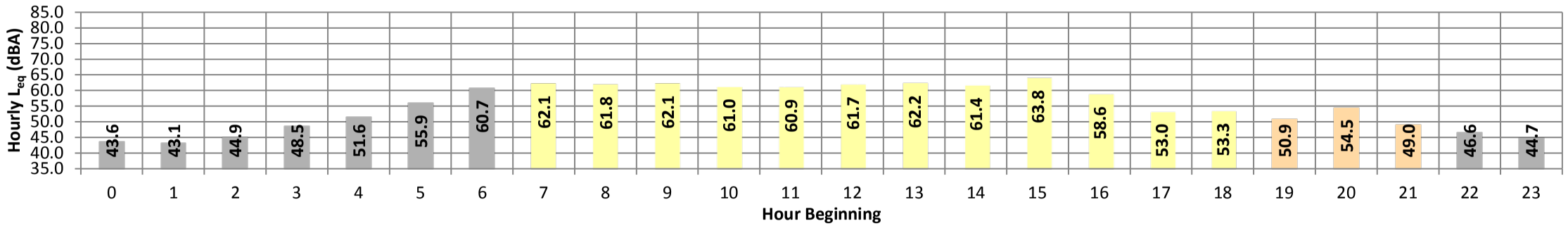
Date: Tuesday, April 02, 2019
Project: MCH

Location: L9 - Located on Hereford Road, near residential construction and a vacant area, east of the Project site.

Meter: Piccolo I

JN: 10351
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	43.6	54.0	36.9	50.0	50.0	48.0	47.0	44.0	42.0	39.0	39.0	39.0	43.6	10.0	53.6
	1	43.1	58.1	36.2	54.0	51.0	47.0	45.0	41.0	39.0	39.0	39.0	36.0	43.1	10.0	53.1
	2	44.9	63.0	36.2	56.0	54.0	49.0	45.0	42.0	40.0	39.0	38.0	36.0	44.9	10.0	54.9
	3	48.5	63.4	40.3	60.0	58.0	53.0	51.0	46.0	44.0	42.0	41.0	41.0	48.5	10.0	58.5
	4	51.6	70.4	42.2	61.0	59.0	55.0	53.0	50.0	48.0	45.0	44.0	43.0	51.6	10.0	61.6
	5	55.9	71.8	45.4	64.0	63.0	61.0	59.0	55.0	53.0	49.0	48.0	47.0	55.9	10.0	65.9
	6	60.7	78.1	47.2	69.0	67.0	65.0	64.0	61.0	58.0	52.0	51.0	49.0	60.7	10.0	70.7
Day	7	62.1	84.8	46.9	71.0	70.0	67.0	66.0	61.0	57.0	51.0	49.0	48.0	62.1	0.0	62.1
	8	61.8	82.0	46.6	72.0	70.0	67.0	65.0	60.0	57.0	50.0	49.0	47.0	61.8	0.0	61.8
	9	62.1	81.4	45.4	72.0	70.0	68.0	66.0	60.0	56.0	50.0	48.0	47.0	62.1	0.0	62.1
	10	61.0	81.5	43.0	73.0	70.0	67.0	65.0	57.0	51.0	46.0	45.0	44.0	61.0	0.0	61.0
	11	60.9	80.8	39.3	73.0	70.0	66.0	65.0	58.0	51.0	43.0	42.0	41.0	60.9	0.0	60.9
	12	61.7	79.6	41.8	73.0	71.0	68.0	66.0	58.0	53.0	46.0	45.0	43.0	61.7	0.0	61.7
	13	62.2	78.6	45.1	73.0	71.0	68.0	66.0	61.0	56.0	50.0	49.0	47.0	62.2	0.0	62.2
	14	61.4	79.7	45.1	73.0	70.0	67.0	65.0	59.0	55.0	50.0	48.0	47.0	61.4	0.0	61.4
	15	63.8	89.6	43.2	75.0	71.0	67.0	64.0	59.0	55.0	48.0	47.0	45.0	63.8	0.0	63.8
	16	58.6	84.7	42.7	69.0	66.0	62.0	61.0	56.0	52.0	46.0	45.0	43.0	58.6	0.0	58.6
	17	53.0	68.6	42.0	62.0	61.0	58.0	57.0	52.0	49.0	45.0	44.0	43.0	53.0	0.0	53.0
	18	53.3	71.8	42.1	65.0	62.0	58.0	56.0	50.0	47.0	44.0	43.0	42.0	53.3	0.0	53.3
Evening	19	50.9	72.0	41.6	60.0	59.0	56.0	54.0	49.0	45.0	43.0	42.0	42.0	50.9	5.0	55.9
	20	54.5	77.2	40.9	67.0	65.0	60.0	57.0	47.0	44.0	42.0	42.0	41.0	54.5	5.0	59.5
	21	49.0	64.7	39.2	60.0	59.0	55.0	52.0	46.0	44.0	42.0	41.0	40.0	49.0	5.0	54.0
Night	22	46.6	65.9	39.1	57.0	56.0	53.0	50.0	43.0	41.0	39.0	39.0	39.0	46.6	10.0	56.6
	23	44.7	64.0	39.1	55.0	53.0	47.0	46.0	42.0	41.0	39.0	39.0	39.0	44.7	10.0	54.7

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	53.0	68.6	39.3	62.0	61.0	58.0	56.0	50.0	47.0	43.0	42.0	41.0
	Max	63.8	89.6	46.9	75.0	71.0	68.0	66.0	61.0	57.0	51.0	49.0	48.0
Energy Average		61.1	Average:		70.9	68.5	65.3	63.5	57.6	53.3	47.4	46.2	44.8
Evening	Min	49.0	64.7	39.2	60.0	59.0	55.0	52.0	46.0	44.0	42.0	41.0	40.0
	Max	54.5	77.2	41.6	67.0	65.0	60.0	57.0	49.0	45.0	43.0	42.0	42.0
Energy Average		52.1	Average:		62.3	61.0	57.0	54.3	47.3	44.3	42.3	41.7	41.0
Night	Min	43.1	54.0	36.2	50.0	50.0	47.0	45.0	41.0	39.0	39.0	38.0	36.0
	Max	60.7	78.1	47.2	69.0	67.0	65.0	64.0	61.0	58.0	52.0	51.0	49.0
Energy Average		53.3	Average:		58.4	56.8	53.1	51.1	47.1	45.1	42.6	42.0	41.0

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
58.7	60.2	53.3

24-Hour CNEL (dBA)
61.8

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

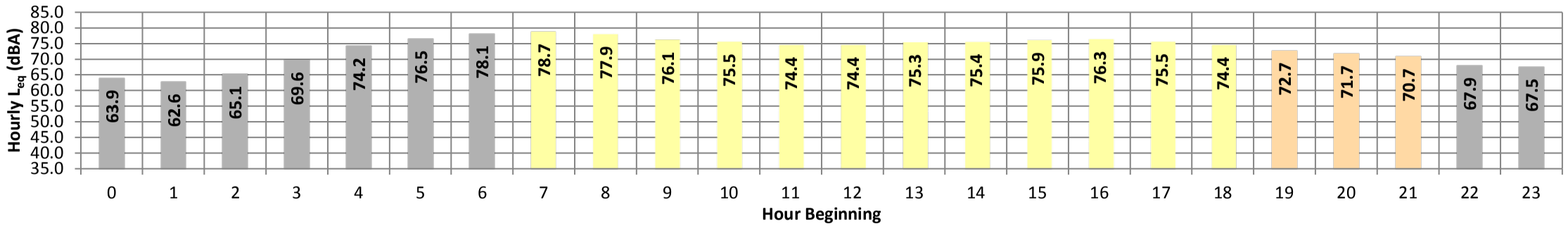
Date: Tuesday, April 02, 2019
Project: MCH

Location: L10 - Located near the intersection of Walters Street and Hellman Avenue, adjacent to existing single-family residential homes, east of the Project site.

Meter: Piccolo I

JN: 10351
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	63.9	86.0	38.7	78.0	75.0	69.0	63.0	49.0	44.0	40.0	39.0	38.0	63.9	10.0	73.9
	1	62.6	86.8	38.7	77.0	73.0	63.0	57.0	46.0	42.0	39.0	38.0	38.0	62.6	10.0	72.6
	2	65.1	90.1	38.7	79.0	74.0	64.0	57.0	47.0	43.0	39.0	38.0	38.0	65.1	10.0	75.1
	3	69.6	90.5	41.1	83.0	81.0	77.0	72.0	57.0	49.0	44.0	43.0	41.0	69.6	10.0	79.6
	4	74.2	90.0	43.4	85.0	83.0	81.0	80.0	72.0	59.0	47.0	46.0	44.0	74.2	10.0	84.2
	5	76.5	91.0	49.2	84.0	83.0	82.0	81.0	78.0	71.0	57.0	54.0	51.0	76.5	10.0	86.5
	6	78.1	91.3	53.3	85.0	84.0	82.0	82.0	79.0	76.0	67.0	63.0	57.0	78.1	10.0	88.1
Day	7	78.7	93.1	51.9	85.0	84.0	83.0	82.0	80.0	77.0	67.0	63.0	57.0	78.7	0.0	78.7
	8	77.9	97.3	47.5	86.0	84.0	83.0	82.0	79.0	74.0	60.0	56.0	51.0	77.9	0.0	77.9
	9	76.1	92.1	47.6	85.0	84.0	82.0	80.0	76.0	70.0	58.0	54.0	50.0	76.1	0.0	76.1
	10	75.5	92.0	46.1	86.0	84.0	81.0	80.0	74.0	68.0	54.0	52.0	48.0	75.5	0.0	75.5
	11	74.4	92.2	47.1	84.0	82.0	80.0	79.0	74.0	68.0	55.0	53.0	50.0	74.4	0.0	74.4
	12	74.4	91.7	47.8	84.0	83.0	80.0	79.0	74.0	68.0	55.0	53.0	50.0	74.4	0.0	74.4
	13	75.3	94.8	50.4	85.0	83.0	81.0	79.0	75.0	69.0	57.0	55.0	52.0	75.3	0.0	75.3
	14	75.4	90.8	50.2	85.0	83.0	81.0	79.0	75.0	71.0	58.0	55.0	52.0	75.4	0.0	75.4
	15	75.9	93.5	49.0	85.0	83.0	81.0	80.0	76.0	72.0	60.0	57.0	52.0	75.9	0.0	75.9
	16	76.3	94.8	48.7	84.0	83.0	81.0	80.0	77.0	73.0	58.0	55.0	51.0	76.3	0.0	76.3
	17	75.5	90.7	48.6	84.0	83.0	81.0	80.0	76.0	72.0	56.0	53.0	50.0	75.5	0.0	75.5
	18	74.4	88.1	46.0	83.0	82.0	80.0	79.0	75.0	69.0	54.0	51.0	48.0	74.4	0.0	74.4
Evening	19	72.7	94.6	44.0	82.0	81.0	79.0	77.0	73.0	63.0	48.0	47.0	45.0	72.7	5.0	77.7
	20	71.7	91.8	42.7	82.0	80.0	78.0	76.0	71.0	61.0	47.0	45.0	44.0	71.7	5.0	76.7
	21	70.7	88.3	41.6	81.0	80.0	78.0	76.0	68.0	58.0	46.0	44.0	42.0	70.7	5.0	75.7
Night	22	67.9	85.9	38.8	79.0	78.0	75.0	73.0	61.0	50.0	42.0	41.0	40.0	67.9	10.0	77.9
	23	67.5	89.1	40.0	80.0	78.0	75.0	72.0	57.0	47.0	42.0	41.0	40.0	67.5	10.0	77.5

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	74.4	88.1	46.0	83.0	82.0	80.0	79.0	74.0	68.0	54.0	51.0	48.0
	Max	78.7	97.3	51.9	86.0	84.0	83.0	82.0	80.0	77.0	67.0	63.0	57.0
Energy Average		76.0	Average:		84.7	83.2	81.2	79.9	75.9	70.9	57.7	54.8	50.9
Evening	Min	70.7	88.3	41.6	81.0	80.0	78.0	76.0	68.0	58.0	46.0	44.0	42.0
	Max	72.7	94.6	44.0	82.0	81.0	79.0	77.0	73.0	63.0	48.0	47.0	45.0
Energy Average		71.8	Average:		81.7	80.3	78.3	76.3	70.7	60.7	47.0	45.3	43.7
Night	Min	62.6	85.9	38.7	77.0	73.0	63.0	57.0	46.0	42.0	39.0	38.0	38.0
	Max	78.1	91.3	53.3	85.0	84.0	82.0	82.0	79.0	76.0	67.0	63.0	57.0
Energy Average		72.6	Average:		81.1	78.8	74.2	70.8	60.7	53.4	46.3	44.8	43.0

L_{eq} (dBA)		
24-Hour	Daytime	Nighttime
74.6	75.4	72.6

24-Hour CNEL (dBA)
79.7

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

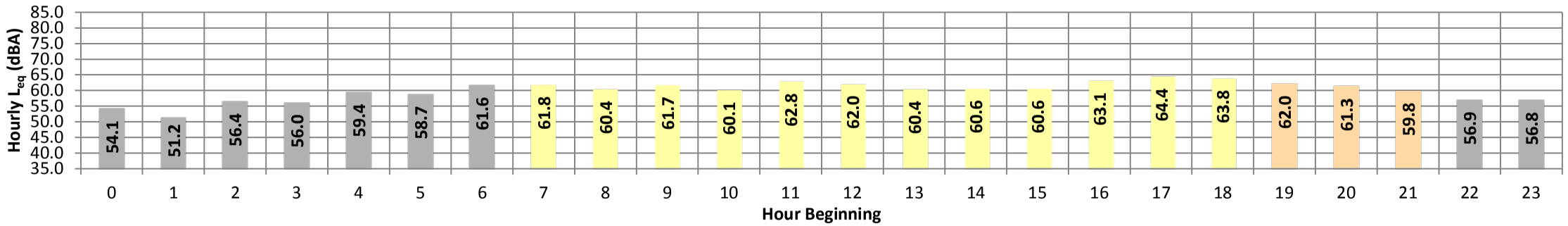
Date: Tuesday, April 02, 2019
Project: MCH

Location: L11 - Located on Chandler Street, near a vacant area and existing residential neighborhood.

Meter: Piccolo I

JN: 10351
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	54.1	79.5	38.8	68.0	63.0	55.0	51.0	46.0	42.0	38.0	38.0	38.0	54.1	10.0	64.1
	1	51.2	75.7	35.9	64.0	58.0	52.0	49.0	41.0	39.0	38.0	38.0	38.0	51.2	10.0	61.2
	2	56.4	84.1	38.8	66.0	61.0	55.0	53.0	43.0	40.0	38.0	38.0	38.0	56.4	10.0	66.4
	3	56.0	85.0	38.9	66.0	63.0	60.0	57.0	49.0	45.0	40.0	40.0	39.0	56.0	10.0	66.0
	4	59.4	83.8	40.6	70.0	66.0	62.0	61.0	55.0	49.0	44.0	43.0	41.0	59.4	10.0	69.4
	5	58.7	83.4	44.3	69.0	65.0	62.0	61.0	57.0	52.0	48.0	47.0	45.0	58.7	10.0	68.7
	6	61.6	82.5	47.0	73.0	70.0	66.0	63.0	59.0	56.0	51.0	50.0	48.0	61.6	10.0	71.6
Day	7	61.8	83.9	46.5	73.0	71.0	68.0	64.0	58.0	55.0	50.0	49.0	47.0	61.8	0.0	61.8
	8	60.4	82.5	41.5	71.0	70.0	67.0	63.0	56.0	52.0	46.0	44.0	43.0	60.4	0.0	60.4
	9	61.7	85.0	41.7	73.0	71.0	67.0	64.0	57.0	52.0	46.0	45.0	43.0	61.7	0.0	61.7
	10	60.1	85.1	41.6	71.0	69.0	65.0	62.0	54.0	50.0	45.0	44.0	42.0	60.1	0.0	60.1
	11	62.8	91.1	39.8	72.0	70.0	66.0	64.0	55.0	49.0	43.0	42.0	40.0	62.8	0.0	62.8
	12	62.0	89.3	40.6	73.0	70.0	66.0	64.0	55.0	50.0	44.0	42.0	41.0	62.0	0.0	62.0
	13	60.4	81.0	44.0	72.0	70.0	67.0	64.0	56.0	51.0	47.0	46.0	45.0	60.4	0.0	60.4
	14	60.6	81.3	42.7	71.0	70.0	67.0	66.0	57.0	52.0	48.0	47.0	45.0	60.6	0.0	60.6
	15	60.6	75.6	43.8	71.0	70.0	68.0	66.0	58.0	52.0	48.0	47.0	45.0	60.6	0.0	60.6
	16	63.1	83.4	44.0	73.0	72.0	69.0	68.0	60.0	54.0	48.0	46.0	45.0	63.1	0.0	63.1
	17	64.4	92.2	43.7	74.0	72.0	69.0	68.0	61.0	53.0	47.0	46.0	44.0	64.4	0.0	64.4
	18	63.8	89.4	42.8	73.0	72.0	69.0	68.0	60.0	52.0	45.0	44.0	43.0	63.8	0.0	63.8
Evening	19	62.0	83.6	41.6	72.0	70.0	68.0	67.0	57.0	50.0	44.0	43.0	42.0	62.0	5.0	67.0
	20	61.3	82.7	40.6	72.0	70.0	68.0	66.0	56.0	49.0	43.0	42.0	41.0	61.3	5.0	66.3
	21	59.8	81.6	38.9	71.0	70.0	67.0	64.0	52.0	46.0	42.0	41.0	39.0	59.8	5.0	64.8
Night	22	56.9	75.5	38.8	70.0	68.0	63.0	60.0	51.0	46.0	40.0	39.0	38.0	56.9	10.0	66.9
	23	56.8	79.6	38.8	70.0	68.0	61.0	57.0	47.0	43.0	39.0	38.0	38.0	56.8	10.0	66.8

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	60.1	75.6	39.8	71.0	69.0	65.0	62.0	54.0	49.0	43.0	42.0	40.0
	Max	64.4	92.2	46.5	74.0	72.0	69.0	68.0	61.0	55.0	50.0	49.0	47.0
Energy Average		62.0	Average:		72.3	70.6	67.3	65.1	57.3	51.8	46.4	45.2	43.6
Evening	Min	59.8	81.6	38.9	71.0	70.0	67.0	64.0	52.0	46.0	42.0	41.0	39.0
	Max	62.0	83.6	41.6	72.0	70.0	68.0	67.0	57.0	50.0	44.0	43.0	42.0
Energy Average		61.1	Average:		71.7	70.0	67.7	65.7	55.0	48.3	43.0	42.0	40.7
Night	Min	51.2	75.5	35.9	64.0	58.0	52.0	49.0	41.0	39.0	38.0	38.0	38.0
	Max	61.6	85.0	47.0	73.0	70.0	66.0	63.0	59.0	56.0	51.0	50.0	48.0
Energy Average		57.7	Average:		68.4	64.7	59.6	56.9	49.8	45.8	41.8	41.2	40.3

L_{eq} (dBA)		
24-Hour	*Daytime*	*Nighttime*
60.7	**61.9**	**57.7**

24-Hour CNEL (dBA)

65.4

URBAN CROSSROADS

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APPENDIX 7.1:

OFF-SITE TRAFFIC NOISE LEVEL CONTOURS

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: MCH
Road Name: Central Av. | Job Number: 10351
Road Segment: n/o El Prado Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,420 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,942 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	2.55	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.43	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.36	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:	70.2	67.6	66.7	63.7	70.9	71.3
Medium Trucks:	68.2	66.3	60.7	61.1	68.5	68.7
Heavy Trucks:	69.1	67.6	56.0	60.4	68.5	68.5
Vehicle Noise:	74.0	72.0	67.9	66.7	74.2	74.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	246	531	1,144
CNEL:	119	257	553	1,192

Thursday, May 02, 2019

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: MCH
Road Name: Central Av. | Job Number: 10351
Road Segment: s/o El Prado Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,911 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,491 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:	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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	45.869
Medium Trucks:	45.676
Heavy Trucks:	45.695

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.30	0.46	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.69	0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-13.62	0.48	-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:	71.0	68.4	67.5	64.5	71.7	72.2
Medium Trucks:	69.0	67.1	61.5	62.0	69.4	69.6
Heavy Trucks:	69.9	68.5	56.9	61.2	69.3	69.4
Vehicle Noise:	74.8	72.8	68.8	67.6	75.1	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	281	606	1,306
CNEL:	136	293	632	1,361

Thursday, May 02, 2019

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: MCH
Road Name: El Prado Rd. | Job Number: 10351
Road Segment: n/o Kimball Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,718 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,472 vehicles
Vehicle Speed:	45 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.80	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	79.45	-11.19	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-15.12	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:	70.3	67.8	66.9	63.9	71.0	71.5
Medium Trucks:	68.4	66.4	60.8	61.3	68.7	68.9
Heavy Trucks:	69.2	67.8	56.2	60.6	68.7	68.7
Vehicle Noise:	74.2	72.2	68.1	66.9	74.4	74.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	186	401	863
CNEL:	90	194	417	899

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: n/o Walnut Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,254 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,025 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	1.80	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-11.18	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-15.11	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:	74.8	72.2	71.3	68.3	75.5	75.9
Medium Trucks:	72.5	70.6	65.0	65.4	72.8	73.0
Heavy Trucks:	72.5	71.1	59.5	63.9	72.0	72.0
Vehicle Noise:	78.2	76.1	72.5	71.0	78.5	78.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	309	665	1,433	3,087
CNEL:	322	695	1,497	3,225

