Altitude Business Centre

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
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
Hz	Hertz
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
OPR	Office of Planning and Research
PPV	Peak particle velocity
Project	Altitude Business Centre
REMEL	Reference Energy Mean Emission Level
RMS	Root-mean-square
VdB	Vibration Decibels

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EXECUTIVE SUMMARY

Urban Crossroads, Inc. has prepared this noise study to determine the noise exposure and the necessary noise mitigation measures for the proposed Altitude Business Centre development ("Project"). The Project site is located between Kimball Avenue and Bickmore Avenue on either side of the future Mayhew Avenue in the City of Chino. The total Project development is proposed to consist of up to 1,313,000 square feet (sf) of building space with warehousing, light industrial, business park, and self-storage uses. At the time this noise analysis was prepared, the future tenants of the proposed Project were unknown, and therefore, this noise study includes a conservative analysis of the proposed Project uses. This study has been prepared to satisfy applicable City of Chino standards and thresholds of significance based on guidance provided by Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1)

OFF-SITE TRAFFIC NOISE ANALYSIS

Traffic generated by the Project will influence the traffic noise levels in surrounding off-site areas. To quantify these off-site traffic noise increases on existing and future land uses, the changes in traffic noise levels on 42 study-area roadway segments were calculated based on the change in the average daily traffic (ADT) volumes. The traffic noise levels provided in this analysis are based on the traffic forecasts found in the *Altitude Business Centre Traffic Impact Analysis* prepared by Urban Crossroads, Inc. (2) To assess the off-site noise level impacts associated with the proposed Project, noise contour boundaries were developed for Existing, Opening Year 2018, Opening Year 2019, Opening Year 2020, Horizon Year 2040 without Limonite Avenue extension, and Horizon Year 2040 with Limonite Avenue extension conditions. The off-site traffic noise analysis shows that the unmitigated Project-related traffic noise level increases under all with Project traffic scenarios are considered *less than significant* impacts at land uses adjacent to the study roadway segments.

OPERATIONAL NOISE ANALYSIS

Using reference noise levels to represent the expected noise sources from the Altitude Business Centre site, this analysis estimates the Project-related stationary-source noise levels at nearby sensitive receiver locations (R1 to R7). The normal activities associated with the proposed Altitude Business Centre 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, parking lot vehicle movements, and self-storage activity. The operational noise analysis shows that the Project-related stationary-source noise levels at all receiver locations (R1 to R7) will satisfy the applicable City of Chino daytime and nighttime exterior noise level standards, and therefore, the operational noise level impacts will be *less than significant*.

Further, this analysis demonstrates that the Project will not contribute a long-term operational noise level impact to the existing ambient noise environment at any of the sensitive receiver locations (R1 to R7). Therefore, the operational noise level impacts associated with the proposed 24-hour seven days per week 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, parking lot vehicle movements, and self-storage activity, are considered *less than significant*.

OPERATIONAL VIBRATION ANALYSIS

The operation of the Project site will include heavy trucks moving on site to and from the loading dock areas. Truck vibration levels are dependent on vehicle characteristics, load, speed, and pavement conditions. Typical vibration levels for the Altitude Business Centre 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 satisfy the City of Chino vibration threshold of 0.05 in/sec RMS, and therefore, will be *less than significant*.

CONSTRUCTION NOISE ANALYSIS

Construction noise represents a short-term increase on the ambient noise levels. Construction-related noise impacts are expected to create temporary and intermittent high-level noise conditions at receivers surrounding the Project site when certain activities occur at the closest point to the nearby receiver locations from primary Project construction activity. Using sample reference noise levels to represent the planned construction activities of the Altitude Business Centre site, this analysis estimates the Project-related construction noise levels at nearby sensitive receiver locations and evaluates potential impacts based on the City of Chino 65 dBA L_{eq} construction noise level threshold.

Since Project construction will include potential off-site roadway and utility improvements which extend beyond the Project site boundaries, as shown on Exhibit ES-A, the construction noise and vibration analyses include three additional sensitive receiver locations (R8 to R10) for analysis adjacent to the off-site improvement areas of activity. Further, the construction noise analysis evaluates the highest reference construction noise activity at the nearby receiver locations from the daytime, nighttime concrete pour, and off-site improvement activities related to Project construction.

DAYTIME CONSTRUCTION NOISE LEVELS

The daytime construction noise levels are expected to approach 77.2 dBA L_{eq} and will exceed the City of Chino 65 dBA L_{eq} significance threshold during temporary Project construction activities at three of the 10 sensitive receiver locations: R1, and R3 to R5. Therefore, the unmitigated noise impact due to daytime Project construction is considered *potentially significant* at receiver locations R1, and R3 to R5 during daytime construction activities. All other receiver locations will experience unmitigated *less than significant* noise impacts during daytime construction activities.

NIGHTTIME CONCRETE POUR NOISE LEVELS

Nighttime concrete pour activity noise levels are shown to approach 59.0 dBA L_{eq} and will satisfy the City of Chino 65 dBA L_{eq} significance threshold during temporary Project construction activities at all the sensitive receiver locations. Therefore, the unmitigated noise impact due to nighttime Project construction is considered *less than significant*.

OFF-SITE IMPROVEMENT ACTIVITY NOISE LEVELS

Off-site improvement activity noise levels are shown to approach 65.3 dBA L_{eq} and will exceed the City of Chino 65 dBA L_{eq} significance threshold during temporary Project construction activities at one of the 10 sensitive receiver locations, R9, adjacent to off-site improvements on Mayhew Avenue. Therefore, the unmitigated noise impact due to Project off-site improvement construction activities is considered *potentially significant* at receiver location R9. All other receiver locations will experience unmitigated *less than significant* noise impacts during off-site improvement activities.

CONSTRUCTION NOISE MITIGATION MEASURES

Temporary construction noise mitigation measures are required to reduce these impacts at receiver locations R1, and R3 to R5 during the daytime hours, and at R9 during off-site improvements. This includes mitigation in the form of a 150-foot buffer zone for large construction equipment (e.g. dozers, graders, scrapers, etc.) from receiver locations R1 and R3 to R5, if built and occupied at the time of Project construction, and an 8-foot high temporary noise barrier for receiver locations R4 and R5 if built and occupied at the time of Project construction. Further, the existing residential home represented by receiver location R9 adjacent to off-site improvements shall require either a temporary 8-foot high noise barrier or sound dampening mats capable of a minimum 5 dBA L_{eq} noise reduction for heavy mobile equipment engine compartments (e.g., cement mixers, dozers), as shown on Exhibit ES-A.

The construction noise analysis presents a conservative approach with the highest noise-level-producing equipment for each stage of Project construction operating at the closest point from primary construction activity to the nearby sensitive receiver locations. This scenario is unlikely to occur during typical construction activities and likely overstates the construction noise levels which will be experienced at each receiver location. With the construction noise mitigation measures identified in this noise study, shown on Exhibit ES-A, the worst-case construction noise levels at the nearby residential receivers would be reduced to a *less than significant* impact with mitigation. Though construction noise is temporary, intermittent and of short duration, and will not present any long-term impacts, the following mitigation measures are required to reduce noise and vibration levels produced by the construction equipment to the nearby sensitive residential land uses.

On-Site Construction Activity

- Install minimum 8-foot high temporary construction noise barriers at the construction activity boundaries adjacent to sensitive receivers R1, and R3 to R5, if they represent built and occupied noise-sensitive use at the time of Project construction, as shown on Exhibit ES-A.

The noise control barriers must have a solid face from top to bottom. 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.

- The use of large construction equipment (e.g., dozers, graders, scrapers) with sound power level ratings greater than 100 dBA. If the contractor can demonstrate that specific pieces of large construction equipment have sound power level ratings equal to or below 100 dBA, then the equipment shall be allowed to operate within the buffer zone shown on Exhibit ES-A.

Off-Site Construction Activity

- One of the following two mitigation measures (temporary noise barriers or sound dampening mats) shall be used during off-site improvement construction activities on Mayhew Avenue adjacent to receiver location R9:
  - Install minimum 8-foot high temporary construction noise barrier at the construction activity boundaries adjacent to sensitive receiver R9, if R9 represents built and occupied noise-sensitive use at the time of Project construction, as shown on Exhibit ES-A. The noise control barriers must have a solid face from top to bottom. 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.
  - Install sound dampening mats or blankets to the engine compartments of heavy mobile equipment (e.g., cement mixers, dozers) 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, provided in Appendix 11.2). (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.

All Construction Activity

- Prior to approval of grading plans and/or issuance of building permits, plans shall include a note indicating that Project construction activities shall comply with the City of Chino Municipal Code requirements.
- During all Project site construction, the construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards. The construction contractor shall place all stationary construction equipment so that emitted noise is directed away from the noise sensitive receptors nearest the Project site.
- The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receivers nearest the Project site during all Project construction (i.e., to the center).
- The contractor shall design delivery routes to minimize the exposure of sensitive land uses or residential dwellings to delivery truck-related noise.