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: n/o Riverside Dr.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,283 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,528 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	1.02	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-11.96	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-15.89	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	71.4	70.6	67.6	74.7	75.2
Medium Trucks:	71.7	69.8	64.2	64.6	72.0	72.2
Heavy Trucks:	71.8	70.3	58.8	63.1	71.2	71.3
Vehicle Noise:	77.4	75.4	71.7	70.3	77.7	78.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	274	590	1,271	2,739
CNEL:	286	616	1,328	2,861

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: n/o Chino Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,245 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,525 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	1.02	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-11.97	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-15.90	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:	74.0	71.4	70.5	67.6	74.7	75.2
Medium Trucks:	71.7	69.8	64.2	64.6	72.0	72.2
Heavy Trucks:	71.8	70.3	58.8	63.1	71.2	71.2
Vehicle Noise:	77.4	75.3	71.7	70.3	77.7	78.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	274	589	1,270	2,736
CNEL:	286	616	1,327	2,858

Thursday, May 02, 2019

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: n/o Schaefer Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,794 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,779 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	1.43	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-11.55	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-15.48	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:	74.4	71.9	71.0	68.0	75.1	75.6
Medium Trucks:	72.1	70.2	64.6	65.0	72.4	72.6
Heavy Trucks:	72.2	70.7	59.2	63.5	71.6	71.7
Vehicle Noise:	77.8	75.8	72.1	70.7	78.1	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	292	629	1,354	2,917
CNEL:	305	657	1,414	3,047

Thursday, May 02, 2019

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: n/o Edison Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,878 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,988 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	-11.23	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-15.17	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:	74.7	72.2	71.3	68.3	75.5	75.9
Medium Trucks:	72.4	70.5	64.9	65.4	72.8	72.9
Heavy Trucks:	72.5	71.1	59.5	63.8	71.9	72.0
Vehicle Noise:	78.1	76.1	72.4	71.0	78.4	78.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	306	660	1,421	3,061
CNEL:	320	689	1,484	3,198

Thursday, May 02, 2019

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: n/o Eucalyptus Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,743 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,774 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	1.43	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-11.56	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-15.49	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:	74.4	71.9	71.0	68.0	75.1	75.6
Medium Trucks:	72.1	70.2	64.6	65.0	72.4	72.6
Heavy Trucks:	72.2	70.7	59.2	63.5	71.6	71.7
Vehicle Noise:	77.8	75.8	72.1	70.7	78.1	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	291	628	1,352	2,914
CNEL:	304	656	1,413	3,044

Thursday, May 02, 2019

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: n/o Merrill Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,921 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,192 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	2.04	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.95	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-14.88	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:	75.0	72.5	71.6	68.6	75.7	76.2
Medium Trucks:	72.7	70.8	65.2	65.6	73.0	73.2
Heavy Trucks:	72.8	71.3	59.8	64.1	72.2	72.3
Vehicle Noise:	78.4	76.4	72.7	71.3	78.7	79.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	320	689	1,485	3,199
CNEL:	334	720	1,551	3,342

Thursday, May 02, 2019

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: s/o Merrill Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,618 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,062 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	1.85	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-11.13	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-15.06	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:	74.9	72.3	71.4	68.4	75.6	76.0
Medium Trucks:	72.5	70.6	65.0	65.5	72.9	73.1
Heavy Trucks:	72.6	71.2	59.6	63.9	72.0	72.1
Vehicle Noise:	78.2	76.2	72.5	71.1	78.5	78.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	311	670	1,444	3,112
CNEL:	325	700	1,509	3,250

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: n/o Kimball Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,229 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,023 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	1.80	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-11.18	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-15.12	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:	74.8	72.2	71.3	68.3	75.5	75.9
Medium Trucks:	72.5	70.6	65.0	65.4	72.8	73.0
Heavy Trucks:	72.5	71.1	59.5	63.9	72.0	72.0
Vehicle Noise:	78.2	76.1	72.5	71.0	78.5	78.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	309	665	1,432	3,085
CNEL:	322	694	1,496	3,223

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Euclid Av.
Road Segment: n/o Bickmore Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,579 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,858 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	-0.32	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-13.30	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-17.23	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	70.1	69.2	66.2	73.4	73.8
Medium Trucks:	70.4	68.4	62.8	63.3	70.7	70.9
Heavy Trucks:	70.4	69.0	57.4	61.8	69.8	69.9
Vehicle Noise:	76.1	74.0	70.3	68.9	76.4	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	223	480	1,035	2,230
CNEL:	233	502	1,081	2,330

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Archibald Av.
Road Segment: n/o Limonite Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,446 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,545 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	1.05	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-11.93	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-15.87	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:	74.1	71.5	70.6	67.6	74.8	75.2
Medium Trucks:	71.7	69.8	64.2	64.7	72.1	72.3
Heavy Trucks:	71.8	70.4	58.8	63.1	71.2	71.3
Vehicle Noise:	77.4	75.4	71.7	70.3	77.7	78.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	275	593	1,277	2,751
CNEL:	287	619	1,334	2,873

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Archibald Av.
Road Segment: s/o Limonite Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,166 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,417 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	1.70	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-11.28	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-15.22	-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	64.5	63.6	60.6	67.8	68.2
Medium Trucks:	65.1	63.2	57.6	58.0	65.4	65.6
Heavy Trucks:	66.0	64.6	53.0	57.3	65.4	65.5
Vehicle Noise:	70.9	68.9	64.9	63.7	71.1	71.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	195	421	906
CNEL:	94	204	438	945

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Archibald Av.
Road Segment: s/o Schleisman Rd.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,994 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,199 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	1.29	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-11.69	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-15.63	-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:	66.7	64.1	63.2	60.2	67.4	67.8
Medium Trucks:	64.7	62.8	57.2	57.6	65.0	65.2
Heavy Trucks:	65.6	64.2	52.6	56.9	65.0	65.1
Vehicle Noise:	70.5	68.5	64.5	63.3	70.7	71.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	395	851
CNEL:	89	191	412	887

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Kimball Av.
Road Segment: w/o Mountain Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,433 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,943 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	0.29	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.69	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.62	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:	70.6	68.0	67.1	64.1	71.3	71.7
Medium Trucks:	68.4	66.5	60.9	61.3	68.7	68.9
Heavy Trucks:	68.9	67.4	55.9	60.2	68.3	68.3
Vehicle Noise:	74.2	72.1	68.3	67.0	74.4	74.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	402	867
CNEL:	90	195	420	905

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Kimball Av.
Road Segment: w/o Euclid Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,184 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,218 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	0.87	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.11	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.05	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	68.6	67.7	64.7	71.9	72.3
Medium Trucks:	69.0	67.1	61.5	61.9	69.3	69.5
Heavy Trucks:	69.4	68.0	56.4	60.8	68.9	68.9
Vehicle Noise:	74.7	72.7	68.9	67.5	75.0	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	204	440	947
CNEL:	99	213	459	988

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Kimball Av.
Road Segment: e/o Euclid Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,975 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,798 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.04	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.03	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.96	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	67.4	66.5	63.5	70.7	71.1
Medium Trucks:	67.8	65.9	60.3	60.7	68.1	68.3
Heavy Trucks:	68.3	66.8	55.2	59.6	67.7	67.7
Vehicle Noise:	73.6	71.5	67.7	66.4	73.8	74.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	190	408	880
CNEL:	92	198	426	918

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Kimball Av.
Road Segment: w/o Rincon Meadows Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,031 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,903 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.20	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-12.78	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.71	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	67.6	66.7	63.8	70.9	71.4
Medium Trucks:	68.1	66.1	60.5	61.0	68.4	68.6
Heavy Trucks:	68.5	67.1	55.5	59.8	67.9	68.0
Vehicle Noise:	73.8	71.8	67.9	66.6	74.1	74.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	197	424	914
CNEL:	95	205	443	954

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Kimball Av.
Road Segment: e/o Rincon Meadows Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,215 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,822 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.01	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-12.97	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.90	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	67.5	66.6	63.6	70.7	71.2
Medium Trucks:	67.9	65.9	60.3	60.8	68.2	68.4
Heavy Trucks:	68.3	66.9	55.3	59.6	67.7	67.8
Vehicle Noise:	73.6	71.6	67.7	66.4	73.9	74.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	191	412	888
CNEL:	93	200	430	926

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Kimball Av.
Road Segment: e/o Mill Creek Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,458 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,646 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.43	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.41	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-17.34	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	67.0	66.1	63.1	70.3	70.7
Medium Trucks:	67.4	65.5	59.9	60.3	67.8	67.9
Heavy Trucks:	67.9	66.4	54.9	59.2	67.3	67.4
Vehicle Noise:	73.2	71.1	67.3	66.0	73.4	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	385	830
CNEL:	87	187	402	866

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Kimball Av.
Road Segment: e/o Main St.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,466 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,547 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.70	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.68	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-17.61	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	66.7	65.8	62.8	70.0	70.5
Medium Trucks:	67.2	65.2	59.6	60.1	67.5	67.7
Heavy Trucks:	67.6	66.2	54.6	58.9	67.0	67.1
Vehicle Noise:	72.9	70.9	67.0	65.7	73.2	73.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	171	369	796
CNEL:	83	179	386	831

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Kimball Av.
Road Segment: e/o Flight Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,131 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,313 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.41	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-14.39	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-18.32	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	66.0	65.1	62.1	69.3	69.7
Medium Trucks:	66.5	64.5	58.9	59.4	66.8	67.0
Heavy Trucks:	66.9	65.5	53.9	58.2	66.3	66.4
Vehicle Noise:	72.2	70.2	66.3	65.0	72.5	72.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	154	331	714
CNEL:	74	160	346	745

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Limonite Av.
Road Segment: w/o Archibald Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	0 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	78 feet

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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	-42.59	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-55.57	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-59.51	-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:	24.6	22.0	21.1	18.1	25.3	25.7
Medium Trucks:	22.4	20.5	14.9	15.3	22.7	22.9
Heavy Trucks:	22.8	21.4	9.8	14.1	22.2	22.3
Vehicle Noise:	28.1	26.1	22.3	20.9	28.4	28.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	1	1
CNEL:	0	0	1	1

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Limonite Av.
Road Segment: e/o Archibald Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,317 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,832 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	0.04	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-12.95	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-16.88	-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:	67.2	64.6	63.7	60.7	67.9	68.3
Medium Trucks:	65.0	63.1	57.5	57.9	65.3	65.5
Heavy Trucks:	65.5	64.0	52.4	56.8	64.9	64.9
Vehicle Noise:	70.8	68.7	64.9	63.6	71.0	71.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	413	889
CNEL:	93	200	431	928

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Pine Av.
Road Segment: w/o El Prado Rd.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	-28.15	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-41.14	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-45.07	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:	39.4	36.9	36.0	33.0	40.2	40.6
Medium Trucks:	37.5	35.6	30.0	30.4	37.8	38.0
Heavy Trucks:	38.3	36.9	25.3	29.7	37.8	37.8
Vehicle Noise:	43.3	41.3	37.2	36.0	43.5	43.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	1	2	5	10
CNEL:	1	2	5	11

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Pine Av.
Road Segment: w/o Euclid Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,306 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	731 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	-3.50	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-16.48	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-20.41	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:	64.1	61.5	60.6	57.6	64.8	65.2
Medium Trucks:	62.1	60.2	54.6	55.1	62.5	62.6
Heavy Trucks:	63.0	61.6	50.0	54.3	62.4	62.5
Vehicle Noise:	67.9	65.9	61.9	60.7	68.2	68.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	210	452
CNEL:	47	101	219	471

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Pine Av.
Road Segment: e/o Euclid Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,747 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,575 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	1.97	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-11.01	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.94	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:	69.6	67.0	66.1	63.1	70.3	70.7
Medium Trucks:	67.6	65.7	60.1	60.5	67.9	68.1
Heavy Trucks:	68.5	67.0	55.5	59.8	67.9	68.0
Vehicle Noise:	73.4	71.4	67.4	66.2	73.6	73.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	105	226	486	1,047
CNEL:	109	235	506	1,091

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Pine Av.
Road Segment: w/o Chino Corona Rd.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,771 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,977 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	2.60	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.38	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.31	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:	70.2	67.6	66.7	63.7	70.9	71.3
Medium Trucks:	68.2	66.3	60.7	61.2	68.6	68.7
Heavy Trucks:	69.1	67.7	56.1	60.4	68.5	68.6
Vehicle Noise:	74.0	72.0	68.0	66.8	74.3	74.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	248	535	1,153
CNEL:	120	259	558	1,202

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Pine Av.
Road Segment: w/o W. Preserve Loop
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,445 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,645 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	0.03	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-12.96	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-16.89	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	65.1	64.2	61.2	68.3	68.8
Medium Trucks:	65.7	63.7	58.1	58.6	66.0	66.2
Heavy Trucks:	66.5	65.1	53.5	57.8	65.9	66.0
Vehicle Noise:	71.5	69.4	65.4	64.2	71.7	71.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	167	360	776
CNEL:	81	174	376	809

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Pine Av.
Road Segment: w/o E. Preserve Loop
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,664 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,666 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	2.13	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.86	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.79	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	67.2	66.3	63.3	70.4	70.9
Medium Trucks:	67.8	65.8	60.2	60.7	68.1	68.3
Heavy Trucks:	68.6	67.2	55.6	59.9	68.0	68.1
Vehicle Noise:	73.6	71.5	67.5	66.3	73.8	74.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	231	497	1,071
CNEL:	112	241	518	1,117

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: MCH
Road Name: Pine Av. | Job Number: 10351
Road Segment: w/o Hellman Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,513 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,651 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	2.10	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.88	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.82	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	67.1	66.2	63.2	70.4	70.8
Medium Trucks:	67.7	65.8	60.2	60.6	68.1	68.2
Heavy Trucks:	68.6	67.2	55.6	59.9	68.0	68.1
Vehicle Noise:	73.5	71.5	67.5	66.3	73.8	74.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	230	495	1,067
CNEL:	111	240	516	1,112

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: MCH
Road Name: Schleisman Rd. | Job Number: 10351
Road Segment: w/o Archibald Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,660 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,866 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	2.44	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-10.54	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.48	-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	65.3	64.4	61.4	68.6	69.0
Medium Trucks:	65.9	63.9	58.3	58.8	66.2	66.4
Heavy Trucks:	66.7	65.3	53.7	58.1	66.1	66.2
Vehicle Noise:	71.7	69.7	65.6	64.4	71.9	72.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	102	219	471	1,016
CNEL:	106	228	491	1,058

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project | Project Name: MCH
Road Name: Central Av. | Job Number: 10351
Road Segment: n/o El Prado Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,772 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,977 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:	66.2%	13.5%	20.3%	93.48%
Medium Trucks:	77.1%	5.3%	17.6%	4.64%
Heavy Trucks:	86.3%	1.5%	12.2%	1.88%

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:	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	2.61	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.43	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.36	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:	70.2	67.6	66.7	63.7	70.9	71.3
Medium Trucks:	68.2	66.3	60.7	61.1	68.5	68.7
Heavy Trucks:	69.1	67.6	56.0	60.4	68.5	68.5
Vehicle Noise:	74.0	72.0	68.0	66.8	74.2	74.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	247	533	1,148
CNEL:	120	258	556	1,197

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project | Project Name: MCH
Road Name: Central Av. | Job Number: 10351
Road Segment: s/o El Prado Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,873 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,587 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:	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:	66.2%	13.5%	20.3%	93.00%
Medium Trucks:	77.1%	5.3%	17.6%	4.81%
Heavy Trucks:	86.3%	1.5%	12.2%	2.18%

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:	45.869
Medium Trucks:	45.676
Heavy Trucks:	45.695

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.40	0.46	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.47	0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-12.90	0.48	-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	68.5	67.6	64.6	71.8	72.2
Medium Trucks:	69.3	67.3	61.7	62.2	69.6	69.8
Heavy Trucks:	70.6	69.2	57.6	62.0	70.1	70.1
Vehicle Noise:	75.2	73.2	69.0	67.9	75.4	75.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	137	295	635	1,368
CNEL:	142	307	661	1,424

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: El Prado Rd.
Road Segment: n/o Kimball Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,099 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,610 vehicles
Vehicle Speed:	45 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:	66.2%	13.5%	20.3%	93.12%
Medium Trucks:	77.1%	5.3%	17.6%	4.71%
Heavy Trucks:	86.3%	1.5%	12.2%	2.17%

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:	68.46	2.02	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	79.45	-10.94	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-14.31	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:	70.6	68.0	67.1	64.1	71.3	71.7
Medium Trucks:	68.6	66.7	61.1	61.5	68.9	69.1
Heavy Trucks:	70.0	68.6	57.0	61.4	69.5	69.5
Vehicle Noise:	74.6	72.6	68.4	67.3	74.8	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	197	425	916
CNEL:	95	206	443	954

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Euclid Av.
Road Segment: n/o Walnut Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,863 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,086 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:	66.2%	13.5%	20.3%	92.47%
Medium Trucks:	77.1%	5.3%	17.6%	5.05%
Heavy Trucks:	86.3%	1.5%	12.2%	2.48%

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:	71.78	1.85	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.78	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.87	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:	74.8	72.3	71.4	68.4	75.6	76.0
Medium Trucks:	72.9	71.0	65.4	65.8	73.2	73.4
Heavy Trucks:	73.8	72.4	60.8	65.1	73.2	73.3
Vehicle Noise:	78.7	76.7	72.6	71.4	78.9	79.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	330	711	1,531	3,299
CNEL:	344	741	1,596	3,438

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Euclid Av.
Road Segment: n/o Riverside Dr.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,924 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,592 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:	66.2%	13.5%	20.3%	92.30%
Medium Trucks:	77.1%	5.3%	17.6%	5.11%
Heavy Trucks:	86.3%	1.5%	12.2%	2.59%

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	1.08	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-11.49	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-14.44	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:	74.1	71.5	70.6	67.6	74.8	75.2
Medium Trucks:	72.2	70.3	64.7	65.1	72.5	72.7
Heavy Trucks:	73.2	71.8	60.2	64.5	72.6	72.7
Vehicle Noise:	78.0	76.0	71.9	70.7	78.2	78.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	296	639	1,376	2,965
CNEL:	309	665	1,434	3,088

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Euclid Av.
Road Segment: n/o Chino Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,994 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,599 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:	66.2%	13.5%	20.3%	92.33%
Medium Trucks:	77.1%	5.3%	17.6%	5.09%
Heavy Trucks:	86.3%	1.5%	12.2%	2.58%

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:	71.78	1.09	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-11.49	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-14.44	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:	74.1	71.5	70.6	67.6	74.8	75.2
Medium Trucks:	72.2	70.3	64.7	65.1	72.5	72.7
Heavy Trucks:	73.2	71.8	60.2	64.5	72.6	72.7
Vehicle Noise:	78.0	76.0	71.9	70.7	78.2	78.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	297	639	1,377	2,966
CNEL:	309	666	1,434	3,090

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Euclid Av.
Road Segment: n/o Schaefer Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,582 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,858 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:	66.2%	13.5%	20.3%	92.44%
Medium Trucks:	77.1%	5.3%	17.6%	5.05%
Heavy Trucks:	86.3%	1.5%	12.2%	2.52%

Noise Source 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	1.51	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-11.12	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-14.14	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:	74.5	71.9	71.0	68.0	75.2	75.6
Medium Trucks:	72.6	70.6	65.0	65.5	72.9	73.1
Heavy Trucks:	73.5	72.1	60.5	64.8	72.9	73.0
Vehicle Noise:	78.4	76.4	72.3	71.1	78.6	78.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	314	677	1,458	3,142
CNEL:	327	705	1,520	3,274

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Euclid Av.
Road Segment: n/o Edison Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,668 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,067 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:	66.2%	13.5%	20.3%	92.50%
Medium Trucks:	77.1%	5.3%	17.6%	5.02%
Heavy Trucks:	86.3%	1.5%	12.2%	2.47%

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	1.82	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.83	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-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:	74.8	72.2	71.3	68.3	75.5	76.0
Medium Trucks:	72.8	70.9	65.3	65.8	73.2	73.4
Heavy Trucks:	73.8	72.3	60.7	65.1	73.2	73.2
Vehicle Noise:	78.7	76.6	72.6	71.4	78.9	79.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	328	707	1,523	3,281
CNEL:	342	737	1,587	3,419

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Euclid Av.
Road Segment: n/o Eucalyptus Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,639 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,864 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:	66.2%	13.5%	20.3%	92.46%
Medium Trucks:	77.1%	5.3%	17.6%	5.03%
Heavy Trucks:	86.3%	1.5%	12.2%	2.51%

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	1.52	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-11.12	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-14.15	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:	74.5	71.9	71.0	68.0	75.2	75.7
Medium Trucks:	72.6	70.6	65.0	65.5	72.9	73.1
Heavy Trucks:	73.5	72.1	60.5	64.8	72.9	73.0
Vehicle Noise:	78.4	76.4	72.3	71.1	78.6	78.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	314	677	1,459	3,143
CNEL:	327	705	1,520	3,275

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Euclid Av.
Road Segment: n/o Merrill Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,894 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,289 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:	66.2%	13.5%	20.3%	92.60%
Medium Trucks:	77.1%	5.3%	17.6%	4.98%
Heavy Trucks:	86.3%	1.5%	12.2%	2.42%

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:	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	2.13	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.57	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.69	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:	75.1	72.5	71.7	68.7	75.8	76.3
Medium Trucks:	73.1	71.2	65.6	66.0	73.4	73.6
Heavy Trucks:	74.0	72.5	61.0	65.3	73.4	73.5
Vehicle Noise:	78.9	76.9	72.9	71.7	79.1	79.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	342	737	1,588	3,421
CNEL:	357	768	1,655	3,566

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: s/o Merrill Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,662 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,166 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:	66.2%	13.5%	20.3%	92.58%
Medium Trucks:	77.1%	5.3%	17.6%	4.98%
Heavy Trucks:	86.3%	1.5%	12.2%	2.44%

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:	71.78	1.96	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.73	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.83	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:	75.0	72.4	71.5	68.5	75.7	76.1
Medium Trucks:	72.9	71.0	65.4	65.9	73.3	73.5
Heavy Trucks:	73.8	72.4	60.8	65.2	73.2	73.3
Vehicle Noise:	78.8	76.8	72.7	71.5	79.0	79.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	334	719	1,550	3,339
CNEL:	348	750	1,615	3,480

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: n/o Kimball Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,272 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,127 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:	66.2%	13.5%	20.3%	92.57%
Medium Trucks:	77.1%	5.3%	17.6%	4.98%
Heavy Trucks:	86.3%	1.5%	12.2%	2.45%

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:	71.78	1.91	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.79	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.87	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:	74.9	72.3	71.4	68.4	75.6	76.0
Medium Trucks:	72.9	71.0	65.4	65.8	73.2	73.4
Heavy Trucks:	73.8	72.4	60.8	65.1	73.2	73.3
Vehicle Noise:	78.7	76.7	72.7	71.5	78.9	79.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	331	714	1,538	3,313
CNEL:	345	744	1,603	3,453

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: n/o Bickmore Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,643 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,964 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:	66.2%	13.5%	20.3%	92.30%
Medium Trucks:	77.1%	5.3%	17.6%	5.06%
Heavy Trucks:	86.3%	1.5%	12.2%	2.65%

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:	71.78	-0.12	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-12.74	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-15.55	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:	72.9	70.3	69.4	66.4	73.6	74.0
Medium Trucks:	70.9	69.0	63.4	63.9	71.3	71.4
Heavy Trucks:	72.1	70.7	59.1	63.4	71.5	71.6
Vehicle Noise:	76.8	74.8	70.7	69.5	77.0	77.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	247	532	1,146	2,470
CNEL:	257	554	1,194	2,572

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project | Project Name: MCH
Road Name: Archibald Av. | Job Number: 10351
Road Segment: n/o Limonite Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,613 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,561 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:	66.2%	13.5%	20.3%	93.45%
Medium Trucks:	77.1%	5.3%	17.6%	4.66%
Heavy Trucks:	86.3%	1.5%	12.2%	1.89%

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	1.08	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-11.94	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-15.87	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:	74.1	71.5	70.6	67.6	74.8	75.2
Medium Trucks:	71.7	69.8	64.2	64.7	72.1	72.3
Heavy Trucks:	71.8	70.4	58.8	63.1	71.2	71.3
Vehicle Noise:	77.5	75.4	71.7	70.3	77.7	78.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	276	594	1,279	2,756
CNEL:	288	620	1,336	2,879

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project | Project Name: MCH
Road Name: Archibald Av. | Job Number: 10351
Road Segment: s/o Limonite Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,896 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,490 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:	66.2%	13.5%	20.3%	93.37%
Medium Trucks:	77.1%	5.3%	17.6%	4.65%
Heavy Trucks:	86.3%	1.5%	12.2%	1.98%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	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	1.83	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-11.20	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.92	-1.84	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	64.7	63.8	60.8	67.9	68.4
Medium Trucks:	65.2	63.3	57.7	58.1	65.5	65.7
Heavy Trucks:	66.3	64.9	53.3	57.6	65.7	65.8
Vehicle Noise:	71.1	69.1	65.0	63.8	71.3	71.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	200	431	929
CNEL:	97	209	449	968

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project | Project Name: MCH
Road Name: Archibald Av. | Job Number: 10351
Road Segment: s/o Schleisman Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,146 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,215 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:	66.2%	13.5%	20.3%	93.34%
Medium Trucks:	77.1%	5.3%	17.6%	4.71%
Heavy Trucks:	86.3%	1.5%	12.2%	1.95%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.32	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-11.66	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-15.48	-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:	66.7	64.1	63.3	60.3	67.4	67.9
Medium Trucks:	64.8	62.8	57.2	57.7	65.1	65.3
Heavy Trucks:	65.7	64.3	52.7	57.0	65.1	65.2
Vehicle Noise:	70.6	68.6	64.5	63.3	70.8	71.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	399	859
CNEL:	90	193	416	895

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project | Project Name: MCH
Road Name: Kimball Av. | Job Number: 10351
Road Segment: w/o Mountain Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,629 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,063 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:	66.2%	13.5%	20.3%	92.99%
Medium Trucks:	77.1%	5.3%	17.6%	4.76%
Heavy Trucks:	86.3%	1.5%	12.2%	2.26%

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:	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	0.53	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.38	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.62	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:	70.8	68.2	67.3	64.3	71.5	71.9
Medium Trucks:	68.7	66.8	61.2	61.7	69.1	69.2
Heavy Trucks:	69.9	68.4	56.9	61.2	69.3	69.4
Vehicle Noise:	74.7	72.7	68.6	67.4	74.9	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	200	432	930
CNEL:	97	209	450	969

Thursday, May 02, 2019

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project | Project Name: MCH
Road Name: Kimball Av. | Job Number: 10351
Road Segment: w/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,245 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,224 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:	66.2%	13.5%	20.3%	93.24%
Medium Trucks:	77.1%	5.3%	17.6%	4.76%
Heavy Trucks:	86.3%	1.5%	12.2%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	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	0.87	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.05	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.81	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:	71.2	68.6	67.7	64.7	71.9	72.3
Medium Trucks:	69.1	67.1	61.5	62.0	69.4	69.6
Heavy Trucks:	69.7	68.2	56.7	61.0	69.1	69.2
Vehicle Noise:	74.8	72.8	68.9	67.6	75.1	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	207	445	959
CNEL:	100	215	464	1,000

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Kimball Av.
Road Segment: e/o Euclid Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,063 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,806 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.2%	13.5%	20.3%	93.44%
Medium Trucks:	77.1%	5.3%	17.6%	4.67%
Heavy Trucks:	86.3%	1.5%	12.2%	1.89%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.02	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.03	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.96	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	67.4	66.5	63.5	70.7	71.1
Medium Trucks:	67.8	65.9	60.3	60.7	68.1	68.3
Heavy Trucks:	68.3	66.8	55.2	59.6	67.7	67.7
Vehicle Noise:	73.6	71.5	67.7	66.4	73.8	74.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	190	409	881
CNEL:	92	198	427	920

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Kimball Av.
Road Segment: w/o Rincon Meadows Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,120 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,912 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.2%	13.5%	20.3%	93.44%
Medium Trucks:	77.1%	5.3%	17.6%	4.67%
Heavy Trucks:	86.3%	1.5%	12.2%	1.89%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.22	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-12.78	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.71	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	67.7	66.8	63.8	70.9	71.4
Medium Trucks:	68.1	66.1	60.5	61.0	68.4	68.6
Heavy Trucks:	68.5	67.1	55.5	59.8	67.9	68.0
Vehicle Noise:	73.8	71.8	67.9	66.6	74.1	74.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	197	425	915
CNEL:	96	206	443	955

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Kimball Av.
Road Segment: e/o Rincon Meadows Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,304 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,830 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.2%	13.5%	20.3%	93.44%
Medium Trucks:	77.1%	5.3%	17.6%	4.67%
Heavy Trucks:	86.3%	1.5%	12.2%	1.89%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.04	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-12.97	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.90	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	67.5	66.6	63.6	70.8	71.2
Medium Trucks:	67.9	65.9	60.3	60.8	68.2	68.4
Heavy Trucks:	68.3	66.9	55.3	59.6	67.7	67.8
Vehicle Noise:	73.6	71.6	67.8	66.4	73.9	74.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	413	889
CNEL:	93	200	431	928

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Kimball Av.
Road Segment: e/o Mill Creek Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,545 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,654 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.2%	13.5%	20.3%	93.44%
Medium Trucks:	77.1%	5.3%	17.6%	4.67%
Heavy Trucks:	86.3%	1.5%	12.2%	1.89%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.40	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.41	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-17.34	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	67.0	66.1	63.1	70.3	70.7
Medium Trucks:	67.4	65.5	59.9	60.3	67.8	67.9
Heavy Trucks:	67.9	66.4	54.9	59.2	67.3	67.4
Vehicle Noise:	73.2	71.1	67.3	66.0	73.4	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	386	831
CNEL:	87	187	402	867

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Kimball Av.
Road Segment: e/o Main St.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,552 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,555 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.2%	13.5%	20.3%	93.44%
Medium Trucks:	77.1%	5.3%	17.6%	4.67%
Heavy Trucks:	86.3%	1.5%	12.2%	1.89%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.67	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.68	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-17.61	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	66.8	65.9	62.9	70.1	70.5
Medium Trucks:	67.2	65.2	59.6	60.1	67.5	67.7
Heavy Trucks:	67.6	66.2	54.6	58.9	67.0	67.1
Vehicle Noise:	72.9	70.9	67.1	65.7	73.2	73.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	172	370	797
CNEL:	83	179	386	832

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Kimball Av.
Road Segment: e/o Flight Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,143 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,314 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.2%	13.5%	20.3%	93.41%
Medium Trucks:	77.1%	5.3%	17.6%	4.69%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.40	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-14.40	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-18.32	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	66.0	65.1	62.1	69.3	69.7
Medium Trucks:	66.4	64.5	58.9	59.4	66.8	67.0
Heavy Trucks:	66.9	65.5	53.9	58.2	66.3	66.4
Vehicle Noise:	72.2	70.2	66.3	65.0	72.5	72.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	154	331	714
CNEL:	74	160	346	745

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Limonite Av.
Road Segment: w/o Archibald Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	0 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	78 feet

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:	66.2%	13.5%	20.3%	93.41%
Medium Trucks:	77.1%	5.3%	17.6%	4.69%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	-42.59	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-55.58	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-59.51	-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:	24.6	22.0	21.1	18.1	25.3	25.7
Medium Trucks:	22.4	20.5	14.9	15.3	22.7	22.9
Heavy Trucks:	22.8	21.4	9.8	14.1	22.2	22.3
Vehicle Noise:	28.1	26.1	22.3	20.9	28.4	28.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	1	1
CNEL:	0	0	1	1

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Limonite Av.
Road Segment: e/o Archibald Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,897 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,890 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:	66.2%	13.5%	20.3%	93.31%
Medium Trucks:	77.1%	5.3%	17.6%	4.68%
Heavy Trucks:	86.3%	1.5%	12.2%	2.02%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	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	0.17	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-12.83	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-16.49	-1.84	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	64.7	63.8	60.8	68.0	68.5
Medium Trucks:	65.1	63.2	57.6	58.0	65.5	65.6
Heavy Trucks:	65.9	64.4	52.8	57.2	65.3	65.3
Vehicle Noise:	71.0	68.9	65.0	63.8	71.2	71.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	197	425	915
CNEL:	95	206	443	955

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Pine Av.
Road Segment: w/o El Prado Rd.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3 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:	66.2%	13.5%	20.3%	93.41%
Medium Trucks:	77.1%	5.3%	17.6%	4.69%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	-28.15	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-41.14	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-45.07	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:	39.5	36.9	36.0	33.0	40.2	40.6
Medium Trucks:	37.5	35.6	30.0	30.4	37.8	38.0
Heavy Trucks:	38.3	36.9	25.3	29.7	37.8	37.8
Vehicle Noise:	43.3	41.3	37.2	36.0	43.5	43.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	1	2	5	10
CNEL:	1	2	5	11

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Pine Av.
Road Segment: w/o Euclid Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,979 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	798 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:	66.2%	13.5%	20.3%	92.41%
Medium Trucks:	77.1%	5.3%	17.6%	4.95%
Heavy Trucks:	86.3%	1.5%	12.2%	2.64%

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:	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	-3.16	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-15.87	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-18.60	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:	64.4	61.9	61.0	58.0	65.1	65.6
Medium Trucks:	62.7	60.8	55.2	55.7	63.1	63.3
Heavy Trucks:	64.8	63.4	51.8	56.1	64.2	64.3
Vehicle Noise:	68.9	66.9	62.4	61.5	69.0	69.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	111	239	515
CNEL:	54	115	248	535

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Pine Av.
Road Segment: e/o Euclid Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,758 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,676 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:	66.2%	13.5%	20.3%	93.34%
Medium Trucks:	77.1%	5.3%	17.6%	4.65%
Heavy Trucks:	86.3%	1.5%	12.2%	2.01%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	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	-10.89	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.54	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	67.2	66.3	63.3	70.4	70.9
Medium Trucks:	67.7	65.8	60.2	60.6	68.1	68.2
Heavy Trucks:	68.9	67.4	55.9	60.2	68.3	68.4
Vehicle Noise:	73.6	71.6	67.5	66.4	73.8	74.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	233	502	1,082
CNEL:	113	243	523	1,127

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Pine Av.
Road Segment: w/o Chino Corona Rd.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,785 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,079 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:	66.2%	13.5%	20.3%	93.35%
Medium Trucks:	77.1%	5.3%	17.6%	4.65%
Heavy Trucks:	86.3%	1.5%	12.2%	1.99%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	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	2.75	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.28	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-13.96	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:	70.3	67.8	66.9	63.9	71.1	71.5
Medium Trucks:	68.3	66.4	60.8	61.3	68.7	68.9
Heavy Trucks:	69.5	68.0	56.4	60.8	68.9	68.9
Vehicle Noise:	74.2	72.2	68.1	67.0	74.4	74.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	256	551	1,187
CNEL:	124	266	574	1,237

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Pine Av.
Road Segment: w/o W. Preserve Loop
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,411 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,741 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:	66.2%	13.5%	20.3%	93.29%
Medium Trucks:	77.1%	5.3%	17.6%	4.64%
Heavy Trucks:	86.3%	1.5%	12.2%	2.07%

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:	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	0.27	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-12.77	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-16.27	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	65.3	64.4	61.4	68.6	69.0
Medium Trucks:	65.8	63.9	58.3	58.8	66.2	66.4
Heavy Trucks:	67.1	65.7	54.1	58.5	66.6	66.6
Vehicle Noise:	71.8	69.8	65.7	64.5	72.0	72.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	379	817
CNEL:	85	183	395	851

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Pine Av.
Road Segment: w/o E. Preserve Loop
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,639 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,764 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:	66.2%	13.5%	20.3%	93.34%
Medium Trucks:	77.1%	5.3%	17.6%	4.66%
Heavy Trucks:	86.3%	1.5%	12.2%	2.01%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	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	2.28	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.74	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.40	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	67.3	66.4	63.4	70.6	71.0
Medium Trucks:	67.9	66.0	60.4	60.8	68.2	68.4
Heavy Trucks:	69.0	67.6	56.0	60.3	68.4	68.5
Vehicle Noise:	73.8	71.8	67.7	66.5	74.0	74.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	111	238	513	1,106
CNEL:	115	248	535	1,152

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Pine Av.
Road Segment: w/o Hellman Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,488 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,749 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:	66.2%	13.5%	20.3%	93.34%
Medium Trucks:	77.1%	5.3%	17.6%	4.66%
Heavy Trucks:	86.3%	1.5%	12.2%	2.01%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	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	2.25	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.77	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.42	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:	69.9	67.3	66.4	63.4	70.6	71.0
Medium Trucks:	67.9	65.9	60.3	60.8	68.2	68.4
Heavy Trucks:	69.0	67.6	56.0	60.3	68.4	68.5
Vehicle Noise:	73.7	71.8	67.7	66.5	74.0	74.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	237	512	1,102
CNEL:	115	247	533	1,148

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Schleisman Rd.
Road Segment: w/o Archibald Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,565 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,956 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:	66.2%	13.5%	20.3%	93.33%
Medium Trucks:	77.1%	5.3%	17.6%	4.67%
Heavy Trucks:	86.3%	1.5%	12.2%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.57	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-10.44	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.11	-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	65.4	64.5	61.5	68.7	69.1
Medium Trucks:	66.0	64.0	58.4	58.9	66.3	66.5
Heavy Trucks:	67.1	65.7	54.1	58.4	66.5	66.6
Vehicle Noise:	71.9	69.9	65.8	64.6	72.1	72.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	105	225	485	1,045
CNEL:	109	235	505	1,089

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project
Road Name: Central Av.
Road Segment: n/o El Prado Rd.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,600 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,160 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	2.86	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.12	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.05	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:	70.5	67.9	67.0	64.0	71.2	71.6
Medium Trucks:	68.5	66.6	61.0	61.4	68.8	69.0
Heavy Trucks:	69.4	67.9	56.4	60.7	68.8	68.8
Vehicle Noise:	74.3	72.3	68.3	67.0	74.5	74.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	120	259	557	1,200
CNEL:	125	269	580	1,251

Thursday, May 02, 2019

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project
Road Name: Central Av.
Road Segment: s/o El Prado Rd.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,909 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,791 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:	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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	45.869
Medium Trucks:	45.676
Heavy Trucks:	45.695

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.65	0.46	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.33	0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-13.26	0.48	-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	68.8	67.9	64.9	72.1	72.5
Medium Trucks:	69.4	67.5	61.9	62.3	69.7	69.9
Heavy Trucks:	70.3	68.8	57.3	61.6	69.7	69.8
Vehicle Noise:	75.2	73.2	69.2	68.0	75.4	75.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	138	297	640	1,379
CNEL:	144	310	667	1,438

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project
Road Name: El Prado Rd.
Road Segment: n/o Kimball Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,269 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,727 vehicles
Vehicle Speed:	45 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.22	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	79.45	-10.76	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-14.69	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:	70.8	68.2	67.3	64.3	71.5	71.9
Medium Trucks:	68.8	66.9	61.3	61.7	69.1	69.3
Heavy Trucks:	69.7	68.2	56.7	61.0	69.1	69.1
Vehicle Noise:	74.6	72.6	68.6	67.3	74.8	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	428	921
CNEL:	96	207	446	960

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project
Road Name: Euclid Av.
Road Segment: n/o Walnut Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,918 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,492 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	-10.56	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-14.49	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:	75.4	72.8	72.0	69.0	76.1	76.6
Medium Trucks:	73.1	71.2	65.6	66.0	73.4	73.6
Heavy Trucks:	73.2	71.7	60.2	64.5	72.6	72.7
Vehicle Noise:	78.8	76.8	73.1	71.7	79.1	79.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	340	732	1,577	3,397
CNEL:	355	764	1,647	3,548

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: n/o Riverside Dr.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,681 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,968 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	1.72	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-11.26	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-15.20	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:	74.7	72.1	71.3	68.3	75.4	75.9
Medium Trucks:	72.4	70.5	64.9	65.3	72.7	72.9
Heavy Trucks:	72.5	71.0	59.5	63.8	71.9	71.9
Vehicle Noise:	78.1	76.0	72.4	71.0	78.4	78.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	305	657	1,415	3,048
CNEL:	318	686	1,478	3,184

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: n/o Chino Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,908 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,991 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	-11.23	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-15.16	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:	74.8	72.2	71.3	68.3	75.5	75.9
Medium Trucks:	72.4	70.5	64.9	65.4	72.8	73.0
Heavy Trucks:	72.5	71.1	59.5	63.8	71.9	72.0
Vehicle Noise:	78.1	76.1	72.4	71.0	78.4	78.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	306	660	1,422	3,063
CNEL:	320	689	1,485	3,200

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: n/o Schaefer Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,723 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,272 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	2.14	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.84	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-14.77	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:	75.1	72.6	71.7	68.7	75.9	76.3
Medium Trucks:	72.8	70.9	65.3	65.7	73.2	73.3
Heavy Trucks:	72.9	71.5	59.9	64.2	72.3	72.4
Vehicle Noise:	78.5	76.5	72.8	71.4	78.8	79.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	325	701	1,510	3,253
CNEL:	340	732	1,577	3,398

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: n/o Edison Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,053 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,505 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	2.44	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.54	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-14.47	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:	75.4	72.9	72.0	69.0	76.2	76.6
Medium Trucks:	73.1	71.2	65.6	66.0	73.5	73.6
Heavy Trucks:	73.2	71.8	60.2	64.5	72.6	72.7
Vehicle Noise:	78.8	76.8	73.1	71.7	79.1	79.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	341	734	1,581	3,405
CNEL:	356	766	1,651	3,557

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: n/o Eucalyptus Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,935 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,294 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	2.17	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.81	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-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:	75.2	72.6	71.7	68.7	75.9	76.3
Medium Trucks:	72.9	70.9	65.3	65.8	73.2	73.4
Heavy Trucks:	72.9	71.5	59.9	64.2	72.3	72.4
Vehicle Noise:	78.6	76.5	72.8	71.4	78.8	79.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	327	704	1,516	3,267
CNEL:	341	735	1,584	3,412

Thursday, May 02, 2019

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: n/o Merrill Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,593 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,659 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	2.63	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.35	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-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:	75.6	73.1	72.2	69.2	76.3	76.8
Medium Trucks:	73.3	71.4	65.8	66.2	73.6	73.8
Heavy Trucks:	73.4	71.9	60.4	64.7	72.8	72.9
Vehicle Noise:	79.0	77.0	73.3	71.9	79.3	79.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	350	755	1,627	3,504
CNEL:	366	789	1,699	3,661

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: s/o Merrill Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,987 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,499 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	2.43	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.55	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-14.48	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:	75.4	72.9	72.0	69.0	76.1	76.6
Medium Trucks:	73.1	71.2	65.6	66.0	73.4	73.6
Heavy Trucks:	73.2	71.7	60.2	64.5	72.6	72.7
Vehicle Noise:	78.8	76.8	73.1	71.7	79.1	79.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	340	733	1,579	3,401
CNEL:	355	765	1,649	3,553