CONSTRUCTION VIBRATION ANALYSIS

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods used, distance to the affected structures and soil type. It is expected that ground-borne vibration from Project construction activities would cause only intermittent, localized intrusion. Based on the reference vibration levels provided by the FTA, a large bulldozer represents the peak source of vibration with a reference velocity of 0.089 in/sec PPV at 25 feet. At distances ranging from 62 to 1,691 feet from Project construction activities, construction vibration velocity levels are expected to approach 0.016 in/sec RMS at the nearby receiver locations. Based on the City of Chino Municipal Code standard of 0.05 in/sec RMS, the proposed Project construction activities will satisfy the vibration standard of 0.05 in/sec RMS at all receiver locations during Project construction. Therefore, the Project-related vibration impacts will be *less than significant* during the construction activities at the Project site.

Further, the Project-related construction vibration levels do not represent levels capable of causing building damage to nearby residential homes. The FTA identifies construction vibration levels capable of building damage ranging from 0.12 to 0.5 in/sec PPV. (3) The peak Project-construction vibration levels, approaching 0.023 in/sec PPV, will not exceed the FTA vibration levels for building damage at the residential homes near the Project site. Further, the impacts at the site of the closest sensitive receivers are unlikely to be sustained during the entire construction period but will occur rather only during the times that heavy construction equipment is operating adjacent to the Project site perimeter.

SUMMARY OF SIGNIFICANCE FINDINGS

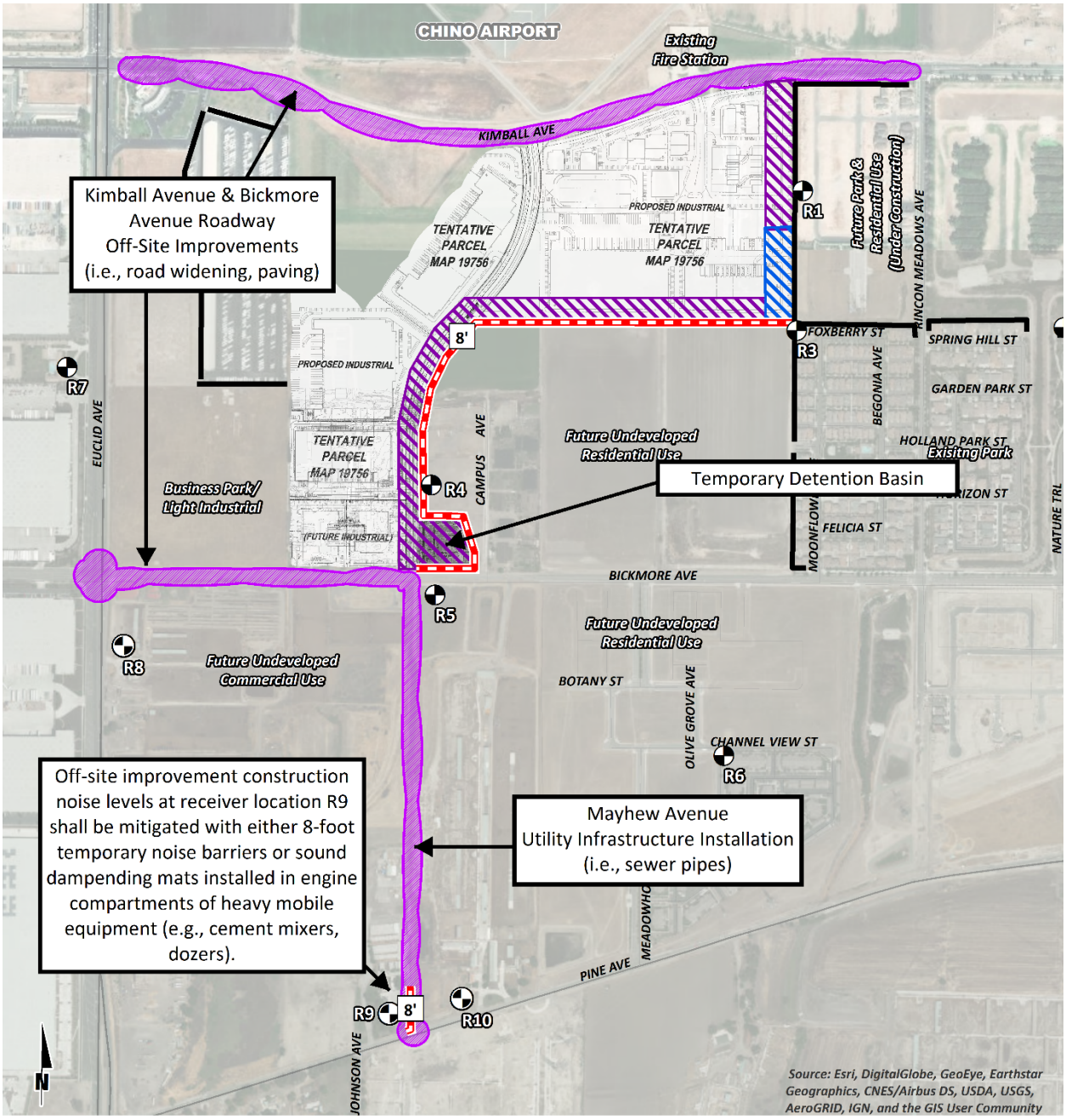
The results of this Altitude Business Centre Noise Impact Analysis are summarized below based on the significance criteria in Section 4 of this report. Table ES-1 shows the findings of significance for each potential noise and/or vibration impact before and after any required mitigation measures.

TABLE ES-1: SUMMARY OF SIGNIFICANCE FINDINGS

Analysis	Report Section	Project-Related Significance Findings	
		Unmitigated	Mitigated
Off-Site Traffic Noise	7	*Less Than Significant*	*n/a*
On-Site Aircraft Noise	3	*Less Than Significant*	*n/a*
Operational Noise	9	*Less Than Significant*	*n/a*
Operational Vibration		*Less Than Significant*	*n/a*
Construction Noise	10	*Potentially Significant*	*Less Than Significant*
Construction Vibration		*Less Than Significant*	*n/a*

"n/a" = No mitigation required since the impact will be less than significant.

EXHIBIT ES-A: CONSTRUCTION NOISE MITIGATION MEASURES



LEGEND:

- Receiver Locations
- Off-Site Improvement Receiver Locations
- Existing 6-Foot High
- Potential Off-Site Improvement Areas
- Adjacent to existing sensitive receiver locations, a 150-foot buffer for large construction equipment (e.g., dozers, graders, scrapers) with sound power level ratings greater than 100 dBA is required.
- 8-foot high temporary noise barriers required if adjacent residential use is built and
- If adjacent planned residential use is built and occupied, a 150-foot buffer for large construction equipment (e.g., dozers, graders, scrapers) with sound power level ratings greater than 100 dBA is required.

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1 INTRODUCTION

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

1.1 SITE LOCATION

The proposed Altitude Business Centre site is located between Kimball Avenue and Bickmore Avenue on either side of the future Mayhew Avenue in the City of Chino, as shown on Exhibit 1-A. The Project site is currently occupied by existing agricultural uses. Existing land uses near the site include existing residential homes east and south of the Project site, with future residential-designated land use located on undeveloped land adjacent to the southern site boundary. At the time of this noise study, the residential-designated use east of the Project site was under construction. An existing fire station is located north of the Project site across Kimball Avenue, and McBride's RV Storage is located immediately west of the Project site. Chino Airport is located roughly 450 feet north of the Project site across Kimball Avenue.

1.2 PROJECT DESCRIPTION

Exhibit 1-B illustrates the preliminary Project site plan. As shown on Exhibit 1-B, the total development is proposed to consist of up to 1,313,000 square feet (sf) of building space with the following uses:

- 715,000 sf of warehousing use within 4 buildings (Buildings 3, 4, 5, and 6). Warehouse use has been utilized for a portion of the buildings that are proposed to include dock doors;
- 255,000 sf of general light industrial use within 3 buildings (Buildings 1, 2, N, and O). General Light Industrial use has been utilized for remaining buildings that are proposed to include dock doors;
- 233,000 sf of business park use within 14 buildings (Buildings 7A, 7B, 8, 9, and A through L). The business park land use has been utilized for all the remaining smaller buildings without dock doors; and
- 110,000 sf of self-storage use within 1 building (Building 2).

The Project is planned to be completed in 3 phases, as outlined on Exhibit 1-B:

- Phase 1 (2018): Buildings 4, 5, and 6 – 515,000 sf Warehouse use;

- Phase 2 (2019): Buildings 1, 2, and 3 – 194,000 sf of General Light Industrial use and 200,000 sf Warehouse use; and
- Phase 3 (2020): Buildings M, N, O, 7A, 7B, 8, 9, and A through L – 61,000 sf General Light Industrial use, 233,000 sf Business Park use, and 110,000 sf of Self-Storage use.

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, parking lot vehicle movements, and self-storage activity. This noise analysis is intended to describe noise level impacts associated with the expected typical operational activities at the Project site.

Per the *Altitude Business Centre Traffic Impact Analysis* prepared by Urban Crossroads, Inc. the Project is expected to generate a net total of approximately 7,496 trip-ends per day (actual vehicles) and includes 1,695 truck trip-ends per day from the proposed buildings within the Project site. (2) This noise study relies on the net Project trips (as opposed to the passenger car equivalents) to accurately account for the effect of individual truck trips on the study area roadway network.