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: n/o Kimball Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,574 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,457 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	2.38	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.60	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-14.53	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:	75.4	72.8	71.9	68.9	76.1	76.5
Medium Trucks:	73.1	71.1	65.5	66.0	73.4	73.6
Heavy Trucks:	73.1	71.7	60.1	64.4	72.5	72.6
Vehicle Noise:	78.8	76.7	73.0	71.6	79.1	79.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	337	727	1,566	3,374
CNEL:	352	759	1,636	3,525

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project
Road Name: Euclid Av.
Road Segment: n/o Bickmore Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,353 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,235 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	0.49	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-12.49	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-16.43	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	70.9	70.0	67.0	74.2	74.6
Medium Trucks:	71.2	69.3	63.7	64.1	71.5	71.7
Heavy Trucks:	71.2	69.8	58.2	62.6	70.7	70.7
Vehicle Noise:	76.9	74.8	71.1	69.7	77.2	77.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	252	544	1,171	2,523
CNEL:	264	568	1,223	2,635

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project
Road Name: Archibald Av.
Road Segment: n/o Limonite Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,340 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,934 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	1.67	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-11.31	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-15.25	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:	74.7	72.1	71.2	68.2	75.4	75.8
Medium Trucks:	72.4	70.4	64.8	65.3	72.7	72.9
Heavy Trucks:	72.4	71.0	59.4	63.7	71.8	71.9
Vehicle Noise:	78.1	76.0	72.3	70.9	78.3	78.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	302	652	1,404	3,024
CNEL:	316	681	1,466	3,159

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project
Road Name: Archibald Av.
Road Segment: s/o Limonite Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,324 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,732 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	2.23	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-10.75	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.68	-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:	67.6	65.1	64.2	61.2	68.4	68.8
Medium Trucks:	65.7	63.7	58.1	58.6	66.0	66.2
Heavy Trucks:	66.5	65.1	53.5	57.8	65.9	66.0
Vehicle Noise:	71.5	69.4	65.4	64.2	71.7	72.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	212	457	984
CNEL:	103	221	476	1,025

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project
Road Name: Archibald Av.
Road Segment: s/o Schleisman Rd.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,024 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,402 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	1.67	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-11.31	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-15.24	-1.84	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	64.5	63.6	60.6	67.8	68.2
Medium Trucks:	65.1	63.2	57.6	58.0	65.4	65.6
Heavy Trucks:	66.0	64.5	53.0	57.3	65.4	65.4
Vehicle Noise:	70.9	68.9	64.9	63.7	71.1	71.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	195	419	903
CNEL:	94	203	437	941

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project | Project Name: MCH
Road Name: Kimball Av. | Job Number: 10351
Road Segment: w/o Mountain Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,661 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,166 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	0.77	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.22	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.15	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	68.5	67.6	64.6	71.8	72.2
Medium Trucks:	68.9	67.0	61.4	61.8	69.2	69.4
Heavy Trucks:	69.3	67.9	56.3	60.7	68.8	68.8
Vehicle Noise:	74.6	72.6	68.8	67.4	74.9	75.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	201	433	932
CNEL:	97	210	451	973

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project | Project Name: MCH
Road Name: Kimball Av. | Job Number: 10351
Road Segment: w/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,434 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,443 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	1.29	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.69	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.63	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:	71.6	69.0	68.1	65.1	72.3	72.7
Medium Trucks:	69.4	67.5	61.9	62.3	69.7	69.9
Heavy Trucks:	69.9	68.4	56.8	61.2	69.3	69.3
Vehicle Noise:	75.2	73.1	69.3	68.0	75.4	75.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	218	469	1,010
CNEL:	105	227	489	1,054

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project | Project Name: MCH
Road Name: Kimball Av. | Job Number: 10351
Road Segment: e/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,429 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,043 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.51	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-12.47	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.41	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	67.9	67.1	64.1	71.2	71.7
Medium Trucks:	68.4	66.4	60.8	61.3	68.7	68.9
Heavy Trucks:	68.8	67.4	55.8	60.1	68.2	68.3
Vehicle Noise:	74.1	72.1	68.2	66.9	74.4	74.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	206	445	958
CNEL:	100	215	464	1,000

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project | Project Name: MCH
Road Name: Kimball Av. | Job Number: 10351
Road Segment: w/o Rincon Meadows Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,291 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,129 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.69	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-12.29	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.23	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	68.1	67.2	64.2	71.4	71.8
Medium Trucks:	68.6	66.6	61.0	61.5	68.9	69.1
Heavy Trucks:	69.0	67.6	56.0	60.3	68.4	68.5
Vehicle Noise:	74.3	72.3	68.4	67.1	74.5	74.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	212	457	985
CNEL:	103	221	477	1,028

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project
Road Name: Kimball Av.
Road Segment: e/o Rincon Meadows Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,432 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,043 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.51	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-12.47	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.40	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	67.9	67.1	64.1	71.2	71.7
Medium Trucks:	68.4	66.4	60.8	61.3	68.7	68.9
Heavy Trucks:	68.8	67.4	55.8	60.1	68.2	68.3
Vehicle Noise:	74.1	72.1	68.2	66.9	74.4	74.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	206	445	958
CNEL:	100	215	464	1,000

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project
Road Name: Kimball Av.
Road Segment: e/o Mill Creek Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,591 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,859 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.10	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-12.88	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.81	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	67.5	66.6	63.6	70.8	71.3
Medium Trucks:	68.0	66.0	60.4	60.9	68.3	68.5
Heavy Trucks:	68.4	67.0	55.4	59.7	67.8	67.9
Vehicle Noise:	73.7	71.7	67.8	66.5	74.0	74.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	194	418	900
CNEL:	94	202	436	939

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project
Road Name: Kimball Av.
Road Segment: e/o Main St.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,491 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,749 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.16	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.15	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-17.08	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	67.3	66.4	63.4	70.6	71.0
Medium Trucks:	67.7	65.8	60.2	60.6	68.0	68.2
Heavy Trucks:	68.1	66.7	55.1	59.5	67.6	67.6
Vehicle Noise:	73.4	71.4	67.6	66.2	73.7	74.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	186	401	864
CNEL:	90	194	419	902

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project
Road Name: Kimball Av.
Road Segment: e/o Flight Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,790 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,479 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.89	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.87	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-17.81	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	66.5	65.7	62.7	69.8	70.3
Medium Trucks:	67.0	65.0	59.4	59.9	67.3	67.5
Heavy Trucks:	67.4	66.0	54.4	58.7	66.8	66.9
Vehicle Noise:	72.7	70.7	66.8	65.5	73.0	73.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	359	773
CNEL:	81	174	374	806

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project | Project Name: MCH
Road Name: Limonite Av. | Job Number: 10351
Road Segment: w/o Archibald Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	0 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	78 feet

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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	-42.59	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-55.57	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-59.51	-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:	24.6	22.0	21.1	18.1	25.3	25.7
Medium Trucks:	22.4	20.5	14.9	15.3	22.7	22.9
Heavy Trucks:	22.8	21.4	9.8	14.1	22.2	22.3
Vehicle Noise:	28.1	26.1	22.3	20.9	28.4	28.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	1	1
CNEL:	0	0	1	1

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project | Project Name: MCH
Road Name: Limonite Av. | Job Number: 10351
Road Segment: e/o Archibald Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,105 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,211 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	0.85	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-12.13	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-16.06	-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:	68.0	65.4	64.5	61.5	68.7	69.1
Medium Trucks:	65.8	63.9	58.3	58.7	66.1	66.3
Heavy Trucks:	66.3	64.8	53.3	57.6	65.7	65.8
Vehicle Noise:	71.6	69.5	65.7	64.4	71.8	72.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	217	468	1,008
CNEL:	105	227	488	1,051

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project | Project Name: MCH
Road Name: Pine Av. | Job Number: 10351
Road Segment: w/o El Prado Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	-27.82	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-40.80	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-44.74	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:	39.8	37.2	36.3	33.3	40.5	40.9
Medium Trucks:	37.8	35.9	30.3	30.7	38.1	38.3
Heavy Trucks:	38.7	37.2	25.7	30.0	38.1	38.2
Vehicle Noise:	43.6	41.6	37.6	36.4	43.8	44.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	1	2	5	11
CNEL:	1	2	5	11

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project | Project Name: MCH
Road Name: Pine Av. | Job Number: 10351
Road Segment: w/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,772 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	777 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	-3.23	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-16.21	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-20.14	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:	64.4	61.8	60.9	57.9	65.1	65.5
Medium Trucks:	62.4	60.5	54.9	55.3	62.7	62.9
Heavy Trucks:	63.3	61.8	50.3	54.6	62.7	62.8
Vehicle Noise:	68.2	66.2	62.2	61.0	68.4	68.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	219	471
CNEL:	49	106	228	491

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project
Road Name: Pine Av.
Road Segment: e/o Euclid Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,876 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,888 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	2.47	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.51	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.44	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	67.5	66.6	63.6	70.8	71.2
Medium Trucks:	68.1	66.2	60.6	61.0	68.4	68.6
Heavy Trucks:	69.0	67.5	56.0	60.3	68.4	68.5
Vehicle Noise:	73.9	71.9	67.9	66.7	74.1	74.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	243	524	1,130
CNEL:	118	254	547	1,178

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project
Road Name: Pine Av.
Road Segment: w/o Chino Corona Rd.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,911 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,291 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	3.04	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.94	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-13.88	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:	70.6	68.1	67.2	64.2	71.4	71.8
Medium Trucks:	68.7	66.7	61.1	61.6	69.0	69.2
Heavy Trucks:	69.5	68.1	56.5	60.9	69.0	69.0
Vehicle Noise:	74.5	72.5	68.4	67.2	74.7	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	266	572	1,233
CNEL:	128	277	596	1,285

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project
Road Name: Pine Av.
Road Segment: w/o W. Preserve Loop
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,578 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,858 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	0.56	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-12.43	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-16.36	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	65.6	64.7	61.7	68.9	69.3
Medium Trucks:	66.2	64.3	58.7	59.1	66.5	66.7
Heavy Trucks:	67.1	65.6	54.0	58.4	66.5	66.5
Vehicle Noise:	72.0	70.0	65.9	64.7	72.2	72.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	391	842
CNEL:	88	189	407	878

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project
Road Name: Pine Av.
Road Segment: w/o E. Preserve Loop
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,018 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,002 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	2.64	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.34	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.28	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:	70.2	67.7	66.8	63.8	71.0	71.4
Medium Trucks:	68.3	66.3	60.7	61.2	68.6	68.8
Heavy Trucks:	69.1	67.7	56.1	60.5	68.6	68.6
Vehicle Noise:	74.1	72.1	68.0	66.8	74.3	74.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	250	538	1,160
CNEL:	121	260	561	1,208

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project | Project Name: MCH
Road Name: Pine Av. | Job Number: 10351
Road Segment: w/o Hellman Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,448 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,945 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	2.56	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.43	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.36	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:	70.2	67.6	66.7	63.7	70.9	71.3
Medium Trucks:	68.2	66.3	60.7	61.1	68.5	68.7
Heavy Trucks:	69.1	67.6	56.0	60.4	68.5	68.5
Vehicle Noise:	74.0	72.0	67.9	66.7	74.2	74.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	247	531	1,145
CNEL:	119	257	554	1,193

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY Without Project | Project Name: MCH
Road Name: Schleisman Rd. | Job Number: 10351
Road Segment: w/o Archibald Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,944 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,194 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	-10.07	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.01	-1.84	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	65.7	64.8	61.8	69.0	69.5
Medium Trucks:	66.3	64.4	58.8	59.2	66.7	66.8
Heavy Trucks:	67.2	65.8	54.2	58.5	66.6	66.7
Vehicle Noise:	72.1	70.1	66.1	64.9	72.4	72.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	235	507	1,092
CNEL:	114	245	528	1,138

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project | Project Name: MCH
Road Name: Central Av. | Job Number: 10351
Road Segment: n/o El Prado Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,954 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,195 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:	66.2%	13.5%	20.3%	93.48%
Medium Trucks:	77.1%	5.3%	17.6%	4.64%
Heavy Trucks:	86.3%	1.5%	12.2%	1.88%

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:	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	2.91	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.12	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.05	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:	70.5	67.9	67.0	64.0	71.2	71.7
Medium Trucks:	68.5	66.6	61.0	61.4	68.8	69.0
Heavy Trucks:	69.4	67.9	56.4	60.7	68.8	68.8
Vehicle Noise:	74.3	72.3	68.3	67.1	74.5	74.8

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	1,255

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project | Project Name: MCH
Road Name: Central Av. | Job Number: 10351
Road Segment: s/o El Prado Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,873 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,887 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:	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:	66.2%	13.5%	20.3%	93.04%
Medium Trucks:	77.1%	5.3%	17.6%	4.80%
Heavy Trucks:	86.3%	1.5%	12.2%	2.16%

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:	45.869
Medium Trucks:	45.676
Heavy Trucks:	45.695

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.75	0.46	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.13	0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-12.59	0.48	-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:	71.5	68.9	68.0	65.0	72.2	72.6
Medium Trucks:	69.6	67.7	62.1	62.5	69.9	70.1
Heavy Trucks:	70.9	69.5	57.9	62.3	70.4	70.4
Vehicle Noise:	75.5	73.5	69.3	68.2	75.7	76.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	144	310	669	1,440
CNEL:	150	323	696	1,499

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project
Road Name: El Prado Rd.
Road Segment: n/o Kimball Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,653 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,865 vehicles
Vehicle Speed:	45 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:	66.2%	13.5%	20.3%	93.15%
Medium Trucks:	77.1%	5.3%	17.6%	4.71%
Heavy Trucks:	86.3%	1.5%	12.2%	2.14%

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:	68.46	2.43	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	79.45	-10.54	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-13.96	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	68.4	67.5	64.5	71.7	72.1
Medium Trucks:	69.0	67.1	61.5	61.9	69.3	69.5
Heavy Trucks:	70.4	69.0	57.4	61.7	69.8	69.9
Vehicle Noise:	75.0	73.0	68.8	67.7	75.2	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	210	452	973
CNEL:	101	218	470	1,013

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project
Road Name: Euclid Av.
Road Segment: n/o Walnut Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,531 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,553 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:	66.2%	13.5%	20.3%	92.59%
Medium Trucks:	77.1%	5.3%	17.6%	5.00%
Heavy Trucks:	86.3%	1.5%	12.2%	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:	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	2.46	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.21	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.39	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:	75.5	72.9	72.0	69.0	76.2	76.6
Medium Trucks:	73.5	71.5	65.9	66.4	73.8	74.0
Heavy Trucks:	74.3	72.8	61.3	65.6	73.7	73.8
Vehicle Noise:	79.2	77.2	73.2	72.0	79.5	79.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	360	775	1,671	3,600
CNEL:	375	808	1,742	3,752

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project
Road Name: Euclid Av.
Road Segment: n/o Riverside Dr.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,326 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,033 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:	66.2%	13.5%	20.3%	92.46%
Medium Trucks:	77.1%	5.3%	17.6%	5.05%
Heavy Trucks:	86.3%	1.5%	12.2%	2.49%

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	1.77	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.86	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.93	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:	74.8	72.2	71.3	68.3	75.5	75.9
Medium Trucks:	72.8	70.9	65.3	65.7	73.1	73.3
Heavy Trucks:	73.7	72.3	60.7	65.1	73.1	73.2
Vehicle Noise:	78.6	76.6	72.6	71.4	78.8	79.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	326	703	1,514	3,263
CNEL:	340	733	1,578	3,400

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project
Road Name: Euclid Av.
Road Segment: n/o Chino Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,662 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,066 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:	66.2%	13.5%	20.3%	92.49%
Medium Trucks:	77.1%	5.3%	17.6%	5.03%
Heavy Trucks:	86.3%	1.5%	12.2%	2.48%

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:	71.78	1.82	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.83	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-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:	74.8	72.2	71.3	68.3	75.5	76.0
Medium Trucks:	72.8	70.9	65.3	65.8	73.2	73.4
Heavy Trucks:	73.8	72.3	60.7	65.1	73.2	73.2
Vehicle Noise:	78.7	76.6	72.6	71.4	78.9	79.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	328	707	1,523	3,282
CNEL:	342	737	1,587	3,420

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: n/o Schaefer Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,515 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,352 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:	66.2%	13.5%	20.3%	92.58%
Medium Trucks:	77.1%	5.3%	17.6%	5.00%
Heavy Trucks:	86.3%	1.5%	12.2%	2.42%

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:	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	2.21	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.47	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.61	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:	75.2	72.6	71.7	68.7	75.9	76.3
Medium Trucks:	73.2	71.3	65.7	66.1	73.5	73.7
Heavy Trucks:	74.1	72.6	61.0	65.4	73.5	73.5
Vehicle Noise:	79.0	77.0	73.0	71.8	79.2	79.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	347	747	1,609	3,466
CNEL:	361	778	1,677	3,613

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: n/o Edison Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,847 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,585 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:	66.2%	13.5%	20.3%	92.63%
Medium Trucks:	77.1%	5.3%	17.6%	4.98%
Heavy Trucks:	86.3%	1.5%	12.2%	2.39%

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:	71.78	2.50	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.20	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.38	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:	75.5	72.9	72.0	69.0	76.2	76.6
Medium Trucks:	73.5	71.6	66.0	66.4	73.8	74.0
Heavy Trucks:	74.3	72.9	61.3	65.6	73.7	73.8
Vehicle Noise:	79.3	77.3	73.3	72.0	79.5	79.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	361	779	1,678	3,614
CNEL:	377	812	1,749	3,768

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: n/o Eucalyptus Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,836 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,384 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:	66.2%	13.5%	20.3%	92.61%
Medium Trucks:	77.1%	5.3%	17.6%	4.98%
Heavy Trucks:	86.3%	1.5%	12.2%	2.41%

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:	71.78	2.25	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.44	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.59	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:	75.3	72.7	71.8	68.8	76.0	76.4
Medium Trucks:	73.2	71.3	65.7	66.1	73.6	73.7
Heavy Trucks:	74.1	72.6	61.1	65.4	73.5	73.6
Vehicle Noise:	79.0	77.0	73.0	71.8	79.3	79.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	348	751	1,617	3,484
CNEL:	363	782	1,685	3,631

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: n/o Merrill Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,570 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,757 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:	66.2%	13.5%	20.3%	92.70%
Medium Trucks:	77.1%	5.3%	17.6%	4.94%
Heavy Trucks:	86.3%	1.5%	12.2%	2.36%

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:	71.78	2.71	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.02	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.23	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	73.1	72.2	69.2	76.4	76.8
Medium Trucks:	73.7	71.7	66.1	66.6	74.0	74.2
Heavy Trucks:	74.4	73.0	61.4	65.8	73.8	73.9
Vehicle Noise:	79.5	77.4	73.5	72.2	79.7	80.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	372	801	1,725	3,716
CNEL:	387	835	1,799	3,875

Thursday, May 02, 2019

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project
Road Name: Euclid Av.
Road Segment: s/o Merrill Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,035 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,603 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:	66.2%	13.5%	20.3%	92.68%
Medium Trucks:	77.1%	5.3%	17.6%	4.94%
Heavy Trucks:	86.3%	1.5%	12.2%	2.37%

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:	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	2.53	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.20	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.39	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:	75.5	72.9	72.1	69.1	76.2	76.7
Medium Trucks:	73.5	71.5	65.9	66.4	73.8	74.0
Heavy Trucks:	74.3	72.8	61.3	65.6	73.7	73.8
Vehicle Noise:	79.3	77.3	73.3	72.0	79.5	79.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	362	780	1,680	3,619
CNEL:	377	813	1,751	3,773

Thursday, May 02, 2019

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project
Road Name: Euclid Av.
Road Segment: n/o Kimball Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,621 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,562 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:	66.2%	13.5%	20.3%	92.68%
Medium Trucks:	77.1%	5.3%	17.6%	4.94%
Heavy Trucks:	86.3%	1.5%	12.2%	2.38%

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	2.48	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.25	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.43	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:	75.5	72.9	72.0	69.0	76.2	76.6
Medium Trucks:	73.4	71.5	65.9	66.3	73.7	73.9
Heavy Trucks:	74.2	72.8	61.2	65.6	73.7	73.7
Vehicle Noise:	79.2	77.2	73.2	72.0	79.5	79.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	359	774	1,668	3,593
CNEL:	375	807	1,738	3,745

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project
Road Name: Euclid Av.
Road Segment: n/o Bickmore Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,421 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,342 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:	66.2%	13.5%	20.3%	92.48%
Medium Trucks:	77.1%	5.3%	17.6%	5.00%
Heavy Trucks:	86.3%	1.5%	12.2%	2.53%

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:	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	0.65	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-12.03	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-14.99	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:	73.6	71.1	70.2	67.2	74.4	74.8
Medium Trucks:	71.6	69.7	64.1	64.6	72.0	72.2
Heavy Trucks:	72.7	71.2	59.7	64.0	72.1	72.2
Vehicle Noise:	77.5	75.5	71.4	70.2	77.7	78.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	275	592	1,276	2,749
CNEL:	286	617	1,329	2,864

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project
Road Name: Archibald Av.
Road Segment: n/o Limonite Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,511 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,951 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:	66.2%	13.5%	20.3%	93.44%
Medium Trucks:	77.1%	5.3%	17.6%	4.67%
Heavy Trucks:	86.3%	1.5%	12.2%	1.89%

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	1.70	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-11.32	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-15.25	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:	74.7	72.1	71.2	68.2	75.4	75.8
Medium Trucks:	72.4	70.4	64.8	65.3	72.7	72.9
Heavy Trucks:	72.4	71.0	59.4	63.7	71.8	71.9
Vehicle Noise:	78.1	76.0	72.3	70.9	78.4	78.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	303	653	1,406	3,030
CNEL:	317	682	1,469	3,165

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project
Road Name: Archibald Av.
Road Segment: s/o Limonite Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,057 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,806 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:	66.2%	13.5%	20.3%	93.37%
Medium Trucks:	77.1%	5.3%	17.6%	4.66%
Heavy Trucks:	86.3%	1.5%	12.2%	1.97%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	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	2.35	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-10.68	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.42	-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	65.2	64.3	61.3	68.5	68.9
Medium Trucks:	65.7	63.8	58.2	58.7	66.1	66.2
Heavy Trucks:	66.8	65.4	53.8	58.1	66.2	66.3
Vehicle Noise:	71.6	69.6	65.5	64.4	71.8	72.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	217	467	1,006
CNEL:	105	226	486	1,048

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project
Road Name: Archibald Av.
Road Segment: s/o Schleisman Rd.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,178 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,418 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:	66.2%	13.5%	20.3%	93.35%
Medium Trucks:	77.1%	5.3%	17.6%	4.71%
Heavy Trucks:	86.3%	1.5%	12.2%	1.95%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.70	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-11.28	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-15.11	-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	64.5	63.6	60.6	67.8	68.2
Medium Trucks:	65.1	63.2	57.6	58.0	65.5	65.6
Heavy Trucks:	66.1	64.7	53.1	57.4	65.5	65.6
Vehicle Noise:	71.0	69.0	64.9	63.7	71.2	71.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	423	911
CNEL:	95	204	440	949

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project
Road Name: Kimball Av.
Road Segment: w/o Mountain Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,859 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,286 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:	66.2%	13.5%	20.3%	93.03%
Medium Trucks:	77.1%	5.3%	17.6%	4.75%
Heavy Trucks:	86.3%	1.5%	12.2%	2.22%

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:	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	-11.94	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.24	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:	71.3	68.7	67.8	64.8	72.0	72.4
Medium Trucks:	69.2	67.3	61.7	62.1	69.5	69.7
Heavy Trucks:	70.2	68.8	57.2	61.6	69.7	69.7
Vehicle Noise:	75.1	73.1	69.0	67.8	75.3	75.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	214	461	993
CNEL:	103	223	480	1,035

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project
Road Name: Kimball Av.
Road Segment: w/o Euclid Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,497 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,450 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:	66.2%	13.5%	20.3%	93.25%
Medium Trucks:	77.1%	5.3%	17.6%	4.75%
Heavy Trucks:	86.3%	1.5%	12.2%	1.99%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.29	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.63	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.41	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.6	69.0	68.1	65.1	72.3	72.7
Medium Trucks:	69.5	67.6	62.0	62.4	69.8	70.0
Heavy Trucks:	70.1	68.6	57.1	61.4	69.5	69.6
Vehicle Noise:	75.2	73.2	69.3	68.0	75.5	75.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	102	220	474	1,021
CNEL:	107	229	494	1,065

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project
Road Name: Kimball Av.
Road Segment: e/o Euclid Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,520 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,052 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.2%	13.5%	20.3%	93.43%
Medium Trucks:	77.1%	5.3%	17.6%	4.67%
Heavy Trucks:	86.3%	1.5%	12.2%	1.89%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.53	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-12.48	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.41	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	68.0	67.1	64.1	71.3	71.7
Medium Trucks:	68.4	66.4	60.8	61.3	68.7	68.9
Heavy Trucks:	68.8	67.4	55.8	60.1	68.2	68.3
Vehicle Noise:	74.1	72.1	68.3	66.9	74.4	74.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	207	445	959
CNEL:	100	216	465	1,001

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project
Road Name: Kimball Av.
Road Segment: w/o Rincon Meadows Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,382 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,138 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.2%	13.5%	20.3%	93.43%
Medium Trucks:	77.1%	5.3%	17.6%	4.68%
Heavy Trucks:	86.3%	1.5%	12.2%	1.89%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.71	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-12.30	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.23	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	68.1	67.3	64.3	71.4	71.9
Medium Trucks:	68.5	66.6	61.0	61.5	68.9	69.1
Heavy Trucks:	69.0	67.6	56.0	60.3	68.4	68.5
Vehicle Noise:	74.3	72.3	68.4	67.1	74.6	74.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	212	458	986
CNEL:	103	222	478	1,029

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project
Road Name: Kimball Av.
Road Segment: e/o Rincon Meadows Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,523 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,052 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.2%	13.5%	20.3%	93.43%
Medium Trucks:	77.1%	5.3%	17.6%	4.67%
Heavy Trucks:	86.3%	1.5%	12.2%	1.89%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.53	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-12.48	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.40	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	68.0	67.1	64.1	71.3	71.7
Medium Trucks:	68.4	66.4	60.8	61.3	68.7	68.9
Heavy Trucks:	68.8	67.4	55.8	60.1	68.2	68.3
Vehicle Noise:	74.1	72.1	68.3	66.9	74.4	74.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	207	445	960
CNEL:	100	216	465	1,001

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project
Road Name: Kimball Av.
Road Segment: e/o Mill Creek Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,680 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,868 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.2%	13.5%	20.3%	93.44%
Medium Trucks:	77.1%	5.3%	17.6%	4.67%
Heavy Trucks:	86.3%	1.5%	12.2%	1.89%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.12	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-12.89	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.81	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	67.6	66.7	63.7	70.8	71.3
Medium Trucks:	68.0	66.0	60.4	60.9	68.3	68.5
Heavy Trucks:	68.4	67.0	55.4	59.7	67.8	67.9
Vehicle Noise:	73.7	71.7	67.8	66.5	74.0	74.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	194	418	901
CNEL:	94	203	436	940

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project | Project Name: MCH
Road Name: Kimball Av. | Job Number: 10351
Road Segment: e/o Main St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,579 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,758 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.2%	13.5%	20.3%	93.44%
Medium Trucks:	77.1%	5.3%	17.6%	4.67%
Heavy Trucks:	86.3%	1.5%	12.2%	1.89%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.14	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.15	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-17.08	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	67.3	66.4	63.4	70.6	71.0
Medium Trucks:	67.7	65.8	60.2	60.6	68.0	68.2
Heavy Trucks:	68.1	66.7	55.1	59.5	67.6	67.6
Vehicle Noise:	73.4	71.4	67.6	66.3	73.7	74.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	186	402	865
CNEL:	90	195	419	903

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project | Project Name: MCH
Road Name: Kimball Av. | Job Number: 10351
Road Segment: e/o Flight Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,803 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,480 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.2%	13.5%	20.3%	93.41%
Medium Trucks:	77.1%	5.3%	17.6%	4.69%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.89	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.88	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-17.81	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	66.5	65.7	62.7	69.8	70.3
Medium Trucks:	67.0	65.0	59.4	59.9	67.3	67.5
Heavy Trucks:	67.4	66.0	54.4	58.7	66.8	66.9
Vehicle Noise:	72.7	70.7	66.8	65.5	73.0	73.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	359	773
CNEL:	81	174	374	806

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project | Project Name: MCH
Road Name: Limonite Av. | Job Number: 10351
Road Segment: w/o Archibald Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	0 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	78 feet

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:	66.2%	13.5%	20.3%	93.41%
Medium Trucks:	77.1%	5.3%	17.6%	4.69%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	-42.59	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-55.58	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-59.51	-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:	24.6	22.0	21.1	18.1	25.3	25.7
Medium Trucks:	22.4	20.5	14.9	15.3	22.7	22.9
Heavy Trucks:	22.8	21.4	9.8	14.1	22.2	22.3
Vehicle Noise:	28.1	26.1	22.3	20.9	28.4	28.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	1	1
CNEL:	0	0	1	1

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project | Project Name: MCH
Road Name: Limonite Av. | Job Number: 10351
Road Segment: e/o Archibald Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,688 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,269 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:	66.2%	13.5%	20.3%	93.32%
Medium Trucks:	77.1%	5.3%	17.6%	4.68%
Heavy Trucks:	86.3%	1.5%	12.2%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.96	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-12.03	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-15.73	-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:	68.1	65.5	64.6	61.6	68.8	69.2
Medium Trucks:	65.9	64.0	58.4	58.8	66.2	66.4
Heavy Trucks:	66.6	65.2	53.6	57.9	66.0	66.1
Vehicle Noise:	71.7	69.7	65.8	64.5	72.0	72.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	222	479	1,032
CNEL:	108	232	500	1,077

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project
Road Name: Pine Av.
Road Segment: w/o El Prado Rd.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3 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:	66.2%	13.5%	20.3%	93.41%
Medium Trucks:	77.1%	5.3%	17.6%	4.69%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	-27.82	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-40.81	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-44.74	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:	39.8	37.2	36.3	33.3	40.5	40.9
Medium Trucks:	37.8	35.9	30.3	30.7	38.1	38.3
Heavy Trucks:	38.7	37.2	25.7	30.0	38.1	38.2
Vehicle Noise:	43.6	41.6	37.6	36.4	43.8	44.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	1	2	5	11
CNEL:	1	2	5	11

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project
Road Name: Pine Av.
Road Segment: w/o Euclid Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,446 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	845 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:	66.2%	13.5%	20.3%	92.46%
Medium Trucks:	77.1%	5.3%	17.6%	4.94%
Heavy Trucks:	86.3%	1.5%	12.2%	2.60%

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	-2.91	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-15.64	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-18.42	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:	64.7	62.1	61.2	58.2	65.4	65.8
Medium Trucks:	63.0	61.1	55.5	55.9	63.3	63.5
Heavy Trucks:	65.0	63.6	52.0	56.3	64.4	64.5
Vehicle Noise:	69.1	67.1	62.6	61.7	69.2	69.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	115	247	533
CNEL:	55	119	257	554

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project
Road Name: Pine Av.
Road Segment: e/o Euclid Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,889 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,989 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:	66.2%	13.5%	20.3%	93.35%
Medium Trucks:	77.1%	5.3%	17.6%	4.65%
Heavy Trucks:	86.3%	1.5%	12.2%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	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	2.62	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.40	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.08	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:	70.2	67.6	66.7	63.7	70.9	71.4
Medium Trucks:	68.2	66.3	60.7	61.1	68.5	68.7
Heavy Trucks:	69.3	67.9	56.3	60.7	68.8	68.8
Vehicle Noise:	74.1	72.1	68.0	66.8	74.3	74.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	251	540	1,164
CNEL:	121	261	563	1,213

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project
Road Name: Pine Av.
Road Segment: w/o Chino Corona Rd.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,928 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,393 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:	66.2%	13.5%	20.3%	93.36%
Medium Trucks:	77.1%	5.3%	17.6%	4.66%
Heavy Trucks:	86.3%	1.5%	12.2%	1.98%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	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	3.17	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.85	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-13.56	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	68.2	67.3	64.3	71.5	71.9
Medium Trucks:	68.8	66.8	61.2	61.7	69.1	69.3
Heavy Trucks:	69.9	68.4	56.9	61.2	69.3	69.3
Vehicle Noise:	74.6	72.6	68.6	67.4	74.9	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	127	273	587	1,266
CNEL:	132	284	612	1,319

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project
Road Name: Pine Av.
Road Segment: w/o W. Preserve Loop
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,546	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,955	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:	66.2%	13.5%	20.3%	93.31%
Medium Trucks:	77.1%	5.3%	17.6%	4.64%
Heavy Trucks:	86.3%	1.5%	12.2%	2.05%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	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	0.77	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-12.26	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-15.81	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:	68.4	65.8	64.9	61.9	69.1	69.5
Medium Trucks:	66.4	64.4	58.8	59.3	66.7	66.9
Heavy Trucks:	67.6	66.2	54.6	58.9	67.0	67.1
Vehicle Noise:	72.3	70.3	66.2	65.0	72.5	72.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	88	190	409	881
CNEL:	92	198	426	918

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project
Road Name: Pine Av.
Road Segment: w/o E. Preserve Loop
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,996	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,100	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:	66.2%	13.5%	20.3%	93.35%
Medium Trucks:	77.1%	5.3%	17.6%	4.66%
Heavy Trucks:	86.3%	1.5%	12.2%	1.99%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	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	2.78	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-10.24	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-13.93	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	67.8	66.9	63.9	71.1	71.5
Medium Trucks:	68.4	66.5	60.9	61.3	68.7	68.9
Heavy Trucks:	69.5	68.1	56.5	60.8	68.9	69.0
Vehicle Noise:	74.3	72.3	68.2	67.0	74.5	74.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	119	257	554	1,193
CNEL:	124	268	577	1,243

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project
Road Name: Pine Av.
Road Segment: w/o Hellman Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,426	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,043	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:	66.2%	13.5%	20.3%	93.34%
Medium Trucks:	77.1%	5.3%	17.6%	4.66%
Heavy Trucks:	86.3%	1.5%	12.2%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	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	2.70	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-10.32	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-14.00	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:	70.3	67.7	66.8	63.8	71.0	71.4
Medium Trucks:	68.3	66.4	60.8	61.2	68.6	68.8
Heavy Trucks:	69.4	68.0	56.4	60.7	68.8	68.9
Vehicle Noise:	74.2	72.2	68.1	66.9	74.4	74.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	118	254	547	1,178
CNEL:	123	264	570	1,228

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OY With Project
Road Name: Schleisman Rd.
Road Segment: w/o Archibald Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,852	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,285	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:	66.2%	13.5%	20.3%	93.33%
Medium Trucks:	77.1%	5.3%	17.6%	4.67%
Heavy Trucks:	86.3%	1.5%	12.2%	1.99%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	3.03	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-9.98	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-13.68	-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:	68.4	65.9	65.0	62.0	69.1	69.6
Medium Trucks:	66.4	64.5	58.9	59.3	66.8	66.9
Heavy Trucks:	67.5	66.1	54.5	58.9	67.0	67.0
Vehicle Noise:	72.3	70.3	66.2	65.1	72.5	72.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	112	241	520	1,120
CNEL:	117	251	542	1,167

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project | Project Name: MCH
Road Name: Central Av. | Job Number: 10351
Road Segment: n/o El Prado Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,180 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,318 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	3.07	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.91	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-13.84	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:	70.7	68.1	67.2	64.2	71.4	71.8
Medium Trucks:	68.7	66.8	61.2	61.6	69.0	69.2
Heavy Trucks:	69.6	68.1	56.6	60.9	69.0	69.1
Vehicle Noise:	74.5	72.5	68.5	67.3	74.7	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	124	267	575	1,240
CNEL:	129	278	600	1,292

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project | Project Name: MCH
Road Name: Central Av. | Job Number: 10351
Road Segment: s/o El Prado Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,805 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,981 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:	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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	45.869
Medium Trucks:	45.676
Heavy Trucks:	45.695

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.87	0.46	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.12	0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-13.05	0.48	-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:	71.6	69.0	68.1	65.1	72.3	72.7
Medium Trucks:	69.6	67.7	62.1	62.5	69.9	70.1
Heavy Trucks:	70.5	69.1	57.5	61.8	69.9	70.0
Vehicle Noise:	75.4	73.4	69.4	68.2	75.6	75.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	307	661	1,425
CNEL:	149	320	689	1,485

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project | Project Name: MCH
Road Name: El Prado Rd. | Job Number: 10351
Road Segment: n/o Kimball Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,632 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,863 vehicles
Vehicle Speed:	45 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.43	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	79.45	-10.55	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-14.48	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:	71.0	68.4	67.5	64.5	71.7	72.1
Medium Trucks:	69.0	67.1	61.5	61.9	69.3	69.5
Heavy Trucks:	69.9	68.4	56.9	61.2	69.3	69.4
Vehicle Noise:	74.8	72.8	68.8	67.6	75.0	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	205	442	952
CNEL:	99	214	460	992

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: n/o Walnut Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	52,793 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,279 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	4.22	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.76	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-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:	77.2	74.6	73.8	70.8	77.9	78.4
Medium Trucks:	74.9	73.0	67.4	67.8	75.2	75.4
Heavy Trucks:	75.0	73.5	62.0	66.3	74.4	74.4
Vehicle Noise:	80.6	78.5	74.9	73.5	80.9	81.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	447	964	2,077	4,474
CNEL:	467	1,007	2,169	4,674

Thursday, May 02, 2019

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: n/o Riverside Dr.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,572 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,557 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	3.58	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	-13.33	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:	76.6	74.0	73.1	70.1	77.3	77.7
Medium Trucks:	74.3	72.3	66.7	67.2	74.6	74.8
Heavy Trucks:	74.3	72.9	61.3	65.6	73.7	73.8
Vehicle Noise:	80.0	77.9	74.2	72.8	80.3	80.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	406	874	1,883	4,056
CNEL:	424	913	1,967	4,237

Thursday, May 02, 2019

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: n/o Chino Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	49,051 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,905 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	3.90	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	-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:	76.9	74.3	73.4	70.4	77.6	78.0
Medium Trucks:	74.6	72.7	67.1	67.5	74.9	75.1
Heavy Trucks:	74.6	73.2	61.6	66.0	74.1	74.1
Vehicle Noise:	80.3	78.2	74.6	73.1	80.6	80.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	426	918	1,977	4,260
CNEL:	445	959	2,066	4,450

Thursday, May 02, 2019

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: n/o Schaefer Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	49,457 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,946 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	3.94	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.05	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.98	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:	76.9	74.4	73.5	70.5	77.7	78.1
Medium Trucks:	74.6	72.7	67.1	67.5	74.9	75.1
Heavy Trucks:	74.7	73.3	61.7	66.0	74.1	74.2
Vehicle Noise:	80.3	78.3	74.6	73.2	80.6	80.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	428	923	1,988	4,284
CNEL:	447	964	2,077	4,475

Thursday, May 02, 2019

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project | Project Name: MCH
Road Name: Euclid Av. | Job Number: 10351
Road Segment: n/o Edison Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	52,051 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,205 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	4.16	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.82	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.76	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:	77.2	74.6	73.7	70.7	77.9	78.3
Medium Trucks:	74.9	72.9	67.3	67.8	75.2	75.4
Heavy Trucks:	74.9	73.5	61.9	66.2	74.3	74.4
Vehicle Noise:	80.5	78.5	74.8	73.4	80.8	81.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	443	955	2,057	4,432
CNEL:	463	998	2,149	4,630

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project
Road Name: Euclid Av.
Road Segment: n/o Eucalyptus Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,542 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,754 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	3.77	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.22	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-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:	76.8	74.2	73.3	70.3	77.5	77.9
Medium Trucks:	74.5	72.5	66.9	67.4	74.8	75.0
Heavy Trucks:	74.5	73.1	61.5	65.8	73.9	74.0
Vehicle Noise:	80.2	78.1	74.4	73.0	80.4	80.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	417	899	1,937	4,172
CNEL:	436	939	2,023	4,359

Thursday, May 02, 2019

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project
Road Name: Euclid Av.
Road Segment: n/o Merrill Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,149 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,715 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	3.73	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.25	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.19	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:	76.7	74.2	73.3	70.3	77.4	77.9
Medium Trucks:	74.4	72.5	66.9	67.3	74.7	74.9
Heavy Trucks:	74.5	73.0	61.5	65.8	73.9	74.0
Vehicle Noise:	80.1	78.1	74.4	73.0	80.4	80.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	415	894	1,926	4,149
CNEL:	433	934	2,012	4,335

Thursday, May 02, 2019

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project
Road Name: Euclid Av.
Road Segment: s/o Merrill Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	49,987 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,999 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	3.98	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.00	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.93	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:	77.0	74.4	73.5	70.5	77.7	78.1
Medium Trucks:	74.7	72.7	67.1	67.6	75.0	75.2
Heavy Trucks:	74.7	73.3	61.7	66.1	74.1	74.2
Vehicle Noise:	80.4	78.3	74.6	73.2	80.7	80.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	431	929	2,003	4,314
CNEL:	451	971	2,092	4,507

Thursday, May 02, 2019

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project
Road Name: Euclid Av.
Road Segment: n/o Kimball Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	49,377 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,938 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	3.93	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.05	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.99	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:	76.9	74.4	73.5	70.5	77.6	78.1
Medium Trucks:	74.6	72.7	67.1	67.5	74.9	75.1
Heavy Trucks:	74.7	73.2	61.7	66.0	74.1	74.2
Vehicle Noise:	80.3	78.3	74.6	73.2	80.6	80.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	428	922	1,986	4,279
CNEL:	447	963	2,075	4,470

Thursday, May 02, 2019

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project
Road Name: Euclid Av.
Road Segment: n/o Bickmore Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,945 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,695 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	2.67	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.31	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-14.25	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:	75.7	73.1	72.2	69.2	76.4	76.8
Medium Trucks:	73.4	71.4	65.8	66.3	73.7	73.9
Heavy Trucks:	73.4	72.0	60.4	64.7	72.8	72.9
Vehicle Noise:	79.1	77.0	73.3	71.9	79.3	79.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	353	760	1,637	3,527
CNEL:	368	794	1,710	3,684

Thursday, May 02, 2019

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project
Road Name: Archibald Av.
Road Segment: n/o Limonite Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	46,489 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,649 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	3.67	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.31	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.25	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:	76.7	74.1	73.2	70.2	77.4	77.8
Medium Trucks:	74.4	72.4	66.8	67.3	74.7	74.9
Heavy Trucks:	74.4	73.0	61.4	65.7	73.8	73.9
Vehicle Noise:	80.1	78.0	74.3	72.9	80.3	80.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	411	886	1,908	4,111
CNEL:	429	925	1,993	4,294