EXHIBIT 1-A: LOCATION MAP

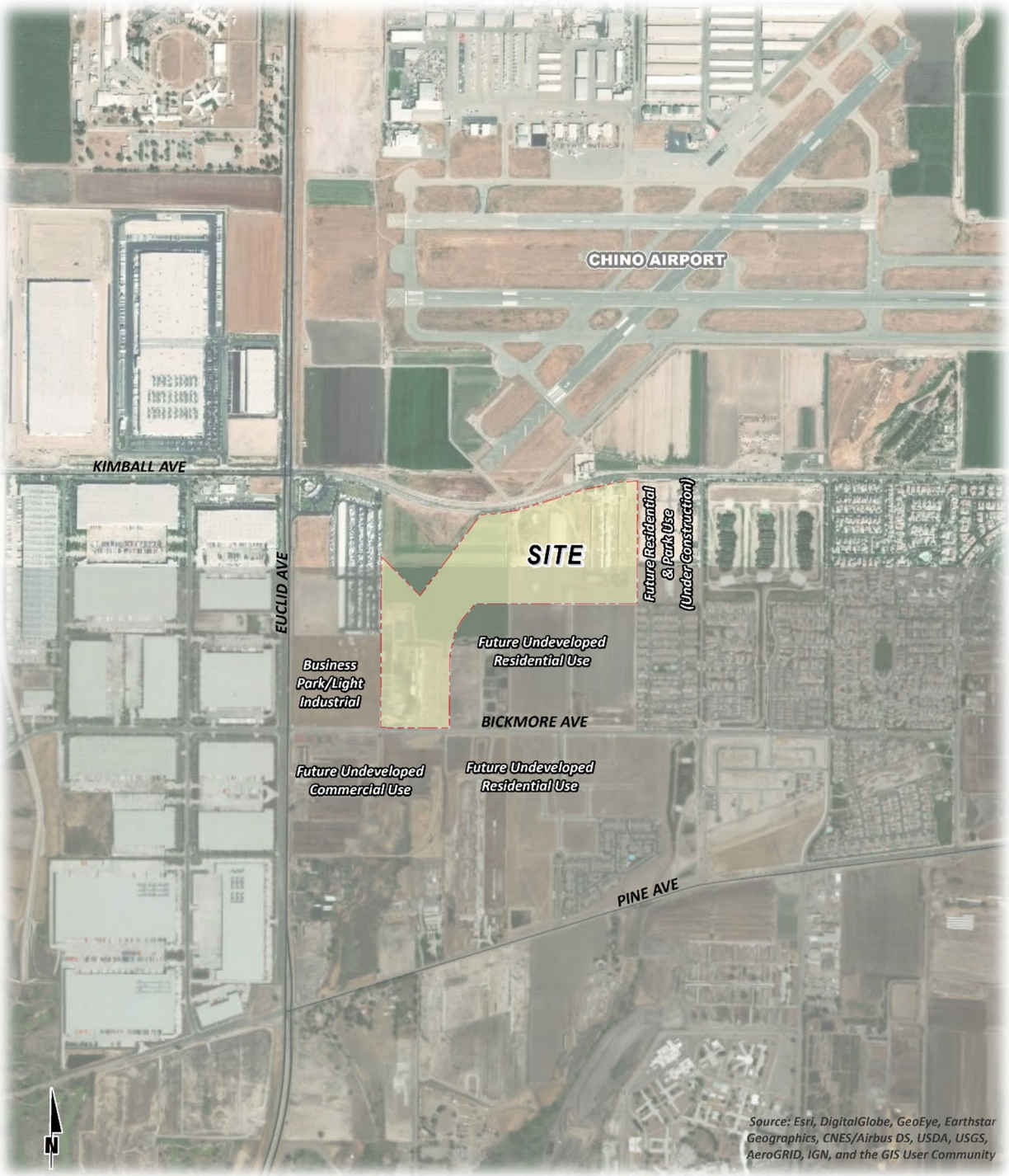
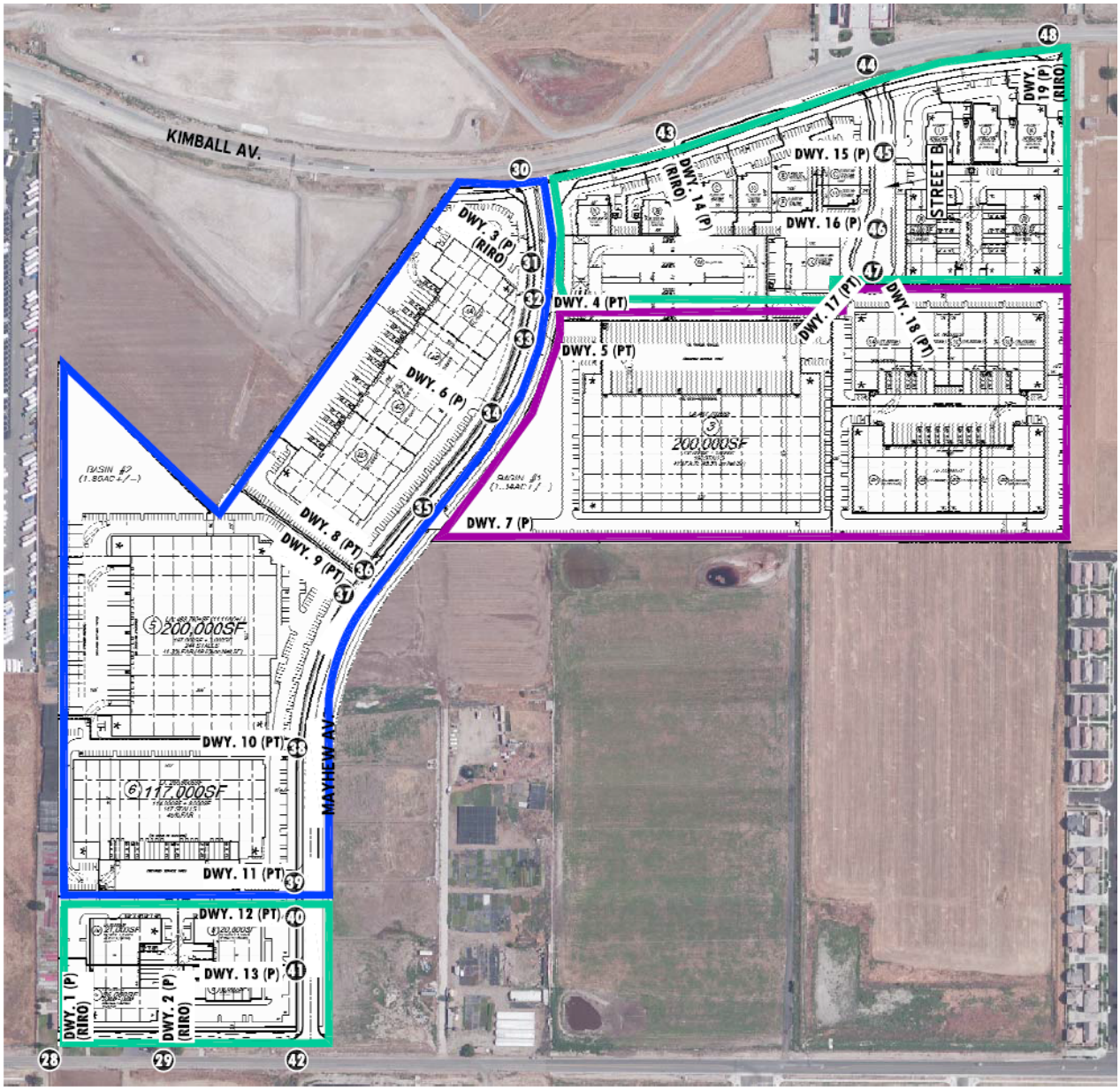


EXHIBIT 1-B: SITE PLAN



LEGEND:

RIRO	= RIGHT-IN/RIGHT-OUT ONLY ACCESS
P	= PASSENGER CARS ONLY
T	= TRUCKS ONLY
PT	= PASSENGER CARS AND TRUCKS

= PHASE 1 (2018)
= PHASE 2 (2019)
= PHASE 3 (2020)

N

NOTE: UNLESS NOTED, ALL DRIVEWAYS ARE ASSUMED TO BE FULL ACCESS.

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. (6) The most common sounds vary between 40 dBA (very quiet) to 100 dBA (very loud). Normal conversation at three feet is roughly at 60 dBA, while loud jet engine noises equate to 110 dBA

at approximately 100 feet, which can cause serious discomfort. (7) Another important aspect of noise is the duration of the sound and the way it is described and distributed in time.

2.2 NOISE DESCRIPTORS

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

To describe the time-varying character of environmental noise, the statistical or percentile noise descriptors L_{50}, L_{25}, L_8 and L_2, are commonly used. The percentile noise descriptors are the noise levels equaled or exceeded during 50 percent, 25 percent, 8 percent, and 2 percent of a stated time. Sound levels associated with the L_2 and L_8 typically describe transient or short-term events, while levels associated with the L_{50} describe the steady state (or median) noise conditions. While the L_{50} describes the median noise levels occurring 50 percent of the time, the L_{eq} accounts for the total energy (average) observed for the entire hour. Therefore, the L_{eq} noise descriptor is generally 1-2 dBA higher than the L_{50} noise level.