Thursday, May 02, 2019

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project
Road Name: Archibald Av.
Road Segment: s/o Limonite Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,298 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,630 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	3.46	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-9.52	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-13.45	-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:	68.9	66.3	65.4	62.4	69.6	70.0
Medium Trucks:	66.9	65.0	59.4	59.8	67.2	67.4
Heavy Trucks:	67.8	66.3	54.7	59.1	67.2	67.2
Vehicle Noise:	72.7	70.7	66.7	65.4	72.9	73.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	256	552	1,189
CNEL:	124	267	575	1,239

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project
Road Name: Archibald Av.
Road Segment: s/o Schleisman Rd.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,702 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,770 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	2.29	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-10.69	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.62	-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	65.1	64.2	61.2	68.4	68.8
Medium Trucks:	65.7	63.8	58.2	58.6	66.0	66.2
Heavy Trucks:	66.6	65.2	53.6	57.9	66.0	66.1
Vehicle Noise:	71.5	69.5	65.5	64.3	71.7	72.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	214	461	993
CNEL:	103	223	480	1,035

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project
Road Name: Kimball Av.
Road Segment: w/o Mountain Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,744 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,274 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	-12.01	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.94	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.3	68.7	67.8	64.8	72.0	72.4
Medium Trucks:	69.1	67.2	61.6	62.0	69.4	69.6
Heavy Trucks:	69.5	68.1	56.5	60.9	69.0	69.0
Vehicle Noise:	74.8	72.8	69.0	67.7	75.1	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	207	447	963
CNEL:	100	216	466	1,005

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project
Road Name: Kimball Av.
Road Segment: w/o Euclid Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,863 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,986 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	-10.82	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.76	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:	72.4	69.9	69.0	66.0	73.2	73.6
Medium Trucks:	70.3	68.4	62.8	63.2	70.6	70.8
Heavy Trucks:	70.7	69.3	57.7	62.1	70.1	70.2
Vehicle Noise:	76.0	74.0	70.2	68.8	76.3	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	249	536	1,155
CNEL:	120	260	559	1,205

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project
Road Name: Kimball Av.
Road Segment: e/o Euclid Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,348 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,435 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.27	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.71	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.64	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.3	68.7	67.8	64.8	72.0	72.4
Medium Trucks:	69.1	67.2	61.6	62.0	69.5	69.6
Heavy Trucks:	69.6	68.1	56.6	60.9	69.0	69.1
Vehicle Noise:	74.9	72.8	69.0	67.7	75.1	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	232	500	1,077
CNEL:	112	242	522	1,124

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project
Road Name: Kimball Av.
Road Segment: w/o Rincon Meadows Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,356 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,236 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.90	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-12.08	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.01	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.9	68.3	67.4	64.4	71.6	72.1
Medium Trucks:	68.8	66.8	61.2	61.7	69.1	69.3
Heavy Trucks:	69.2	67.8	56.2	60.5	68.6	68.7
Vehicle Noise:	74.5	72.5	68.6	67.3	74.8	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	102	219	472	1,018
CNEL:	106	229	493	1,062

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project
Road Name: Kimball Av.
Road Segment: e/o Rincon Meadows Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,454 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,145 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.72	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-12.26	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.19	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	68.2	67.3	64.3	71.5	71.9
Medium Trucks:	68.6	66.7	61.1	61.5	68.9	69.1
Heavy Trucks:	69.0	67.6	56.0	60.3	68.4	68.5
Vehicle Noise:	74.3	72.3	68.5	67.1	74.6	74.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	213	460	990
CNEL:	103	223	480	1,033

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project
Road Name: Kimball Av.
Road Segment: e/o Mill Creek Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,521 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,952 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.31	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-12.67	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.60	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	67.8	66.9	63.9	71.0	71.5
Medium Trucks:	68.2	66.2	60.6	61.1	68.5	68.7
Heavy Trucks:	68.6	67.2	55.6	59.9	68.0	68.1
Vehicle Noise:	73.9	71.9	68.0	66.7	74.2	74.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	200	432	930
CNEL:	97	209	450	970

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project
Road Name: Kimball Av.
Road Segment: e/o Main St.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,365 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,837 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.05	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-12.93	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.87	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	67.5	66.6	63.6	70.8	71.2
Medium Trucks:	67.9	66.0	60.4	60.8	68.2	68.4
Heavy Trucks:	68.4	66.9	55.3	59.7	67.8	67.8
Vehicle Noise:	73.6	71.6	67.8	66.5	73.9	74.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	414	893
CNEL:	93	201	432	931

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project
Road Name: Kimball Av.
Road Segment: e/o Flight Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,529 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,553 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.68	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.66	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-17.60	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	66.8	65.9	62.9	70.0	70.5
Medium Trucks:	67.2	65.3	59.7	60.1	67.5	67.7
Heavy Trucks:	67.6	66.2	54.6	58.9	67.0	67.1
Vehicle Noise:	72.9	70.9	67.1	65.7	73.2	73.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	172	370	798
CNEL:	83	179	387	833

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project | Project Name: MCH
Road Name: Limonite Av. | Job Number: 10351
Road Segment: w/o Archibald Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,217 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,722 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.76	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-11.23	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-15.16	-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:	68.9	66.3	65.4	62.4	69.6	70.0
Medium Trucks:	66.7	64.8	59.2	59.6	67.1	67.2
Heavy Trucks:	67.2	65.7	54.2	58.5	66.6	66.7
Vehicle Noise:	72.5	70.4	66.6	65.3	72.7	73.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	249	537	1,158
CNEL:	121	260	561	1,208

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project | Project Name: MCH
Road Name: Limonite Av. | Job Number: 10351
Road Segment: e/o Archibald Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	43,320 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,332 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.78	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-9.21	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-13.14	-1.84	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.9	68.3	67.5	64.5	71.6	72.1
Medium Trucks:	68.8	66.8	61.2	61.7	69.1	69.3
Heavy Trucks:	69.2	67.8	56.2	60.5	68.6	68.7
Vehicle Noise:	74.5	72.5	68.6	67.3	74.8	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	158	340	732	1,578
CNEL:	165	355	764	1,647

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project | Project Name: MCH
Road Name: Pine Av. | Job Number: 10351
Road Segment: w/o El Prado Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,780 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,778 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	2.30	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.68	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.61	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:	69.9	67.3	66.4	63.4	70.6	71.0
Medium Trucks:	67.9	66.0	60.4	60.9	68.3	68.4
Heavy Trucks:	68.8	67.4	55.8	60.1	68.2	68.3
Vehicle Noise:	73.7	71.7	67.7	66.5	74.0	74.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	237	511	1,101
CNEL:	115	247	533	1,148

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project | Project Name: MCH
Road Name: Pine Av. | Job Number: 10351
Road Segment: w/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,288 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,529 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	1.90	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-11.09	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-15.02	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	66.9	66.0	63.0	70.2	70.6
Medium Trucks:	67.5	65.6	60.0	60.4	67.8	68.0
Heavy Trucks:	68.4	67.0	55.4	59.7	67.8	67.9
Vehicle Noise:	73.3	71.3	67.3	66.1	73.5	73.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	223	480	1,034
CNEL:	108	232	500	1,078

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project
Road Name: Pine Av.
Road Segment: e/o Euclid Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,279 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,728 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	3.58	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.40	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-13.34	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:	71.2	68.6	67.7	64.7	71.9	72.3
Medium Trucks:	69.2	67.3	61.7	62.1	69.5	69.7
Heavy Trucks:	70.1	68.7	57.1	61.4	69.5	69.6
Vehicle Noise:	75.0	73.0	69.0	67.8	75.2	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	134	289	622	1,340
CNEL:	140	301	648	1,396

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project
Road Name: Pine Av.
Road Segment: w/o Chino Corona Rd.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,277 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,628 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	3.46	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.52	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-13.45	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:	71.1	68.5	67.6	64.6	71.8	72.2
Medium Trucks:	69.1	67.2	61.6	62.0	69.4	69.6
Heavy Trucks:	70.0	68.5	57.0	61.3	69.4	69.4
Vehicle Noise:	74.9	72.9	68.9	67.6	75.1	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	132	283	611	1,316
CNEL:	137	295	636	1,371

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project
Road Name: Pine Av.
Road Segment: w/o W. Preserve Loop
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,507 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,951 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	0.77	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-12.21	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-16.15	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:	68.4	65.8	64.9	61.9	69.1	69.5
Medium Trucks:	66.4	64.5	58.9	59.3	66.7	66.9
Heavy Trucks:	67.3	65.8	54.3	58.6	66.7	66.8
Vehicle Noise:	72.2	70.2	66.2	65.0	72.4	72.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	404	870
CNEL:	91	195	421	907

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project
Road Name: Pine Av.
Road Segment: w/o E. Preserve Loop
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,519 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,152 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	2.85	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.13	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.06	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:	70.5	67.9	67.0	64.0	71.2	71.6
Medium Trucks:	68.5	66.6	61.0	61.4	68.8	69.0
Heavy Trucks:	69.4	67.9	56.3	60.7	68.8	68.8
Vehicle Noise:	74.3	72.3	68.2	67.0	74.5	74.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	120	258	556	1,198
CNEL:	125	269	579	1,248

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project | Project Name: MCH
Road Name: Pine Av. | Job Number: 10351
Road Segment: w/o Hellman Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,920 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,092 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	2.77	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.21	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.15	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:	70.4	67.8	66.9	63.9	71.1	71.5
Medium Trucks:	68.4	66.5	60.9	61.3	68.7	68.9
Heavy Trucks:	69.3	67.8	56.3	60.6	68.7	68.8
Vehicle Noise:	74.2	72.2	68.2	67.0	74.4	74.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	118	255	549	1,183
CNEL:	123	266	572	1,233

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY Without Project | Project Name: MCH
Road Name: Schleisman Rd. | Job Number: 10351
Road Segment: w/o Archibald Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,337 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,834 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:	66.3%	13.5%	20.3%	93.40%
Medium Trucks:	77.0%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	3.70	-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	-13.21	-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:	69.1	66.5	65.6	62.6	69.8	70.2
Medium Trucks:	67.1	65.2	59.6	60.0	67.4	67.6
Heavy Trucks:	68.0	66.6	55.0	59.3	67.4	67.5
Vehicle Noise:	72.9	70.9	66.9	65.7	73.2	73.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	266	572	1,233
CNEL:	128	277	596	1,285

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project | Project Name: MCH
Road Name: Central Av. | Job Number: 10351
Road Segment: n/o El Prado Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,535 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,354 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:	66.2%	13.5%	20.3%	93.47%
Medium Trucks:	77.1%	5.3%	17.6%	4.65%
Heavy Trucks:	86.3%	1.5%	12.2%	1.88%

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:	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	3.12	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.91	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-13.84	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:	70.7	68.1	67.3	64.3	71.4	71.9
Medium Trucks:	68.7	66.8	61.2	61.6	69.0	69.2
Heavy Trucks:	69.6	68.1	56.6	60.9	69.0	69.1
Vehicle Noise:	74.5	72.5	68.5	67.3	74.7	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	124	268	577	1,244
CNEL:	130	279	602	1,296

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project | Project Name: MCH
Road Name: Central Av. | Job Number: 10351
Road Segment: s/o El Prado Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,021 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,002 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:	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:	66.2%	13.5%	20.3%	93.44%
Medium Trucks:	77.1%	5.3%	17.6%	4.67%
Heavy Trucks:	86.3%	1.5%	12.2%	1.89%

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:	45.869
Medium Trucks:	45.676
Heavy Trucks:	45.695

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.89	0.46	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.12	0.49	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-13.05	0.48	-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:	71.6	69.0	68.1	65.1	72.3	72.7
Medium Trucks:	69.6	67.7	62.1	62.5	69.9	70.1
Heavy Trucks:	70.5	69.1	57.5	61.8	69.9	70.0
Vehicle Noise:	75.4	73.4	69.4	68.2	75.6	75.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	307	662	1,427
CNEL:	149	320	690	1,487

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project
Road Name: El Prado Rd.
Road Segment: n/o Kimball Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,164 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,916 vehicles
Vehicle Speed:	45 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:	66.2%	13.5%	20.3%	93.53%
Medium Trucks:	77.1%	5.3%	17.6%	4.61%
Heavy Trucks:	86.3%	1.5%	12.2%	1.87%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.52	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	79.45	-10.55	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-14.48	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:	71.1	68.5	67.6	64.6	71.8	72.2
Medium Trucks:	69.0	67.1	61.5	61.9	69.3	69.5
Heavy Trucks:	69.9	68.4	56.9	61.2	69.3	69.4
Vehicle Noise:	74.8	72.8	68.8	67.6	75.1	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	206	444	957
CNEL:	100	215	463	998

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project
Road Name: Euclid Av.
Road Segment: n/o Walnut Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	53,422 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,342 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:	66.2%	13.5%	20.3%	92.87%
Medium Trucks:	77.1%	5.3%	17.6%	4.90%
Heavy Trucks:	86.3%	1.5%	12.2%	2.24%

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:	71.78	4.25	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.53	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.94	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:	77.2	74.7	73.8	70.8	78.0	78.4
Medium Trucks:	75.1	73.2	67.6	68.1	75.5	75.7
Heavy Trucks:	75.7	74.3	62.7	67.0	75.1	75.2
Vehicle Noise:	80.9	78.9	75.0	73.7	81.2	81.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	465	1,002	2,159	4,652
CNEL:	485	1,045	2,252	4,852

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project
Road Name: Euclid Av.
Road Segment: n/o Riverside Dr.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	46,231 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,623 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:	66.2%	13.5%	20.3%	92.79%
Medium Trucks:	77.1%	5.3%	17.6%	4.93%
Heavy Trucks:	86.3%	1.5%	12.2%	2.29%

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:	71.78	3.62	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.13	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.47	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:	76.6	74.0	73.1	70.1	77.3	77.8
Medium Trucks:	74.5	72.6	67.0	67.5	74.9	75.1
Heavy Trucks:	75.2	73.8	62.2	66.5	74.6	74.7
Vehicle Noise:	80.3	78.3	74.4	73.1	80.6	80.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	424	914	1,970	4,244
CNEL:	443	954	2,054	4,426

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project
Road Name: Euclid Av.
Road Segment: n/o Chino Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	49,822 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,982 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:	66.2%	13.5%	20.3%	92.85%
Medium Trucks:	77.1%	5.3%	17.6%	4.90%
Heavy Trucks:	86.3%	1.5%	12.2%	2.25%

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:	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	3.94	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.83	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.21	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:	76.9	74.4	73.5	70.5	77.7	78.1
Medium Trucks:	74.8	72.9	67.3	67.8	75.2	75.4
Heavy Trucks:	75.5	74.0	62.4	66.8	74.9	74.9
Vehicle Noise:	80.6	78.6	74.7	73.4	80.9	81.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	445	958	2,064	4,447
CNEL:	464	999	2,153	4,638

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project
Road Name: Euclid Av.
Road Segment: n/o Schaefer Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	50,264 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,026 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:	66.2%	13.5%	20.3%	92.86%
Medium Trucks:	77.1%	5.3%	17.6%	4.89%
Heavy Trucks:	86.3%	1.5%	12.2%	2.25%

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:	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	3.98	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.80	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.18	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:	77.0	74.4	73.5	70.5	77.7	78.1
Medium Trucks:	74.9	73.0	67.4	67.8	75.2	75.4
Heavy Trucks:	75.5	74.1	62.5	66.8	74.9	75.0
Vehicle Noise:	80.6	78.6	74.7	73.4	80.9	81.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	447	963	2,075	4,471
CNEL:	466	1,005	2,164	4,663

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project
Road Name: Euclid Av.
Road Segment: n/o Edison Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	52,860 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,286 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:	66.2%	13.5%	20.3%	92.88%
Medium Trucks:	77.1%	5.3%	17.6%	4.88%
Heavy Trucks:	86.3%	1.5%	12.2%	2.23%

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	4.20	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.59	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.99	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:	77.2	74.6	73.7	70.7	77.9	78.3
Medium Trucks:	75.1	73.2	67.6	68.0	75.4	75.6
Heavy Trucks:	75.7	74.2	62.7	67.0	75.1	75.2
Vehicle Noise:	80.9	78.8	74.9	73.6	81.1	81.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	462	995	2,143	4,616
CNEL:	482	1,037	2,235	4,815

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project
Road Name: Euclid Av.
Road Segment: n/o Eucalyptus Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	48,456 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,846 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:	66.2%	13.5%	20.3%	92.85%
Medium Trucks:	77.1%	5.3%	17.6%	4.89%
Heavy Trucks:	86.3%	1.5%	12.2%	2.26%

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:	71.78	3.82	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.96	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.32	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:	76.8	74.2	73.4	70.4	77.5	78.0
Medium Trucks:	74.7	72.8	67.2	67.6	75.0	75.2
Heavy Trucks:	75.3	73.9	62.3	66.7	74.8	74.8
Vehicle Noise:	80.5	78.5	74.6	73.3	80.7	81.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	437	940	2,026	4,365
CNEL:	455	981	2,113	4,553

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project
Road Name: Euclid Av.
Road Segment: n/o Merrill Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	48,135 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,814 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:	66.2%	13.5%	20.3%	92.86%
Medium Trucks:	77.1%	5.3%	17.6%	4.89%
Heavy Trucks:	86.3%	1.5%	12.2%	2.26%

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:	71.78	3.79	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.00	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.35	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:	76.8	74.2	73.3	70.3	77.5	77.9
Medium Trucks:	74.7	72.8	67.2	67.6	75.0	75.2
Heavy Trucks:	75.3	73.9	62.3	66.6	74.7	74.8
Vehicle Noise:	80.5	78.4	74.5	73.2	80.7	81.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	434	936	2,017	4,345
CNEL:	453	976	2,104	4,532

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project
Road Name: Euclid Av.
Road Segment: s/o Merrill Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	51,048 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,105 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:	66.2%	13.5%	20.3%	92.90%
Medium Trucks:	77.1%	5.3%	17.6%	4.87%
Heavy Trucks:	86.3%	1.5%	12.2%	2.23%

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	4.05	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.76	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.14	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:	77.1	74.5	73.6	70.6	77.8	78.2
Medium Trucks:	74.9	73.0	67.4	67.8	75.2	75.4
Heavy Trucks:	75.5	74.1	62.5	66.8	74.9	75.0
Vehicle Noise:	80.7	78.7	74.8	73.5	80.9	81.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	451	971	2,093	4,508
CNEL:	470	1,013	2,183	4,703

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project
Road Name: Euclid Av.
Road Segment: n/o Kimball Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	50,437 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,044 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:	66.2%	13.5%	20.3%	92.89%
Medium Trucks:	77.1%	5.3%	17.6%	4.87%
Heavy Trucks:	86.3%	1.5%	12.2%	2.24%

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:	71.78	4.00	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.81	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.18	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:	77.0	74.4	73.5	70.5	77.7	78.1
Medium Trucks:	74.9	72.9	67.3	67.8	75.2	75.4
Heavy Trucks:	75.5	74.0	62.5	66.8	74.9	75.0
Vehicle Noise:	80.6	78.6	74.7	73.4	80.9	81.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	447	964	2,077	4,474
CNEL:	467	1,005	2,166	4,667

Thursday, May 02, 2019

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project
Road Name: Euclid Av.
Road Segment: n/o Bickmore Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,833 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,883 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:	66.2%	13.5%	20.3%	92.77%
Medium Trucks:	77.1%	5.3%	17.6%	4.87%
Heavy Trucks:	86.3%	1.5%	12.2%	2.36%

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:	71.78	2.86	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.94	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.09	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:	75.9	73.3	72.4	69.4	76.6	77.0
Medium Trucks:	73.7	71.8	66.2	66.6	74.1	74.2
Heavy Trucks:	74.6	73.1	61.6	65.9	74.0	74.1
Vehicle Noise:	79.6	77.6	73.6	72.4	79.8	80.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	379	817	1,760	3,791
CNEL:	395	852	1,835	3,953

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project
Road Name: Archibald Av.
Road Segment: n/o Limonite Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	46,675 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,668 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:	66.2%	13.5%	20.3%	93.43%
Medium Trucks:	77.1%	5.3%	17.6%	4.68%
Heavy Trucks:	86.3%	1.5%	12.2%	1.89%

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	3.69	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.32	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.25	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:	76.7	74.1	73.2	70.2	77.4	77.8
Medium Trucks:	74.4	72.4	66.8	67.3	74.7	74.9
Heavy Trucks:	74.4	73.0	61.4	65.7	73.8	73.9
Vehicle Noise:	80.1	78.0	74.3	72.9	80.4	80.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	412	887	1,910	4,115
CNEL:	430	926	1,995	4,299

Thursday, May 02, 2019

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project
Road Name: Archibald Av.
Road Segment: s/o Limonite Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,347 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,635 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:	66.2%	13.5%	20.3%	93.37%
Medium Trucks:	77.1%	5.3%	17.6%	4.71%
Heavy Trucks:	86.3%	1.5%	12.2%	1.92%

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:	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	3.47	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-9.50	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-13.39	-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:	68.9	66.3	65.4	62.4	69.6	70.0
Medium Trucks:	66.9	65.0	59.4	59.8	67.2	67.4
Heavy Trucks:	67.8	66.4	54.8	59.1	67.2	67.3
Vehicle Noise:	72.7	70.7	66.7	65.5	72.9	73.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	257	554	1,193
CNEL:	124	268	577	1,243

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project
Road Name: Archibald Av.
Road Segment: s/o Schleisman Rd.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,859 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,786 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:	66.2%	13.5%	20.3%	93.36%
Medium Trucks:	77.1%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.94%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	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	2.31	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-10.66	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.51	-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	65.1	64.2	61.2	68.4	68.9
Medium Trucks:	65.7	63.8	58.2	58.7	66.1	66.3
Heavy Trucks:	66.7	65.3	53.7	58.0	66.1	66.2
Vehicle Noise:	71.6	69.6	65.5	64.3	71.8	72.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	215	464	1,000
CNEL:	104	225	484	1,042

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project
Road Name: Kimball Av.
Road Segment: w/o Mountain Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,271 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,327 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:	66.2%	13.5%	20.3%	93.55%
Medium Trucks:	77.1%	5.3%	17.6%	4.59%
Heavy Trucks:	86.3%	1.5%	12.2%	1.86%

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:	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	1.08	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.01	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.94	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.4	68.8	67.9	64.9	72.1	72.5
Medium Trucks:	69.1	67.2	61.6	62.0	69.4	69.6
Heavy Trucks:	69.5	68.1	56.5	60.9	69.0	69.0
Vehicle Noise:	74.9	72.8	69.1	67.7	75.2	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	209	450	970
CNEL:	101	218	470	1,013

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project
Road Name: Kimball Av.
Road Segment: w/o Euclid Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,889 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,989 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:	66.2%	13.5%	20.3%	93.41%
Medium Trucks:	77.1%	5.3%	17.6%	4.69%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	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	-10.83	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.76	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:	72.4	69.9	69.0	66.0	73.2	73.6
Medium Trucks:	70.3	68.4	62.8	63.2	70.6	70.8
Heavy Trucks:	70.7	69.3	57.7	62.1	70.1	70.2
Vehicle Noise:	76.0	74.0	70.2	68.8	76.3	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	249	536	1,155
CNEL:	120	260	559	1,205

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project | Project Name: MCH
Road Name: Kimball Av. | Job Number: 10351
Road Segment: e/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,135 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,513 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.2%	13.5%	20.3%	93.45%
Medium Trucks:	77.1%	5.3%	17.6%	4.62%
Heavy Trucks:	86.3%	1.5%	12.2%	1.94%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.41	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.65	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.42	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.4	68.8	68.0	65.0	72.1	72.6
Medium Trucks:	69.2	67.3	61.7	62.1	69.5	69.7
Heavy Trucks:	69.8	68.4	56.8	61.1	69.2	69.3
Vehicle Noise:	75.0	73.0	69.1	67.8	75.3	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	237	511	1,100
CNEL:	115	247	533	1,148

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project | Project Name: MCH
Road Name: Kimball Av. | Job Number: 10351
Road Segment: w/o Rincon Meadows Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,141 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,314 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.2%	13.5%	20.3%	93.45%
Medium Trucks:	77.1%	5.3%	17.6%	4.61%
Heavy Trucks:	86.3%	1.5%	12.2%	1.94%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.05	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-12.01	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.77	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	68.5	67.6	64.6	71.8	72.2
Medium Trucks:	68.8	66.9	61.3	61.7	69.2	69.3
Heavy Trucks:	69.4	68.0	56.4	60.8	68.9	68.9
Vehicle Noise:	74.7	72.6	68.8	67.5	74.9	75.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	104	224	483	1,041
CNEL:	109	234	504	1,086

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project | Project Name: MCH
Road Name: Kimball Av. | Job Number: 10351
Road Segment: e/o Rincon Meadows Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,238 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,224 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.2%	13.5%	20.3%	93.45%
Medium Trucks:	77.1%	5.3%	17.6%	4.61%
Heavy Trucks:	86.3%	1.5%	12.2%	1.94%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.88	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-12.19	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.94	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.9	68.3	67.4	64.4	71.6	72.0
Medium Trucks:	68.7	66.7	61.1	61.6	69.0	69.2
Heavy Trucks:	69.3	67.8	56.3	60.6	68.7	68.8
Vehicle Noise:	74.5	72.5	68.6	67.3	74.7	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	218	471	1,014
CNEL:	106	228	491	1,058

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project | Project Name: MCH
Road Name: Kimball Av. | Job Number: 10351
Road Segment: e/o Mill Creek Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,303 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,030 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.2%	13.5%	20.3%	93.46%
Medium Trucks:	77.1%	5.3%	17.6%	4.60%
Heavy Trucks:	86.3%	1.5%	12.2%	1.95%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.49	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-12.59	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.33	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	67.9	67.0	64.0	71.2	71.6
Medium Trucks:	68.3	66.3	60.7	61.2	68.6	68.8
Heavy Trucks:	68.9	67.5	55.9	60.2	68.3	68.4
Vehicle Noise:	74.1	72.1	68.2	66.9	74.3	74.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	206	443	954
CNEL:	100	215	462	996

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project
Road Name: Kimball Av.
Road Segment: e/o Main St.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,110 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,911 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.2%	13.5%	20.3%	93.45%
Medium Trucks:	77.1%	5.3%	17.6%	4.60%
Heavy Trucks:	86.3%	1.5%	12.2%	1.95%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.22	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-12.85	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.58	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	67.7	66.8	63.8	70.9	71.4
Medium Trucks:	68.0	66.1	60.5	60.9	68.3	68.5
Heavy Trucks:	68.6	67.2	55.6	60.0	68.1	68.1
Vehicle Noise:	73.8	71.8	67.9	66.6	74.1	74.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	426	917
CNEL:	96	206	444	957

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project
Road Name: Kimball Av.
Road Segment: e/o Flight Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,235 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,624 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	66.2%	13.5%	20.3%	93.44%
Medium Trucks:	77.1%	5.3%	17.6%	4.60%
Heavy Trucks:	86.3%	1.5%	12.2%	1.97%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.49	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.57	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-17.26	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.5	66.9	66.1	63.1	70.2	70.7
Medium Trucks:	67.3	65.4	59.8	60.2	67.6	67.8
Heavy Trucks:	68.0	66.5	55.0	59.3	67.4	67.4
Vehicle Noise:	73.1	71.1	67.2	65.9	73.4	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	382	823
CNEL:	86	185	399	859

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project
Road Name: Limonite Av.
Road Segment: w/o Archibald Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,934 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,793 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:	66.2%	13.5%	20.3%	93.43%
Medium Trucks:	77.1%	5.3%	17.6%	4.64%
Heavy Trucks:	86.3%	1.5%	12.2%	1.94%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	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	-11.17	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-14.96	-1.84	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	66.4	65.5	62.5	69.7	70.2
Medium Trucks:	66.8	64.9	59.3	59.7	67.1	67.3
Heavy Trucks:	67.4	65.9	54.4	58.7	66.8	66.9
Vehicle Noise:	72.6	70.6	66.7	65.4	72.9	73.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	118	254	547	1,179
CNEL:	123	265	571	1,230

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project
Road Name: Limonite Av.
Road Segment: e/o Archibald Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	43,906 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,391 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:	66.2%	13.5%	20.3%	93.40%
Medium Trucks:	77.1%	5.3%	17.6%	4.67%
Heavy Trucks:	86.3%	1.5%	12.2%	1.93%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.83	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-9.18	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-13.02	-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:	71.0	68.4	67.5	64.5	71.7	72.1
Medium Trucks:	68.8	66.9	61.3	61.7	69.1	69.3
Heavy Trucks:	69.3	67.9	56.3	60.6	68.7	68.8
Vehicle Noise:	74.6	72.5	68.7	67.4	74.8	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	159	343	740	1,594
CNEL:	166	358	772	1,663

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project
Road Name: Pine Av.
Road Segment: w/o El Prado Rd.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,483 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,948 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:	66.2%	13.5%	20.3%	92.39%
Medium Trucks:	77.1%	5.3%	17.6%	5.01%
Heavy Trucks:	86.3%	1.5%	12.2%	2.60%

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	2.51	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.14	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-12.99	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	67.5	66.6	63.6	70.8	71.3
Medium Trucks:	68.5	66.6	60.9	61.4	68.8	69.0
Heavy Trucks:	70.4	69.0	57.4	61.7	69.8	69.9
Vehicle Noise:	74.5	72.6	68.1	67.1	74.7	74.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	265	570	1,229
CNEL:	128	275	593	1,277

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project
Road Name: Pine Av.
Road Segment: w/o Euclid Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,605 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,560 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:	66.2%	13.5%	20.3%	93.33%
Medium Trucks:	77.1%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.97%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	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	1.95	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-11.03	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-14.81	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	67.0	66.1	63.1	70.3	70.7
Medium Trucks:	67.6	65.7	60.1	60.5	67.9	68.1
Heavy Trucks:	68.6	67.2	55.6	59.9	68.0	68.1
Vehicle Noise:	73.4	71.4	67.3	66.2	73.6	73.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	105	226	487	1,049
CNEL:	109	236	508	1,093

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project
Road Name: Pine Av.
Road Segment: e/o Euclid Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,606 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,761 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:	66.2%	13.5%	20.3%	93.35%
Medium Trucks:	77.1%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.95%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	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	3.62	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.36	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-13.19	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:	71.2	68.6	67.7	64.7	71.9	72.4
Medium Trucks:	69.3	67.3	61.7	62.2	69.6	69.8
Heavy Trucks:	70.2	68.8	57.2	61.5	69.6	69.7
Vehicle Noise:	75.1	73.1	69.0	67.8	75.3	75.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	135	292	628	1,353
CNEL:	141	304	654	1,410

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project
Road Name: Pine Av.
Road Segment: w/o Chino Corona Rd.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,604 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,660 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:	66.2%	13.5%	20.3%	93.35%
Medium Trucks:	77.1%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.95%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	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	3.50	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.48	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-13.31	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:	71.1	68.5	67.6	64.6	71.8	72.2
Medium Trucks:	69.1	67.2	61.6	62.1	69.5	69.6
Heavy Trucks:	70.1	68.7	57.1	61.4	69.5	69.6
Vehicle Noise:	75.0	73.0	68.9	67.7	75.2	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	133	286	617	1,329
CNEL:	138	298	643	1,385

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project
Road Name: Pine Av.
Road Segment: w/o W. Preserve Loop
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,782 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,978 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:	66.2%	13.5%	20.3%	93.29%
Medium Trucks:	77.1%	5.3%	17.6%	4.72%
Heavy Trucks:	86.3%	1.5%	12.2%	1.99%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	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	0.82	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-12.14	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-15.88	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:	68.4	65.8	65.0	62.0	69.1	69.6
Medium Trucks:	66.5	64.6	59.0	59.4	66.8	67.0
Heavy Trucks:	67.5	66.1	54.5	58.9	67.0	67.0
Vehicle Noise:	72.3	70.3	66.2	65.1	72.5	72.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	191	411	886
CNEL:	92	199	428	923

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project
Road Name: Pine Av.
Road Segment: w/o E. Preserve Loop
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,805 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,181 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:	66.2%	13.5%	20.3%	93.34%
Medium Trucks:	77.1%	5.3%	17.6%	4.71%
Heavy Trucks:	86.3%	1.5%	12.2%	1.96%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	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	2.89	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.09	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-13.89	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:	70.5	67.9	67.0	64.0	71.2	71.6
Medium Trucks:	68.5	66.6	61.0	61.4	68.9	69.0
Heavy Trucks:	69.5	68.1	56.5	60.8	68.9	69.0
Vehicle Noise:	74.4	72.4	68.3	67.1	74.6	74.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	261	562	1,212
CNEL:	126	272	586	1,262

Thursday, May 02, 2019

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project
Road Name: Pine Av.
Road Segment: w/o Hellman Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,206 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,121 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:	66.2%	13.5%	20.3%	93.33%
Medium Trucks:	77.1%	5.3%	17.6%	4.71%
Heavy Trucks:	86.3%	1.5%	12.2%	1.96%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	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	2.81	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.17	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-13.97	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	67.8	66.9	63.9	71.1	71.5
Medium Trucks:	68.4	66.5	60.9	61.4	68.8	69.0
Heavy Trucks:	69.4	68.0	56.4	60.8	68.9	68.9
Vehicle Noise:	74.3	72.3	68.2	67.0	74.5	74.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	120	258	555	1,196
CNEL:	125	269	579	1,247

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY With Project
Road Name: Schleisman Rd.
Road Segment: w/o Archibald Av.
Project Name: MCH
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,557 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,856 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:	66.2%	13.5%	20.3%	93.34%
Medium Trucks:	77.1%	5.3%	17.6%	4.71%
Heavy Trucks:	86.3%	1.5%	12.2%	1.95%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	Grade Adjustment:	0.0

Lane Equivalent Distance (in feet)

Autos:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.72	-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	-13.07	-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:	69.1	66.5	65.7	62.7	69.8	70.3
Medium Trucks:	67.2	65.2	59.6	60.1	67.5	67.7
Heavy Trucks:	68.1	66.7	55.1	59.5	67.6	67.6
Vehicle Noise:	73.0	71.0	66.9	65.7	73.2	73.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	124	268	577	1,244
CNEL:	130	279	602	1,296

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Pine Av.
Road Segment: e/o Euclid Av.

Project Name: MCH (Dirt Haul Truck Trip
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,747 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,575 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:	66.2%	13.5%	20.3%	93.40%
Medium Trucks:	77.1%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	1.97	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-11.01	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-14.94	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:	69.6	67.0	66.1	63.1	70.3	70.7
Medium Trucks:	67.6	65.7	60.1	60.5	67.9	68.1
Heavy Trucks:	68.5	67.0	55.5	59.8	67.9	68.0
Vehicle Noise:	73.4	71.4	67.4	66.2	73.6	73.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	105	226	486	1,047
CNEL:	109	235	506	1,091

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Pine Av.
Road Segment: w/o Chino Corona Rd.

Project Name: MCH (Dirt Haul Truck Trip
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,771 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,977 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:	66.2%	13.5%	20.3%	93.40%
Medium Trucks:	77.1%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	2.60	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-10.38	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-14.31	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:	70.2	67.6	66.7	63.7	70.9	71.3
Medium Trucks:	68.2	66.3	60.7	61.2	68.6	68.7
Heavy Trucks:	69.1	67.7	56.1	60.4	68.5	68.6
Vehicle Noise:	74.0	72.0	68.0	66.8	74.3	74.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	115	248	535	1,153
CNEL:	120	259	558	1,202

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Pine Av.
Road Segment: w/o W. Preserve Loop

Project Name: MCH (Dirt Haul Truck Trip
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,445 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,645 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:	66.2%	13.5%	20.3%	93.40%
Medium Trucks:	77.1%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	0.03	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-12.96	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-16.89	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	65.0	64.2	61.2	68.3	68.8
Medium Trucks:	65.7	63.7	58.1	58.6	66.0	66.2
Heavy Trucks:	66.5	65.1	53.5	57.8	65.9	66.0
Vehicle Noise:	71.5	69.4	65.4	64.2	71.7	71.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	78	167	360	776
CNEL:	81	174	376	809

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Pine Av.
Road Segment: w/o E. Preserve Loop

Project Name: MCH (Dirt Haul Truck Trip
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,664 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,666 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:	66.2%	13.5%	20.3%	93.40%
Medium Trucks:	77.1%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	2.13	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-10.86	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-14.79	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	67.1	66.3	63.3	70.4	70.9
Medium Trucks:	67.8	65.8	60.2	60.7	68.1	68.3
Heavy Trucks:	68.6	67.2	55.6	59.9	68.0	68.1
Vehicle Noise:	73.6	71.5	67.5	66.3	73.8	74.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	107	231	497	1,071
CNEL:	112	241	518	1,117

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Pine Av.
Road Segment: w/o Hellman Av.

Project Name: MCH (Dirt Haul Truck Trip
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,513 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,651 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:	66.2%	13.5%	20.3%	93.40%
Medium Trucks:	77.1%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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	2.10	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-10.88	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-14.82	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	67.1	66.2	63.2	70.4	70.8
Medium Trucks:	67.7	65.8	60.2	60.6	68.1	68.2
Heavy Trucks:	68.6	67.2	55.6	59.9	68.0	68.1
Vehicle Noise:	73.5	71.5	67.5	66.3	73.8	74.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	107	230	495	1,067
CNEL:	111	240	516	1,112

Monday, May 20, 2019

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Chino Corona Rd.
Road Segment: s/o Pine Av.

Project Name: MCH (Dirt Haul Truck Trip
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	3,068 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	307 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	30.0 feet
Centerline Dist. to Observer:	30.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	66.2%	13.5%	20.3%	93.40%
Medium Trucks:	77.1%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	29.816
Medium Trucks:	29.518
Heavy Trucks:	29.547

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-7.27	3.26	-1.20	*-4.49*	0.000	0.000
Medium Trucks:	79.45	-20.25	3.33	-1.20	*-4.86*	0.000	0.000
Heavy Trucks:	84.25	-24.18	3.32	-1.20	*-5.77*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	63.3	60.7	59.8	56.8	64.0	64.4
Medium Trucks:	61.3	59.4	53.8	54.2	61.7	61.8
Heavy Trucks:	62.2	60.8	49.2	53.5	61.6	61.7
Vehicle Noise:	67.1	65.1	61.1	59.9	67.3	67.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	20	43	92	199
CNEL:	21	45	96	207

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Chino Corona Rd.
Road Segment: e/o Cucamonga Av.

Project Name: MCH (Dirt Haul Truck Trip
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	3,068 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	307 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	30.0 feet
Centerline Dist. to Observer:	30.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	66.2%	13.5%	20.3%	93.40%
Medium Trucks:	77.1%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	29.816
Medium Trucks:	29.518
Heavy Trucks:	29.547

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-6.75	3.26	-1.20	*-4.49*	0.000	0.000
Medium Trucks:	77.72	-19.74	3.33	-1.20	*-4.86*	0.000	0.000
Heavy Trucks:	82.99	-23.67	3.32	-1.20	*-5.77*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	61.8	59.2	58.4	55.4	62.5	63.0
Medium Trucks:	60.1	58.2	52.6	53.0	60.4	60.6
Heavy Trucks:	61.4	60.0	48.4	52.8	60.9	60.9
Vehicle Noise:	66.0	64.0	59.7	58.7	66.1	66.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	17	36	77	166
CNEL:	17	37	80	173

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Hellman Av.
Road Segment: s/o Pine Av.

Project Name: MCH (Dirt Haul Truck Trip
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,118 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,312 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	66.2%	13.5%	20.3%	93.40%
Medium Trucks:	77.1%	5.3%	17.6%	4.70%
Heavy Trucks:	86.3%	1.5%	12.2%	1.90%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.96	1.01	-1.20	*-4.64*	0.000	0.000
Medium Trucks:	79.45	-13.94	1.04	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-17.87	1.04	-1.20	*-5.44*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	67.3	64.7	63.8	60.8	68.0	68.5
Medium Trucks:	65.4	63.4	57.8	58.3	65.7	65.9
Heavy Trucks:	66.2	64.8	53.2	57.5	65.6	65.7
Vehicle Noise:	71.1	69.1	65.1	63.9	71.4	71.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	60	130	281	605
CNEL:	63	136	292	630

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Pine Av.
Road Segment: e/o Euclid Av.

Project Name: MCH (Dirt Haul Truck Trip
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,935 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,694 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:	66.2%	13.5%	20.3%	89.28%
Medium Trucks:	77.1%	5.3%	17.6%	4.49%
Heavy Trucks:	32.3%	21.7%	46.1%	6.23%

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	1.97	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-11.01	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.59	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:	69.6	67.0	66.1	63.1	70.3	70.7
Medium Trucks:	67.6	65.7	60.1	60.5	67.9	68.1
Heavy Trucks:	73.8	68.1	72.4	70.9	77.1	77.5
Vehicle Noise:	75.9	71.8	73.5	71.9	78.4	78.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	217	467	1,006	2,167
CNEL:	229	494	1,064	2,293

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Pine Av.
Road Segment: w/o Chino Corona Rd.

Project Name: MCH (Dirt Haul Truck Trip
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,959 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,096 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:	66.2%	13.5%	20.3%	89.82%
Medium Trucks:	77.1%	5.3%	17.6%	4.52%
Heavy Trucks:	34.6%	20.8%	44.6%	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:	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	2.60	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-10.38	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.40	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:	70.2	67.6	66.7	63.7	70.9	71.3
Medium Trucks:	68.2	66.3	60.7	61.2	68.6	68.7
Heavy Trucks:	74.0	68.6	72.4	71.0	77.2	77.6
Vehicle Noise:	76.3	72.4	73.7	72.1	78.6	79.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	224	483	1,041	2,242
CNEL:	237	511	1,100	2,371

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Pine Av.
Road Segment: w/o W. Preserve Loop

Project Name: MCH (Dirt Haul Truck Trip
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,495 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,750 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:	66.2%	13.5%	20.3%	87.79%
Medium Trucks:	77.1%	5.3%	17.6%	4.42%
Heavy Trucks:	27.5%	23.5%	49.0%	7.79%

Noise Source 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	0.03	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-12.96	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	65.0	64.2	61.2	68.3	68.8
Medium Trucks:	65.7	63.7	58.1	58.6	66.0	66.2
Heavy Trucks:	72.9	66.5	71.9	70.3	76.5	76.8
Vehicle Noise:	74.6	70.0	72.7	71.0	77.4	77.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	187	403	868	1,870
CNEL:	198	427	920	1,982

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Pine Av.
Road Segment: w/o E. Preserve Loop

Project Name: MCH (Dirt Haul Truck Trip
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,714 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,771 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:	66.2%	13.5%	20.3%	89.86%
Medium Trucks:	77.1%	5.3%	17.6%	4.52%
Heavy Trucks:	34.8%	20.7%	44.4%	5.62%

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:	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	2.13	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-10.86	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.92	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	67.1	66.3	63.3	70.4	70.9
Medium Trucks:	67.8	65.8	60.2	60.7	68.1	68.3
Heavy Trucks:	73.5	68.1	71.9	70.4	76.7	77.1
Vehicle Noise:	75.8	71.9	73.2	71.6	78.1	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	207	446	962	2,072
CNEL:	219	472	1,017	2,191

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Pine Av.
Road Segment: w/o Hellman Av.