Peak hour or average noise levels, while useful, do not completely describe a given noise environment. Noise levels lower than peak hour may be disturbing if they occur during times when quiet is most desirable, namely evening and nighttime (sleeping) hours. To account for this, the Community Noise Equivalent Level (CNEL), representing a composite 24-hour noise level is utilized. The CNEL is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time of day corrections require the addition of 5 decibels to dBA L_{eq} sound levels in the evening from 7:00 p.m. to 10:00 p.m., and the addition of 10 decibels to dBA L_{eq} sound levels at night between 10:00 p.m. and 7:00 a.m. These additions are made to account for the noise sensitive time periods during the evening and night hours when sound appears louder. CNEL does not represent the actual sound level heard at any time, but rather represents the total sound exposure. The City of 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. (6)

2.3.2 GROUND ABSORPTION

The propagation path of noise from a highway to a receptor is usually very close to the ground. Noise attenuation from ground absorption and reflective wave canceling adds to the attenuation associated with geometric spreading. Traditionally, the excess attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is usually sufficiently accurate for distances of less than 200 ft. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receptor, such as a parking lot or body of water), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receptor such as soft dirt, grass, or scattered bushes and trees), an excess ground attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to the cylindrical spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance from a line source. (8)

2.3.3 ATMOSPHERIC EFFECTS

Receptors located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects. (6)

2.3.4 SHIELDING

A large object or barrier in the path between a noise source and a receptor can substantially attenuate noise levels at the receptor. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Shielding by trees and other such vegetation typically only has an “out of sight, out of mind” effect. That is, the perception of noise impact tends to decrease when vegetation blocks the line-of-sight to nearby resident. However, for vegetation to provide a substantial, or even noticeable, noise reduction, the vegetation area must be at least 15 feet in height, 100 feet wide and dense enough to completely obstruct the line-of sight between the source and the receiver. This size of vegetation may provide up to 5 dBA of noise reduction. The FHWA does not consider the planting of vegetation to be a noise abatement measure. (8)

2.4 NOISE CONTROL

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

2.5 NOISE BARRIER ATTENUATION

Effective noise barriers can reduce noise levels by 10 to 15 dBA, cutting the loudness of traffic noise in half. A noise barrier is most effective when placed close to the noise source or receptor. Noise barriers, however, do have limitations. For a noise barrier to work, it must be high enough and long enough to block the path of the noise source. (8)

2.6 LAND USE COMPATIBILITY WITH NOISE

Some land uses are more tolerant of noise than others. For example, schools, hospitals, churches, and residences are more sensitive to noise intrusion than are commercial or industrial developments and related activities. As ambient noise levels affect the perceived amenity or livability of a development, so too can the mismanagement of noise impacts impair the economic health and growth potential of a community by reducing the area's desirability as a place to live, shop and work. For this reason, land use compatibility with the noise environment is an important consideration in the planning and design process. The FHWA encourages State and Local government to regulate land development in such a way that noise-sensitive land uses are either prohibited from being located adjacent to a highway, or that the developments are planned, designed, and constructed in such a way that noise impacts are minimized. (9)

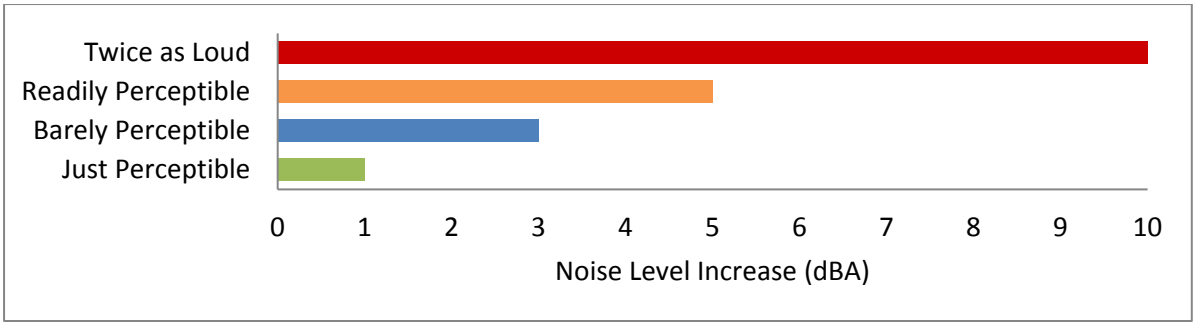
2.7 COMMUNITY RESPONSE TO NOISE

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

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

Approximately ten percent of the population has a very low tolerance for noise and will object to any noise not of their making. Consequently, even in the quietest environment, some complaints will occur. Another twenty-five percent of the population will not complain even in very severe noise environments. Thus, a variety of reactions can be expected from people exposed to any given noise environment. (10) Surveys have shown that about ten percent of the people exposed to traffic noise of 60 dBA will report being highly annoyed with the noise, and each increase of one dBA is associated with approximately two percent more people being highly annoyed. When traffic noise exceeds 60 dBA or aircraft noise exceeds 55 dBA, people may begin to complain. (10) Despite this variability in behavior on an individual level, the population can be expected to exhibit the following responses to changes in noise levels as shown on Exhibit 2-B. An increase or decrease of 1 dBA cannot be perceived except in carefully controlled laboratory experiments, a change of 3 dBA are considered *barely perceptible*, and changes of 5 dBA are considered *readily perceptible*. (8)

EXHIBIT 2-B: NOISE LEVEL INCREASE PERCEPTION



2.8 EXPOSURE TO HIGH NOISE LEVELS

The Occupational Safety and Health Administration (OSHA) sets legal limits on noise exposure in the workplace. The permissible exposure limit (PEL) for a worker over an eight-hour day is 90 dBA. The OSHA standard uses a 5 dBA exchange rate. This means that when the noise level is increased by 5 dBA, the amount of time a person can be exposed to a certain noise level to receive the same dose is cut in half. The National Institute for Occupational Safety and Health (NIOSH) has recommended that all worker exposures to noise should be controlled below a level equivalent to 85 dBA for eight hours to minimize occupational noise induced hearing loss. NIOSH also recommends a 3 dBA exchange rate so that every increase by 3 dBA doubles the amount of the noise and halves the recommended amount of exposure time. (11)

OSHA has implemented requirements to protect all workers in general industry (e.g. the manufacturing and the service sectors) for employers to implement a Hearing Conservation Program where workers are exposed to a time weighted average noise level of 85 dBA or higher over an eight-hour work shift. Hearing Conservation Programs require employers to measure noise levels, provide free annual hearing exams and free hearing protection, provide training, and conduct evaluations of the adequacy of the hearing protectors in use unless changes to tools, equipment and schedules are made so that they are less noisy and worker exposure to noise is less than the 85 dBA. This noise study does not evaluate the noise exposure of workers within a project or construction site based on CEQA requirements, and instead, evaluates Project-related operational and construction noise levels at the nearby sensitive receiver locations in the Project study area. Further, periodic exposure to high noise levels in short duration, such as Project construction, is typically considered an annoyance and not impactful to human health. It would take several years of exposure to high noise levels to result in hearing impairment. (12)

2.9 VIBRATION

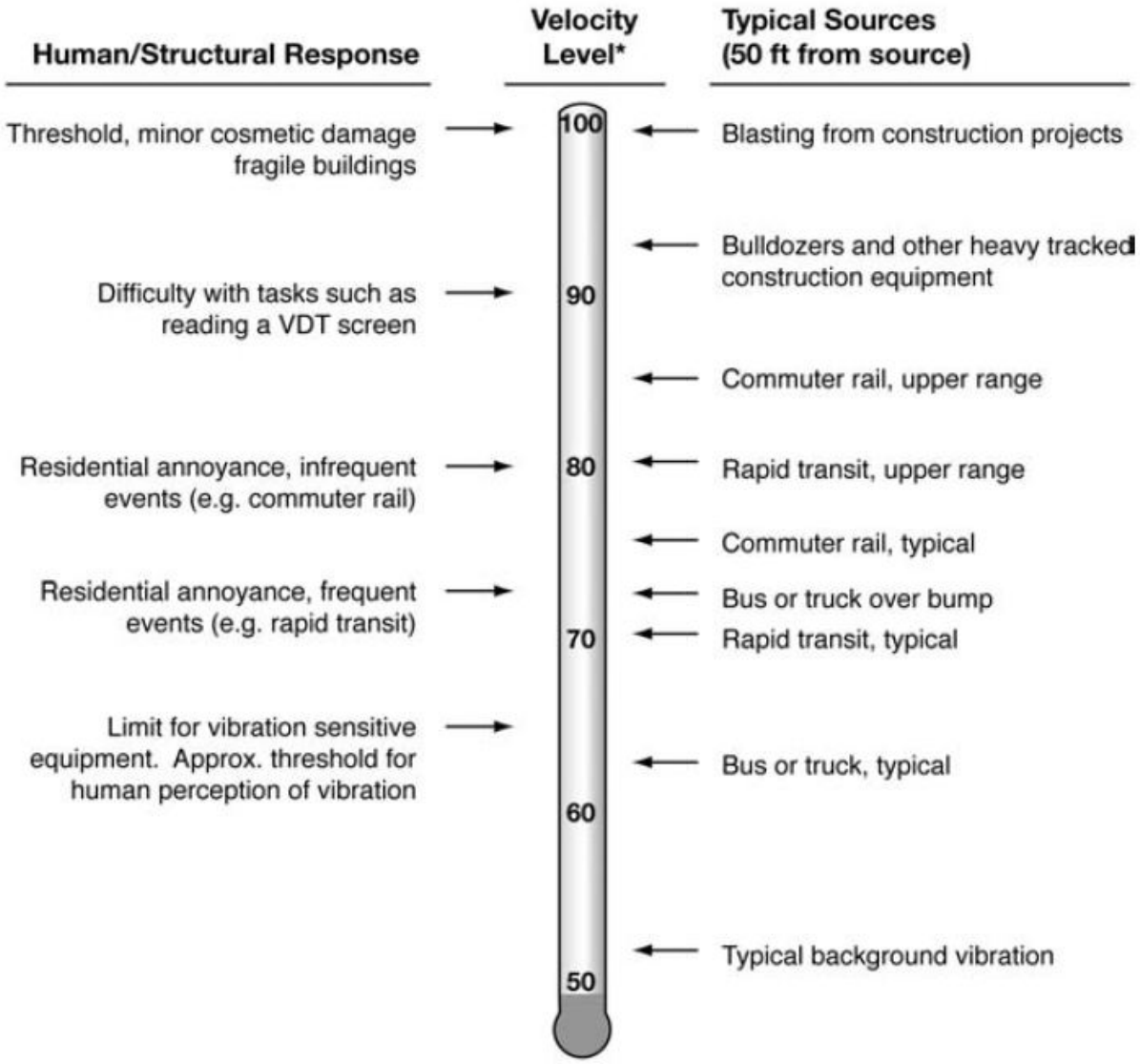
Per the Federal Transit Administration (FTA) *Transit Noise Impact and Vibration Assessment* (3), vibration is the periodic oscillation of a medium or object. The rumbling sound caused by the vibration of room surfaces is called structure-borne noise. Sources of ground-borne vibrations include natural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