Project Name: MCH (Dirt Haul Truck Trip
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,563 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,756 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:	66.2%	13.5%	20.3%	89.84%
Medium Trucks:	77.1%	5.3%	17.6%	4.52%
Heavy Trucks:	34.7%	20.8%	44.5%	5.64%

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:	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	2.10	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-10.88	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.92	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	67.1	66.2	63.2	70.4	70.8
Medium Trucks:	67.7	65.8	60.2	60.6	68.1	68.2
Heavy Trucks:	73.5	68.1	71.9	70.4	76.7	77.1
Vehicle Noise:	75.8	71.9	73.2	71.6	78.1	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	207	446	960	2,069
CNEL:	219	471	1,015	2,188

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Chino Corona Rd.
Road Segment: s/o Pine Av.

Project Name: MCH (Dirt Haul Truck Trip
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,256 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	426 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	30.0 feet
Centerline Dist. to Observer:	30.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	66.2%	13.5%	20.3%	67.33%
Medium Trucks:	77.1%	5.3%	17.6%	3.39%
Heavy Trucks:	13.6%	28.7%	57.8%	29.28%

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:	29.816
Medium Trucks:	29.518
Heavy Trucks:	29.547

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-7.27	3.26	-1.20	*-4.49*	0.000	0.000
Medium Trucks:	79.45	-20.25	3.33	-1.20	*-4.86*	0.000	0.000
Heavy Trucks:	84.25	-10.88	3.32	-1.20	*-5.77*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	63.3	60.7	59.8	56.8	64.0	64.4
Medium Trucks:	61.3	59.4	53.8	54.2	61.7	61.8
Heavy Trucks:	75.5	66.0	75.3	73.6	79.6	80.0
Vehicle Noise:	75.9	67.8	75.4	73.7	79.8	80.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	135	291	627	1,350
CNEL:	144	310	668	1,438

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Chino Corona Rd.
Road Segment: e/o Cucamonga Av.

Project Name: MCH (Dirt Haul Truck Trip
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,256 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	426 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	30.0 feet
Centerline Dist. to Observer:	30.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	66.2%	13.5%	20.3%	67.33%
Medium Trucks:	77.1%	5.3%	17.6%	3.39%
Heavy Trucks:	13.6%	28.7%	57.8%	29.28%

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:	29.816
Medium Trucks:	29.518
Heavy Trucks:	29.547

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-6.75	3.26	-1.20	*-4.49*	0.000	0.000
Medium Trucks:	77.72	-19.74	3.33	-1.20	*-4.86*	0.000	0.000
Heavy Trucks:	82.99	-10.37	3.32	-1.20	*-5.77*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	61.8	59.2	58.4	55.4	62.5	63.0
Medium Trucks:	60.1	58.2	52.6	53.0	60.4	60.6
Heavy Trucks:	74.7	65.3	74.6	72.8	78.9	79.3
Vehicle Noise:	75.1	66.9	74.7	72.9	79.0	79.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	120	258	557	1,200
CNEL:	128	275	593	1,278

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Hellman Av.
Road Segment: s/o Pine Av.

Project Name: MCH (Dirt Haul Truck Trip
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,168 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,417 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	66.2%	13.5%	20.3%	86.48%
Medium Trucks:	77.1%	5.3%	17.6%	4.35%
Heavy Trucks:	24.6%	24.5%	50.8%	9.17%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.96	1.01	-1.20	*-4.64*	0.000	0.000
Medium Trucks:	79.45	-13.94	1.04	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-10.70	1.04	-1.20	*-5.44*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	67.3	64.7	63.8	60.8	68.0	68.5
Medium Trucks:	65.4	63.4	57.8	58.3	65.7	65.9
Heavy Trucks:	73.4	66.5	72.5	70.9	77.1	77.4
Vehicle Noise:	74.9	69.9	73.2	71.5	77.8	78.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	163	352	757	1,632
CNEL:	173	373	804	1,731

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Pine Av.
Road Segment: e/o Euclid Av.

Project Name: MCH (Dirt Haul Truck Trip
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,935 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,694 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:	66.2%	13.5%	20.3%	89.28%
Medium Trucks:	77.1%	5.3%	17.6%	4.49%
Heavy Trucks:	96.0%	0.4%	3.6%	6.23%

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	1.97	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-11.01	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.59	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:	69.6	67.0	66.1	63.1	70.3	70.7
Medium Trucks:	67.6	65.7	60.1	60.5	67.9	68.1
Heavy Trucks:	73.8	72.9	55.5	59.8	71.2	71.3
Vehicle Noise:	75.9	74.5	67.4	66.2	74.8	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	125	270	581	1,253
CNEL:	129	279	600	1,293

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Pine Av.
Road Segment: w/o Chino Corona Rd.

Project Name: MCH (Dirt Haul Truck Trip
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,959 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,096 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:	66.2%	13.5%	20.3%	89.82%
Medium Trucks:	77.1%	5.3%	17.6%	4.52%
Heavy Trucks:	95.6%	0.5%	3.9%	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:	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	2.60	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-10.38	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.40	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:	70.2	67.6	66.7	63.7	70.9	71.3
Medium Trucks:	68.2	66.3	60.7	61.2	68.6	68.7
Heavy Trucks:	74.0	73.0	56.1	60.4	71.5	71.6
Vehicle Noise:	76.3	74.8	68.0	66.8	75.3	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	135	291	627	1,350
CNEL:	140	301	648	1,395

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Pine Av.
Road Segment: w/o W. Preserve Loop

Project Name: MCH (Dirt Haul Truck Trip
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,495 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,750 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:	66.2%	13.5%	20.3%	87.79%
Medium Trucks:	77.1%	5.3%	17.6%	4.42%
Heavy Trucks:	96.9%	0.3%	2.8%	7.79%

Noise Source 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	0.03	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-12.96	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	65.0	64.2	61.2	68.3	68.8
Medium Trucks:	65.7	63.7	58.1	58.6	66.0	66.2
Heavy Trucks:	72.9	72.0	53.5	57.8	70.1	70.1
Vehicle Noise:	74.6	73.3	65.4	64.2	73.2	73.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	98	212	457	984
CNEL:	101	218	470	1,013

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Pine Av.
Road Segment: w/o E. Preserve Loop

Project Name: MCH (Dirt Haul Truck Trip
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,714 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,771 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:	66.2%	13.5%	20.3%	89.86%
Medium Trucks:	77.1%	5.3%	17.6%	4.52%
Heavy Trucks:	95.5%	0.5%	4.0%	5.62%

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:	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	2.13	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-10.86	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.92	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	67.1	66.3	63.3	70.4	70.9
Medium Trucks:	67.8	65.8	60.2	60.7	68.1	68.3
Heavy Trucks:	73.5	72.5	55.6	59.9	71.0	71.1
Vehicle Noise:	75.8	74.3	67.5	66.3	74.8	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	125	270	581	1,252
CNEL:	129	279	601	1,294

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Pine Av.
Road Segment: w/o Hellman Av.

Project Name: MCH (Dirt Haul Truck Trip
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,563 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,756 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:	66.2%	13.5%	20.3%	89.84%
Medium Trucks:	77.1%	5.3%	17.6%	4.52%
Heavy Trucks:	95.6%	0.5%	4.0%	5.64%

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:	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	2.10	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-10.88	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.92	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	67.1	66.2	63.2	70.4	70.8
Medium Trucks:	67.7	65.8	60.2	60.6	68.1	68.2
Heavy Trucks:	73.5	72.5	55.6	59.9	71.0	71.0
Vehicle Noise:	75.8	74.3	67.5	66.3	74.8	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	125	269	580	1,249
CNEL:	129	278	599	1,290

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Chino Corona Rd.
Road Segment: s/o Pine Av.

Project Name: MCH (Dirt Haul Truck Trip
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,256 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	426 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	30.0 feet
Centerline Dist. to Observer:	30.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	66.2%	13.5%	20.3%	67.33%
Medium Trucks:	77.1%	5.3%	17.6%	3.39%
Heavy Trucks:	99.4%	0.1%	0.6%	29.28%

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:	29.816
Medium Trucks:	29.518
Heavy Trucks:	29.547

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-7.27	3.26	-1.20	*-4.49*	0.000	0.000
Medium Trucks:	79.45	-20.25	3.33	-1.20	*-4.86*	0.000	0.000
Heavy Trucks:	84.25	-10.88	3.32	-1.20	*-5.77*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	63.3	60.7	59.8	56.8	64.0	64.4
Medium Trucks:	61.3	59.4	53.8	54.2	61.7	61.8
Heavy Trucks:	75.5	74.7	49.2	53.5	71.9	71.9
Vehicle Noise:	75.9	75.0	61.1	59.9	72.9	73.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	47	101	217	468
CNEL:	47	102	220	473

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Chino Corona Rd.
Road Segment: e/o Cucamonga Av.

Project Name: MCH (Dirt Haul Truck Trip
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,256 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	426 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	30.0 feet
Centerline Dist. to Observer:	30.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	66.2%	13.5%	20.3%	67.33%
Medium Trucks:	77.1%	5.3%	17.6%	3.39%
Heavy Trucks:	99.4%	0.1%	0.6%	29.28%

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:	29.816
Medium Trucks:	29.518
Heavy Trucks:	29.547

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-6.75	3.26	-1.20	*-4.49*	0.000	0.000
Medium Trucks:	77.72	-19.74	3.33	-1.20	*-4.86*	0.000	0.000
Heavy Trucks:	82.99	-10.37	3.32	-1.20	*-5.77*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	61.8	59.2	58.4	55.4	62.5	63.0
Medium Trucks:	60.1	58.2	52.6	53.0	60.4	60.6
Heavy Trucks:	74.7	73.9	48.4	52.8	71.2	71.2
Vehicle Noise:	75.1	74.2	59.7	58.7	72.0	72.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	41	88	190	410
CNEL:	41	89	192	414

Monday, May 20, 2019

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Hellman Av.
Road Segment: s/o Pine Av.

Project Name: MCH (Dirt Haul Truck Trip
Job Number: 10351

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,168 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,417 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	51 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	49.0 feet
Centerline Dist. to Observer:	49.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	66.2%	13.5%	20.3%	86.48%
Medium Trucks:	77.1%	5.3%	17.6%	4.35%
Heavy Trucks:	97.4%	0.3%	2.3%	9.17%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	-0.96	1.01	-1.20	*-4.64*	0.000	0.000
Medium Trucks:	79.45	-13.94	1.04	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-10.70	1.04	-1.20	*-5.44*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	67.3	64.7	63.8	60.8	68.0	68.5
Medium Trucks:	65.4	63.4	57.8	58.3	65.7	65.9
Heavy Trucks:	73.4	72.5	53.2	57.5	70.4	70.4
Vehicle Noise:	74.9	73.6	65.1	63.9	73.2	73.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	81	173	374	805
CNEL:	83	178	384	827

Monday, May 20, 2019

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APPENDIX 9.1:

OPERATIONAL NOISE LEVEL CALCULATIONS

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STATIONARY SOURCE NOISE PREDICTION MODEL

6/17/2019

Observer Location: **R1**
Source: Air Conditioning Unit (Roof-Top)
Condition: Operational

Project Name: MCH
Job Number: 10351
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	3,808.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	3,808.0 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	0.0	74.4	76.1	77.4	77.7	78.2
Distance Attenuation	3,808.0	-57.6	-57.6	-57.6	-57.6	-57.6	-57.6
Shielding (Barrier Attenuation)	3,808.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-57.6	16.8	18.5	19.8	20.1	20.6
39 Minute Hourly Adjustment		**-59.5**	**14.9**	**16.6**	**17.9**	**18.2**	**18.7**

STATIONARY SOURCE NOISE PREDICTION MODEL

6/17/2019

Observer Location: **R1**
Source: Truck Unloading/Docking Activity
Condition: Operational

Project Name: MCH
Job Number: 10351
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	3,995.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	3,995.0 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	0.0	64.2	67.2	71.8	75.6	80.0
Distance Attenuation	3,995.0	-42.5	-42.5	-42.5	-42.5	-42.5	-42.5
Shielding (Barrier Attenuation)	3,995.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-42.5	21.7	24.7	29.3	33.1	37.5
60 Minute Hourly Adjustment		**-42.5**	**21.7**	**24.7**	**29.3**	**33.1**	**37.5**

STATIONARY SOURCE NOISE PREDICTION MODEL

6/17/2019

Observer Location: **R1**
Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: MCH
Job Number: 10351
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	3,685.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	3,685.0 feet	*Noise Source Height:*	5.0 feet
Barrier Distance to Observer:	0.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	0.0 feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	10.0	0.0	49.0	50.0	55.0	61.0	71.9
Distance Attenuation	3,685.0	-51.3	-51.3	-51.3	-51.3	-51.3	-51.3
Shielding (Barrier Attenuation)	3,685.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-51.3	-2.3	-1.3	3.7	9.7	20.6
60 Minute Hourly Adjustment		**-51.3**	**-2.3**	**-1.3**	**3.7**	**9.7**	**20.6**

STATIONARY SOURCE NOISE PREDICTION MODEL

6/17/2019

Observer Location: **R2**
Source: Air Conditioning Unit (Roof-Top)
Condition: Operational

Project Name: MCH
Job Number: 10351
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	3,132.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	3,132.0 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	0.0	74.4	76.1	77.4	77.7	78.2
Distance Attenuation	3,132.0	-55.9	-55.9	-55.9	-55.9	-55.9	-55.9
Shielding (Barrier Attenuation)	3,132.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-55.9	18.5	20.2	21.5	21.8	22.3
39 Minute Hourly Adjustment		**-57.8**	**16.6**	**18.3**	**19.6**	**19.9**	**20.4**

STATIONARY SOURCE NOISE PREDICTION MODEL

6/17/2019

Observer Location: **R2**
Source: Truck Unloading/Docking Activity
Condition: Operational

Project Name: MCH
Job Number: 10351
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	3,355.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	3,355.0 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	0.0	64.2	67.2	71.8	75.6	80.0
Distance Attenuation	3,355.0	-41.0	-41.0	-41.0	-41.0	-41.0	-41.0
Shielding (Barrier Attenuation)	3,355.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-41.0	23.2	26.2	30.8	34.6	39.0
60 Minute Hourly Adjustment		**-41.0**	**23.2**	**26.2**	**30.8**	**34.6**	**39.0**

STATIONARY SOURCE NOISE PREDICTION MODEL

6/17/2019

Observer Location: **R2**
Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: MCH
Job Number: 10351
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	2,983.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	2,983.0 feet	*Noise Source Height:*	5.0 feet
Barrier Distance to Observer:	0.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	0.0 feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	10.0	0.0	49.0	50.0	55.0	61.0	71.9
Distance Attenuation	2,983.0	-49.5	-49.5	-49.5	-49.5	-49.5	-49.5
Shielding (Barrier Attenuation)	2,983.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-49.5	-0.5	0.5	5.5	11.5	22.4
60 Minute Hourly Adjustment		**-49.5**	**-0.5**	**0.5**	**5.5**	**11.5**	**22.4**

STATIONARY SOURCE NOISE PREDICTION MODEL

6/17/2019

Observer Location: **R3**
Source: Air Conditioning Unit (Roof-Top)
Condition: Operational

Project Name: MCH
Job Number: 10351
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	4,943.0	feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	4,943.0	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	0.0	74.4	76.1	77.4	77.7	78.2
Distance Attenuation	4,943.0	-59.9	-59.9	-59.9	-59.9	-59.9	-59.9
Shielding (Barrier Attenuation)	4,943.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-59.9	14.5	16.2	17.5	17.8	18.3
39 Minute Hourly Adjustment		**-61.8**	**12.6**	**14.3**	**15.6**	**15.9**	**16.4**

STATIONARY SOURCE NOISE PREDICTION MODEL

6/17/2019

Observer Location: **R3**
Source: Truck Unloading/Docking Activity
Condition: Operational

Project Name: MCH
Job Number: 10351
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	5,030.0	feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	5,030.0	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	0.0	64.2	67.2	71.8	75.6	80.0
Distance Attenuation	5,030.0	-44.5	-44.5	-44.5	-44.5	-44.5	-44.5
Shielding (Barrier Attenuation)	5,030.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-44.5	19.7	22.7	27.3	31.1	35.5
60 Minute Hourly Adjustment		**-44.5**	**19.7**	**22.7**	**27.3**	**31.1**	**35.5**

STATIONARY SOURCE NOISE PREDICTION MODEL 6/17/2019

Observer Location: **R3** *Project Name:* MCH
Source: Parking Lot Vehicle Movements *Job Number:* 10351
Condition: Operational *Analyst:* A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	6,330.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	6,330.0 feet	*Noise Source Height:*	5.0 feet
Barrier Distance to Observer:	0.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	0.0 feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	10.0	0.0	49.0	50.0	55.0	61.0	71.9
Distance Attenuation	6,330.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0
Shielding (Barrier Attenuation)	6,330.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-56.0	-7.0	-6.0	-1.0	5.0	15.9
60 Minute Hourly Adjustment		**-56.0**	**-7.0**	**-6.0**	**-1.0**	**5.0**	**15.9**

STATIONARY SOURCE NOISE PREDICTION MODEL 6/17/2019

Observer Location: **R15** *Project Name:* MCH
Source: Air Conditioning Unit (Roof-Top) *Job Number:* 10351
Condition: Operational *Analyst:* A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	860.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	860.0 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	0.0	74.4	76.1	77.4	77.7	78.2
Distance Attenuation	860.0	-44.7	-44.7	-44.7	-44.7	-44.7	-44.7
Shielding (Barrier Attenuation)	860.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-44.7	29.7	31.4	32.7	33.0	33.5
39 Minute Hourly Adjustment		**-46.6**	**27.8**	**29.5**	**30.8**	**31.1**	**31.6**

STATIONARY SOURCE NOISE PREDICTION MODEL

6/17/2019

Observer Location: **R15**
Source: Truck Unloading/Docking Activity
Condition: Operational

Project Name: MCH
Job Number: 10351
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	887.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	887.0 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	0.0	64.2	67.2	71.8	75.6	80.0
Distance Attenuation	887.0	-29.4	-29.4	-29.4	-29.4	-29.4	-29.4
Shielding (Barrier Attenuation)	887.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-29.4	34.8	37.8	42.4	46.2	50.6
60 Minute Hourly Adjustment		**-29.4**	**34.8**	**37.8**	**42.4**	**46.2**	**50.6**

STATIONARY SOURCE NOISE PREDICTION MODEL

6/17/2019

Observer Location: **R15**
Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: MCH
Job Number: 10351
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	715.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	715.0 feet	*Noise Source Height:*	5.0 feet
Barrier Distance to Observer:	0.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	0.0 feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	10.0	0.0	49.0	50.0	55.0	61.0	71.9
Distance Attenuation	715.0	-37.1	-37.1	-37.1	-37.1	-37.1	-37.1
Shielding (Barrier Attenuation)	715.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-37.1	11.9	12.9	17.9	23.9	34.8
60 Minute Hourly Adjustment		**-37.1**	**11.9**	**12.9**	**17.9**	**23.9**	**34.8**

STATIONARY SOURCE NOISE PREDICTION MODEL

6/17/2019

Observer Location: **R16**
Source: Air Conditioning Unit (Roof-Top)
Condition: Operational

Project Name: MCH
Job Number: 10351
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	871.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	871.0 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	0.0	74.4	76.1	77.4	77.7	78.2
Distance Attenuation	871.0	-44.8	-44.8	-44.8	-44.8	-44.8	-44.8
Shielding (Barrier Attenuation)	871.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-44.8	29.6	31.3	32.6	32.9	33.4
39 Minute Hourly Adjustment		**-46.7**	**27.7**	**29.4**	**30.7**	**31.0**	**31.5**

STATIONARY SOURCE NOISE PREDICTION MODEL

6/17/2019

Observer Location: **R16**
Source: Truck Unloading/Docking Activity
Condition: Operational

Project Name: MCH
Job Number: 10351
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	896.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	896.0 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	0.0	64.2	67.2	71.8	75.6	80.0
Distance Attenuation	896.0	-29.5	-29.5	-29.5	-29.5	-29.5	-29.5
Shielding (Barrier Attenuation)	896.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-29.5	34.7	37.7	42.3	46.1	50.5
60 Minute Hourly Adjustment		**-29.5**	**34.7**	**37.7**	**42.3**	**46.1**	**50.5**

STATIONARY SOURCE NOISE PREDICTION MODEL

6/17/2019

Observer Location: **R16**
Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: MCH
Job Number: 10351
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	2,213.0	feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	2,213.0	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:*	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)	10.0	0.0	49.0	50.0	55.0	61.0	71.9
Distance Attenuation	2,213.0	-46.9	-46.9	-46.9	-46.9	-46.9	-46.9
Shielding (Barrier Attenuation)	2,213.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-46.9	2.1	3.1	8.1	14.1	25.0
60 Minute Hourly Adjustment		**-46.9**	**2.1**	**3.1**	**8.1**	**14.1**	**25.0**

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APPENDIX 3.1:

CITY OF CHINO MUNICIPAL CODE

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APPENDIX 5.1:

STUDY AREA PHOTOS

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APPENDIX 5.2:

NOISE LEVEL MEASUREMENT WORKSHEETS

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APPENDIX 7.1:

OFF-SITE TRAFFIC NOISE LEVEL CONTOURS

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APPENDIX 9.1:

OPERATIONAL NOISE LEVEL CALCULATIONS

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