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

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

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

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



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

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

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3 REGULATORY SETTING

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

3.1 STATE OF CALIFORNIA NOISE REQUIREMENTS

The State of California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise standards, and provides guidance for local land use compatibility. State law requires that each county and city adopt a General Plan that includes a Noise Element which is to be prepared per guidelines adopted by the Governor's Office of Planning and Research (OPR). (13) The purpose of the Noise Element is to *limit the exposure of the community to excessive noise levels*.

3.2 STATE OF CALIFORNIA GREEN BUILDING STANDARDS CODE

The 2014 State of California's Green Building Standards Code contains mandatory measures for non-residential building construction in Section 5.507 on Environmental Comfort. (14) These noise standards are applied to new construction in California for controlling interior noise levels resulting from exterior noise sources. The regulations specify that acoustical studies must be prepared when non-residential structures are developed in areas where the exterior noise levels exceed 65 dBA CNEL, such as within a noise contour of an airport, freeway, railroad, and other areas where noise contours are not readily available. If the development falls within an airport or freeway 65 dBA CNEL noise contour, the combined sound transmission class (STC) rating of the wall and roof-ceiling assemblies must be at least 50. For those developments in areas where noise contours are not readily available and the noise level exceeds 65 dBA L_{eq} for any hour of operation, a wall and roof-ceiling combined STC rating of 45, and exterior windows with a minimum STC rating of 40 are required (Section 5.507.4.1).

3.3 CITY OF CHINO GENERAL PLAN NOISE ELEMENT

The City of Chino has adopted a Noise Element of the General Plan (15) 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, shown on Exhibit 3-A, 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. For industrial land uses, such as manufacturing and warehousing, the City of Chino has established an interior noise level standard of 65 dBA CNEL. The Noise Element also provides several policies to reduce noise impacts from transportation (N-1.2) that includes the use of street and right-of-way design, roadway alignment, noise barriers, and pavement surface treatments. To control sources of construction noise (N-1.3), the Noise Element requires a noise monitoring plan and limits all construction activity near noise-sensitive land uses to the daylight hours of 7:00 a.m. to 7:00 p.m. In addition, several construction noise control measures are prescribed to minimize the construction noise impacts.

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 Ontario and City of Eastvale, as indicated in 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, which identify exterior noise levels ranging from 60 to 70 dBA CNEL as acceptable for residential uses, but do not identify specific exterior transportation noise level standards. 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. (16) (17) In addition, the guidelines of the City of Ontario and City of Eastvale, as indicated in 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, also identify 70 dBA CNEL as *normally acceptable* for non-noise-sensitive uses, such as industrial.

EXHIBIT 3-A: CITY OF CHINO INTERIOR AND EXTERIOR NOISE STANDARDS

Land Use Category	Uses	Energy Average L_{dn} Interior[a]	Energy Average L_{dn} Exterior[b]
Residential	Single-family, duplex, multi-family	45[c]	65
	Mobile home	---	65[d]
Commercial, Industrial, Institutional	Hotel, motel, transient lodging	45	65
	Commercial retail, bank, restaurant	55	---
	Office building, research and development, professional offices, City office building	50	---
	Amphitheatre, concert hall, auditorium, meeting hall	45	---
	Gymnasium (multipurpose)	50	---
	Sports club	55	---
	Manufacturing, warehousing, wholesale, utilities	65	---
	Movie theaters	45	---
Institutional	Hospital, schools, classroom	45	65
	Church, library	45	---
Open Space	Parks	---	65

[a] Indoor environment excluding: bathrooms, toilets, closets, corridors.

[b] Outdoor environment limited to: private yard of single-family or multi-family private patio or balcony which is served by a means of exit from inside, mobile home park, hospital patio, park's picnic area, school's playground, and hotel and motel recreation area.

[c] Noise level requirement with closed windows. Mechanical ventilation system or other means of natural ventilation shall be provided per the California Building Code.

[d] Exterior noise level should be such that interior noise levels will not exceed 45 dB L_{dn}.

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

3.4 OPERATIONAL NOISE STANDARDS

To analyze noise impacts originating from a designated fixed location or private property such as the Altitude Business Centre Project, stationary-source (operational) noise such as the expected roof-top air conditioning units, idling trucks, delivery truck activities, backup alarms, as well as loading and unloading of dry goods, parking lot vehicle movements, and self-storage activity are typically evaluated against standards established under a City's 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 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.

TABLE 3-1: OPERATIONAL NOISE STANDARDS

City	Land Use	Time Period	Exterior Noise Level Standards (dBA)[2]				
			L_{50} (30 Mins)	L_{25} (15 Mins)	L_8 (5 Mins)	L_2 (1 Min)	Lmax (Anytime)
Chino[1]	Residential	Daytime	55	60	65	70	75
		Nighttime	50	55	60	65	70

[1] Source: Section9.40.040 of the City of Chino Municipal Code (Appendix 3.1).
[2] The percent noise level is the level exceeded "n" percent of the time during the measurement period. L_{25} is the noise level exceeded 25% of the time.
"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

3.5 CONSTRUCTION NOISE STANDARDS

To analyze noise impacts originating from the construction of the Altitude Business Centre, noise from construction activities are typically evaluated against standards established under a City's Municipal Code. The Municipal Code noise standards for construction are described below for the City of Chino to determine the potential noise impacts at receivers within each jurisdiction. The construction-related noise standards for each City are summarized in Table 3-2.

The City of Chino has set restrictions to control noise impacts associated with construction activities throughout the City. Section 9.40.060(D) of the City's Noise Ordinance indicates that noise sources associated with construction, repair, remodeling, or grading of any real property, are exempt from the provisions of the noise ordinance, provided the construction activities take place between the hours of 7:00 a.m. and 8:00 p.m. Monday through Saturday, with no construction allowed on Sundays and Federal holidays (Section 15.44.030), and provided the noise levels exceeding 65 dBA L_{50} when measured on residential property do not endanger the public health, welfare and safety. (18) If construction activities occur outside of the permitted hours, then construction activity is required to be in compliance with the City's Municipal Code.

Although construction noise may not pose a health risk or damage human hearing, it has the potential to adversely affect people's quality of life. Noise annoys, awakens, angers, and frustrates 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. 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. The construction noise standards are shown on Table 3-2. Note that pursuant to the City of Chino Municipal Code, Section 9.40.060(D), the noise limit of 65 dBA is the noise standard for a cumulative period of more than thirty minutes in any hour (L_{50}). In addition, the Municipal Code allows for short bursts or periods of increased construction-related noise as follows:

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

For the purposes of this analysis, the 65 dBA 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.

TABLE 3-2: CONSTRUCTION NOISE STANDARDS

City	Permitted Hours of Construction Activity	Construction Noise Level Standard (dBA L_{eq})
Chino[1]	7:00 a.m. to 8:00 p.m. Monday through Friday, not allowed on Sundays or Federal Holidays.	65

[1] Source: Section9.40.060 of the City of Chino Municipal Code (Appendix 3.1).

3.6 VIBRATION STANDARDS

To analyze vibration impacts originating from the operation and construction of the Altitude Business Centre, vibration-generating activities are typically evaluated against standards established under a City's Municipal Code. The Municipal Code vibration standards are described below for the City of Chino to determine the potential vibration impacts at sensitive receiver locations. The vibration standards are summarized on Table 3-3.

OPERATIONAL-SOURCE VIBRATION STANDARDS

City of Chino Noise Ordinance Section 9.40.110 - *Vibration*, states in pertinent part: *it is unlawful for any person to create, maintain or cause any ground vibration which is perceptible without instruments at any point on any affected property adjoining the property on which the vibration source is located*. *For the purpose of this chapter, the perception threshold shall be presumed to be more than 0.05 inches per second (root mean square–RMS) vertical velocity*. (18)

CONSTRUCTION-SOURCE VIBRATION STANDARDS

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

TABLE 3-3: VIBRATION STANDARDS

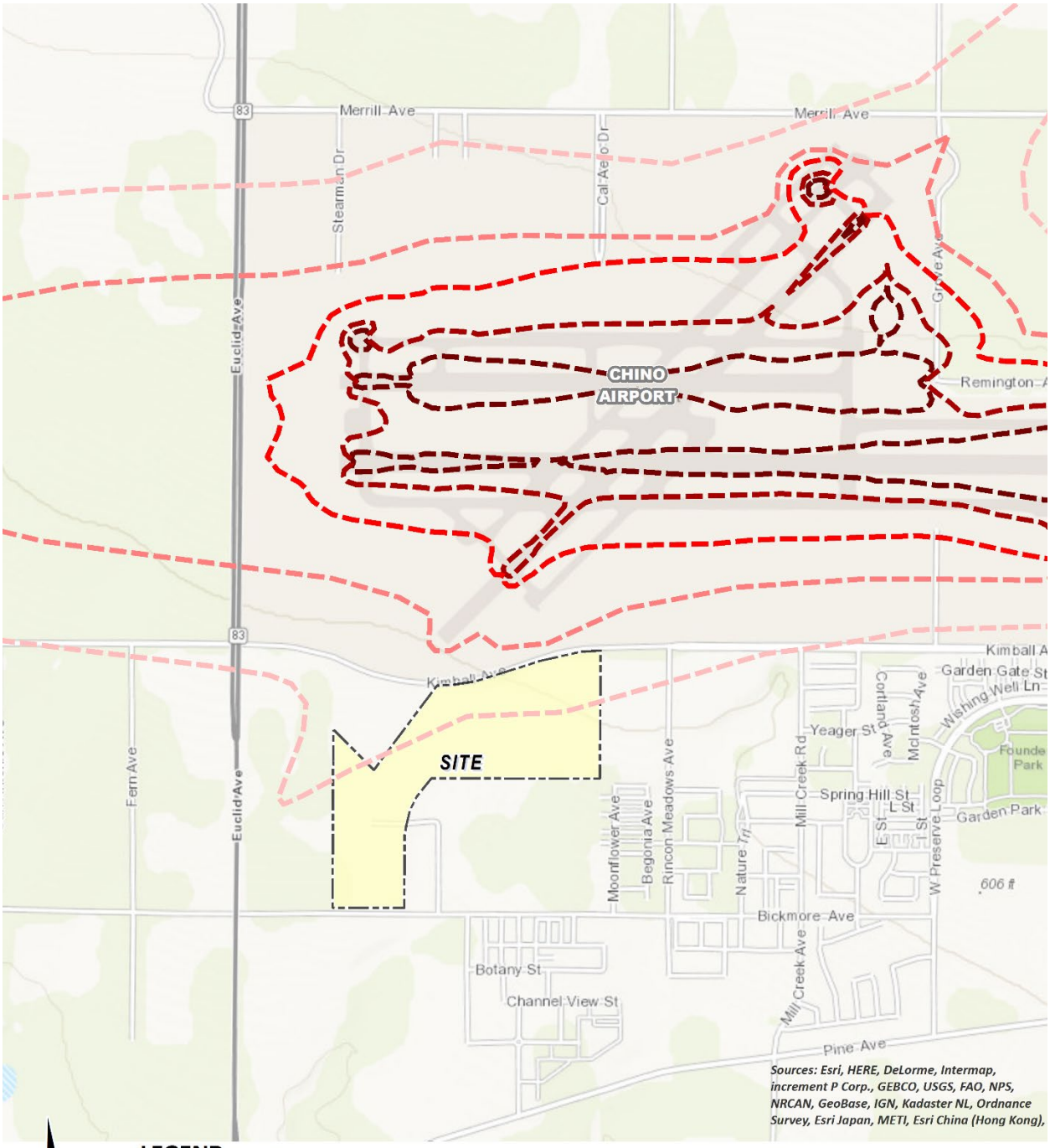
City	Root-Mean-Square Velocity (in/sec)
Chino[1]	0.05

[1] Source: Section 9.40.110 of the City of Chino Municipal Code.

3.7 CHINO AIRPORT LAND USE COMPATIBILITY

The *Chino Airport Master Plan*, (19) prepared by the County of San Bernardino, identifies noise compatibility policies based on the *Chino Airport Comprehensive Land Use Plan* (ACLUP). (20) The ACLUP establishes threshold for aircraft noise exposure for new developments. The *Chino Airport Master Plan* shows the 65 dBA CNEL noise contour boundaries for Year 2009, 2015, and 2030 conditions. Based on Year 2030 conditions, the 55 dBA CNEL noise contour extends into the Project site boundaries, as shown on Exhibit 3-B. Table 2B of the ALUCP indicates that exterior noise levels of up to 65 dBA CNEL at industrial uses, such as the Project, are considered *normally acceptable*, and *slight interference with outdoor activities may occur. Conventional construction methods will eliminate most noise intrusions upon indoor activities.* (20) Therefore, since the Project land use is considered *normally acceptable,* no exterior or interior noise mitigation is required, and the impacts due to aircraft noise will be *less than significant*. No further analysis is required or included in this noise study for the Chino Airport-related noise levels.

EXHIBIT 3-B: CHINO AIRPORT YEAR 2030 NOISE CONTOURS



Sources: Chino Airport Master Plan, Exhibit B4 and the Riverside County Airport Land Use Compatibility Plan, Map CH-3.

4 SIGNIFICANCE CRITERIA

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

A. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

B. Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels.

C. A substantial permanent increase in ambient noise levels in the Project vicinity above existing levels without the proposed Project; or

D. A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above noise levels existing without the proposed Project.

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

F. For a project within the vicinity of a private airstrip, expose people residing or working in the Project area to excessive noise levels.

While the CEQA Guidelines and the City of 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 under CEQA Guideline A, they do not define the levels at which increases are considered substantial for use under Guidelines B, C, and D. CEQA Guidelines E and F apply to nearby public and private airports, if any, and the Project's land use compatibility. The Project site is located approximately 450 feet south of Chino Airport. Based on Year 2030 conditions, the 55 dBA CNEL noise contour extends into the Project site boundaries, as previously shown on Exhibit 3-B. Table 2B of the ALUCP indicates that exterior noise levels of up to 65 dBA CNEL at industrial uses, such as the Project, are considered *normally acceptable*, and *slight interference with outdoor activities may occur. Conventional construction methods will eliminate most noise intrusions upon indoor activities.* (20) Therefore, since the Project land use is considered *normally acceptable,* no exterior or interior noise mitigation is required, and the impacts due to aircraft noise will be *less than significant*. Further, no private airstrips are near the Project site. As such, the Project would not be exposed to substantial noise from aircraft overflights. Accordingly, people at the Project site would not be exposed to excessive noise levels from nearby airport operations, and therefore, impacts are considered *less than significant,* and no further noise analysis is conducted in relation to Guidelines E and F.

4.1 NOISE-SENSITIVE RECEIVERS

Noise level increases resulting from the Project are evaluated based on the Appendix G CEQA Guidelines described above at the closest sensitive receiver locations. Under CEQA, consideration must be given to the magnitude of the increase, the existing ambient noise levels, and the location of noise-sensitive receivers to determine if a noise increase represents a significant adverse environmental impact. This approach recognizes *that there is no single noise increase that renders the noise impact significant.* (21)

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

In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will typically be judged. The Federal Interagency Committee on Noise (FICON) (22) developed guidance to be used for the assessment of project-generated increases in noise levels that consider the ambient noise level. The FICON recommendations are based on studies that relate aircraft noise levels to the percentage of persons highly annoyed by aircraft noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, these recommendations are often used in environmental noise impact assessments involving the use of cumulative noise exposure metrics, such as the average-daily noise level (i.e., CNEL).

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

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

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

Federal Interagency Committee on Noise (FICON), 1992.

4.2 NON-NOISE-SENSITIVE RECEIVERS

Since 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 the Project land use, the OPR land use/noise compatibility criteria, found in Figure 2 of the *General Plan Guidelines, Appendix C: Noise Element Guidelines* is used to determine 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*. (13) This is consistent with the adjacent jurisdictional guidelines of the City of Ontario and City of Eastvale, as indicated in 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, which also identify 70 dBA CNEL as *normally acceptable* for industrial uses. . (16) (17)

To determine if Project-related traffic noise level increases are significant at off-site non-noise-sensitive land uses, a *readily perceptible* 5 dBA and *barely perceptible* 3 dBA criteria are used. When the without Project noise levels at the non-noise-sensitive land uses are below the *normally acceptable* 70 dBA CNEL compatibility criteria, a *readily perceptible* 5 dBA or greater noise level increase is considered a significant impact. When the without Project noise levels are greater than the *normally acceptable* 70 dBA CNEL land use compatibility criteria, a *barely perceptible* 3 dBA or greater noise level increase is considered a significant impact since the noise level criteria is already exceeded. The noise level increases used to determine significant impacts for non-noise-sensitive land uses is generally consistent with the FICON noise level increase thresholds for noise-sensitive land uses but instead rely on the OPR land use/noise compatibility criteria, found in Figure 2 of the *General Plan Guidelines, Appendix C: Noise Element Guidelines normally acceptable* 70 dBA CNEL exterior noise level criteria.

4.3 SIGNIFICANCE CRITERIA SUMMARY

Noise impacts shall be considered significant if any of the following occur as a direct result of the proposed development. Table 4-2 shows the significance criteria summary matrix.

OFF-SITE TRAFFIC NOISE

- When the noise levels at existing and future noise-sensitive land uses (e.g. residential, etc.):
    - are less than 60 dBA CNEL and the Project creates a *readily perceptible* 5 dBA CNEL or greater Project-related noise level increase; or
    - range from 60 to 65 dBA CNEL and the Project creates a *barely perceptible* 3 dBA CNEL or greater Project-related noise level increase; or
    - already exceed 65 dBA CNEL, and the Project creates a community noise level impact of greater than 1.5 dBA CNEL (FICON, 1992).
- When the noise levels at existing and future non-noise-sensitive land uses (e.g. industrial, etc.):
    - are less than the OPR General Plan Guidelines, Figure 2, *normally acceptable* 70 dBA and the Project creates a *readily perceptible* 5 dBA or greater Project-related noise level increase; or

- are greater than the OPR General Plan Guidelines, Figure 2, *normally acceptable* 70 dBA and the Project creates a *barely perceptible* 3 dBA or greater Project-related noise level increase.

OPERATIONAL NOISE

- If Project-related operational (stationary source) noise levels exceed the exterior 55 dBA L_{50} daytime or 50 dBA L_{50} nighttime noise level standards for sensitive residential land uses. These standards shall not be exceeded for a cumulative period of 30 minutes (L_{50}), or plus 5 dBA cannot be exceeded for a cumulative period of more than 15 minutes (L_{25}) in any hour, or the standard plus 10 dBA for a cumulative period of more than 5 minutes (L_8) in any hour, or the standard plus 15 dBA for a cumulative period of more than 1 minute (L_2) in any hour, or the standard plus 20 dBA at any time (Lmax) (City of Chino Municipal Code, Section 9.40.040); or
- If the existing ambient noise levels at the nearby noise-sensitive receivers near the Project site:
  - are less than 60 dBA L_{50} and the Project creates a *readily perceptible* 5 dBA L_{50} or greater Project-related noise level increase; or
  - range from 60 to 65 dBA L_{50} and the Project creates a *barely perceptible* 3 dBA L_{50} or greater Project-related noise level increase; or
  - already exceed 65 dBA L_{50} and the Project creates a community noise level impact of greater than 1.5 dBA L_{50} (FICON, 1992).
- If long-term Project generated operational vibration levels exceed the vibration standard of 0.05 inch/sec RMS at noise-sensitive receiver locations (City of Chino Municipal Code, Section 9.40.110).

CONSTRUCTION NOISE AND VIBRATION

- If Project-related construction activities:
  - occur at any time other than the permitted hours of 7:00 a.m. to 8:00 p.m. Monday through Friday, with no activity allowed on Sundays or Federal Holidays and exceed the Municipal Code noise level standards (City of Chino Municipal Code, Section 9.40.060(D)); or
  - create noise levels during the permitted hours at sensitive residential receivers in the which exceed the construction noise level limit of 65 dBA L_{eq} at nearby sensitive receiver locations (City of Chino Municipal Code, Section 9.40.060(D)).
- 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 (City of Chino Municipal Code, Section 9.40.110).

TABLE 4-2: SIGNIFICANCE CRITERIA SUMMARY

Analysis	Receiving Land Use	Condition(s)	Significance Criteria	
			Daytime	Nighttime
Off-Site	Noise-Sensitive[1]	If ambient is < 60 dBA CNEL	≥ 5 dBA CNEL Project increase	
		If ambient is 60 - 65 dBA CNEL	≥ 3 dBA CNEL Project increase	
		If ambient is > 65 dBA CNEL	≥ 1.5 dBA CNEL Project increase	
	Non-Noise-Sensitive[2]	if ambient is < 70 dBA CNEL	≥ 5 dBA CNEL Project increase	
		if ambient is > 70 dBA CNEL	≥ 3 dBA CNEL Project increase	
Operational Noise & Vibration	Noise-Sensitive[3]	≥ 30 Minutes L_{50}	55	50
		≥ 15 Minutes L_{25}	60	55
		≥ 5 Minutes L_8	65	60
		≥ 1 Minute L_2	70	65
		Anytime L_{max}	75	70
		if ambient is < 60 dBA L_{so}[1]	≥ 5 dBA L_{50} Project increase	
		if ambient is 60 - 65 dBA L_{so}[1]	≥ 3 dBA L_{50} Project increase	
		if ambient is > 65 dBA L_{so}[1]	≥ 1.5 dBA L_{50} Project increase	
		Vibration Level Threshold[4]	0.05 in/sec RMS	n/a
Construction Noise & Vibration	Noise-Sensitive	Permitted hours of 7:00 a.m. to 8:00 p.m. Monday through Friday, not allowed on Sundays or Federal Holidays.[5]		
		Noise Level Threshold[6]	65 dBA L_{eq}	
		Vibration Level Threshold[4]	0.05 in/sec RMS	n/a

[1] Source: FICON, 1992.
[2] Source: City of Chino General Plan Noise Element, Table N-3.
[3] Source: Section9.40.040 of the City of Chino Municipal Code (Appendix 3.1).
[4] Source: Section 9.40.110 of the City of Chino Municipal Code (Appendix 3.1).
[5] Source: Section 9.40.060(D) of the City of Chino Municipal Code (Appendix 3.1).
[6] Acceptable construction noise level threshold as shown on Table 3-2 based on City of Chino and other County of San Bernardino jurisdictional noise level limits for construction activity.
"Daytime" = 7:00 a.m. - 10:00 p.m.; "Nighttime" = 10:00 p.m. - 7:00 a.m.

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5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, 24-hour noise level measurements were taken at eight locations in the Project study area. The measurement locations were selected to describe and document the existing noise environment within the Project study area. Exhibit 5-A provides the boundaries of the Project study area and the noise level measurement locations. To fully describe the existing noise conditions, noise level measurements were collected by Urban Crossroads, Inc. on Wednesday, June 14th, 2017. 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. (23)

5.2 NOISE MEASUREMENT LOCATIONS

The long-term noise level measurements were positioned as close to the nearest sensitive receiver locations as possible to assess the existing ambient hourly noise levels surrounding the Project site. Both Caltrans and the FTA recognize that it is not reasonable to collect noise level measurements that can fully represent every part of a private yard, patio, deck, or balcony normally used for human activity when estimating impacts for new development projects. This is demonstrated in the Caltrans general site location guidelines which indicate that, *sites must be free of noise contamination by sources other than sources of interest. Avoid sites located near sources such as barking dogs, lawnmowers, pool pumps, and air conditioners unless it is the express intent of the analyst to measure these sources*. (6) 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. (3) In other words, the area represented by the receiver shares similar shielding, terrain, and geometric relationship to the reference noise source. Receivers represent a location of noise sensitive areas and are used to estimate the future noise level impacts. Collecting reference ambient noise level measurements at the nearby sensitive receiver locations allows for a comparison of the before and after Project noise levels

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

5.3 NOISE MEASUREMENT RESULTS

The noise measurements presented below focus on the average median sound levels (L_{50}). The median sound level (L_{50}) 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 daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) noise levels at each noise level measurement location. Appendix 5.2 provides a summary of the existing hourly ambient noise levels described below:

- Location L1 represents the noise levels east of the Project site on Kimball Avenue near future residential homes (currently under construction). The noise level measurements collected show an overall 24-hour exterior noise level of 61.9 dBA CNEL. The median noise levels measured at location L1 ranged from 49.0 to 55.0 dBA L_{50} during the daytime hours and from 42.0 to 54.0 dBA L_{50} during the nighttime hours. The average daytime noise level was calculated at 52.3 dBA L_{50} with an average nighttime noise level of 46.8 dBA L_{50}.
- Location L2 represents the noise levels east of the Project site on Mill Creek Road near existing residential homes. The noise level measurements collected show an overall 24-hour exterior noise level of 64.6 dBA CNEL. The median noise levels measured at location L2 ranged from 46.0 to 52.0 dBA L_{50} during the daytime hours and from 41.0 to 50.0 dBA L_{50} during the nighttime hours. The average daytime noise level was calculated at 49.4 dBA L_{50} with an average nighttime noise level of 45.3 dBA L_{50}.
- Location L3 represents the noise levels east of the Project site in an existing residential community on Begonia Avenue. The 24-hour CNEL indicates that the overall exterior noise level is 57.6 dBA CNEL. At location L3 the background ambient noise levels ranged from 44.0 to 50.0 dBA L_{50} during the daytime hours to levels of 44.0 to 49.0 dBA L_{50} during the nighttime hours. The average daytime noise level was calculated at 47.1 dBA L_{50} with an average nighttime noise level of 45.9 dBA L_{50}.
- Located southeast of the Project site, location L4 represents the noise levels on Bickmore Avenue near existing and future residential homes. The noise level measurements collected show an overall 24-hour exterior noise level of 66.2 dBA CNEL. The median noise levels measured at location L4 ranged from 45.0 to 60.0 dBA L_{50} during the daytime hours and from 41.0 to 59.0 dBA L_{50} during the nighttime hours. The average daytime noise level was calculated at 51.9 dBA L_{50} with an average nighttime noise level of 46.1 dBA L_{50}.
- Location L5 represents the noise levels south of the Project site on Channel View Street near an existing residential community. The 24-hour CNEL indicates that the overall exterior noise level is 56.9 dBA CNEL. At location L5 the background ambient noise levels ranged from 45.0 to 50.0 dBA L_{50} during the daytime hours to levels of 42.0 to 49.0 dBA L_{50} during the nighttime hours. The average daytime noise level was calculated at 47.6 dBA L_{50} with an average nighttime noise level of 44.7 dBA L_{50}.
- Location L6 represents the noise levels at the southwest corner of the Project site on Bickmore Avenue near existing agricultural uses. The noise level measurements collected show an overall 24-hour exterior noise level of 64.3 dBA CNEL. The median noise levels measured at location L6 ranged from 47.0 to 58.0 dBA L_{50} during the daytime hours and from 43.0 to 58.0

dBA L_{50} during the nighttime hours. The daytime noise level was calculated at 52.0 dBA L_{50} with an average nighttime noise level of 49.1 dBA L_{50}.

- Location L7 represents the noise levels measured west of the Project site adjacent to and existing residential home and industrial uses. The noise level measurements collected show an overall 24-hour exterior noise level of 69.3 dBA CNEL. The median noise levels measured at location L7 ranged from 53.0 to 62.0 dBA L_{50} during the daytime hours and from 53.0 to 62.0 dBA L_{50} during the nighttime hours. The average daytime noise level was calculated at 58.5 dBA L_{50} with an average nighttime noise level of 56.0 dBA L_{50}.
- Location L8 represents the noise levels north of the Project site on Kimball Avenue near an existing fire station, south of Chino Airport. The 24-hour CNEL indicates that the overall exterior noise level is 78.3 dBA CNEL. At location L8 the background ambient noise levels ranged from 61.0 to 73.0 dBA L_{50} during the daytime hours to levels of 45.0 to 74.0 dBA L_{50} during the nighttime hours. The average daytime noise level was calculated at 67.5 dBA L_{50} with an average nighttime noise level of 57.0 dBA L_{50}.

Table 5-1 provides the noise levels used to describe the daytime and nighttime ambient conditions. These daytime and nighttime energy average noise levels represent the average of all median (L_{50}) 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, energy average (L_{eq}), 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 existing transportation network, including aircraft flyovers from Chino Airport. This also includes the auto and heavy truck activities on study area roadway segments near the noise level measurement locations. The 24-hour existing noise level measurement results are shown on Table 5-1.

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

Location[1]	Distance to Project Boundary (Feet)	Description	Median Average Noise Level (dBA L_{50})[2]		CNEL
			Daytime	Nighttime	
L1	610'	Located east of the Project site on Kimball Avenue near future residential homes (currently under construction).	52.3	46.8	61.9
L2	1,950'	Located east of the Project site on Mill Creek Road near existing residential homes.	49.4	45.3	64.6
L3	460'	Located east of the Project site in an existing residential community on Begonia Avenue.	47.1	45.9	57.6
L4	1,290'	Located southeast of the Project site on Bickmore Avenue near existing and future residential homes.	51.9	46.1	66.2
L5	1,825'	Located south of the Project site on Channel View Street near an existing residential community.	47.6	44.7	56.9
L6	0'	Located at the southwest corner of the Project site on Bickmore Avenue near existing agricultural uses.	52.0	49.1	64.3
L7	1,090'	Located west of the Project site adjacent to and existing residential home and industrial uses.	58.5	56.0	69.3
L8	80'	Located north of the Project site on Kimball Avenue near an existing fire station, south of Chino Airport.	67.5	57.0	78.3

[1] See Exhibit 5-A for the noise level measurement locations.
[2] The long-term 24-hour measurement worksheets are included in Appendix 5.2.
"Daytime" = 8:00 a.m. to 10:00 p.m.; "Nighttime" = 10:01 p.m. to 7:59 a.m.

EXHIBIT 5-A: NOISE MEASUREMENT LOCATIONS



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6 METHODS AND PROCEDURES

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

6.1 FHWA TRAFFIC NOISE PREDICTION MODEL

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

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 42 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. The ADT volumes used in this study are presented on Tables 6-2 to 6-4, and are based on the *Altitude Business Centre Traffic Impact Analysis* prepared by Urban Crossroads, Inc., for the following traffic scenarios: Existing, Opening Year 2018, Opening Year 2019, Opening Year 2020, Horizon Year 2040 Without Limonite Extension, and Horizon Year 2040 With Limonite Extension conditions. (2)

TABLE 6-1: OFF-SITE ROADWAY PARAMETERS

ID	Roadway	Segment	Analysis Cond.	Adjacent Planned (Existing) Land Use[1]	Centerline to Adjacent Land Use Distance (Feet)[2]	Vehicle Speed (mph)
1	Central Av.	n/o Chino Hills Pkwy.	Existing, Opening Year, & Horizon Year Without and With Limonite Extension	Urban Reserve (Prison)	60'	45
2	Central Av.	s/o Chino Hills Pkwy.		Office Commercial	60'	45
3	Central Av.	s/o El Prado Rd.		Office Commercial	60'	45
4	Euclid Av.	n/o SR-60		Residential	84'	45
5	Euclid Av.	s/o SR-60		Commercial	84'	45
6	Euclid Av.	s/o Walnut St.		Residential	84'	45
7	Euclid Av.	s/o Riverside Dr.		Residential	84'	55
8	Euclid Av.	s/o Chino Av.		Residential	84'	55
9	Euclid Av.	s/o Schaefer Av.		Residential	84'	55
10	Euclid Av.	s/o Edison Av.		Mixed-Use (Residential)	84'	55
11	Euclid Av.	s/o Eucalyptus Av.		Residential	84'	55
12	Euclid Av.	s/o Merrill Av.		Urban Reserve (Prison)	84'	55
13	Euclid Av.	s/o Kimball Av.		Industrial (Residential)	84'	55
14	Euclid Av.	s/o Bickmore Av.		Commercial (Agricultural)	84'	55
15	Euclid Av.	s/o Pine Av.		Urban Reserve	84'	55
16	Flight Av.	n/o Kimball Av.		Industrial	30'	40
17	Hellman Av.	s/o Kimball Av.		Residential	49'	45
18	Edison Av.	w/o Euclid Av.		Business Park (Church)	60'	45
19	Eucalyptus Av.	w/o Euclid Av.		Residential	44'	40
20	Chino Hills Pkwy.	w/o SR-71		Residential	49'	40
21	Chino Hills Pkwy.	e/o SR-71		Commercial	49'	45
22	Chino Hills Pkwy.	e/o Ramona Av.		Commercial	49'	45
23	Chino Hills Pkwy.	e/o Monte Vista Av.		Industrial	60'	45
24	El Prado Rd.	e/o Central Av.		Industrial/Urban Reserve	44'	45
25	Kimball Av.	e/o El Prado Rd.		Industrial/Urban Reserve	44'	50
26	Kimball Av.	e/o Mountain Av.		Industrial/Urban Reserve	44'	50
27	Kimball Av.	e/o San Antonio Av.		Industrial	44'	50
28	Kimball Av.	e/o Fern Av.		Industrial	44'	50
29	Kimball Av.	e/o Euclid Av.		Commercial/Public	49'	50
30	Kimball Av.	w/o Rincon Meadows Av.		Residential	49'	50
31	Kimball Av.	e/o Rincon Meadows Av.		Residential	49'	50
32	Kimball Av.	e/o Mill Creek Av.		Residential	49'	50
33	Kimball Av.	e/o Main St.		Residential	49'	50
34	Kimball Av.	e/o Flight Av.		Residential	49'	50
35	Kimball Av.	e/o Meadow Valley Av.		Residential	49'	50
36	Pine Av.	e/o Euclid Av.		Urban Reserve (Residential)	60'	45
37	Limonite Av.	e/o Hellman Av.	Horizon Year With Limonite Extension	Industrial (Agricultural)	76'	45
38	Limonite Av.	e/o Archibald Av.		Industrial (Agricultural)	76'	45
39	Limonite Av.	e/o Harrison Av.		Residential	76'	45
40	Limonite Av.	e/o Sumner Av.		Residential	76'	45
41	Limonite Av.	e/o Scholar Wy.		Residential	76'	45
42	Limonite Av.	e/o Hamner Av.		Commercial	76'	45

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

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

TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES (1 OF 3)

ID	Roadway	Segment	Average Daily Traffic Volumes[1]					
			Existing				Opening Year 2018	
			Without Project	With Phase 1	With Phase 1+2	With Project Buildout	Without Project	With Project
1	Central Av.	n/o Chino Hills Pkwy.	28,614	28,658	28,707	28,799	30,114	30,158
2	Central Av.	s/o Chino Hills Pkwy.	26,828	27,040	27,280	27,578	30,034	30,246
3	Central Av.	s/o El Prado Rd.	31,236	31,439	31,667	31,867	36,429	36,632
4	Euclid Av.	n/o SR-60	35,044	35,088	35,137	35,229	37,406	37,450
5	Euclid Av.	s/o SR-60	35,663	35,978	36,337	36,875	48,744	49,059
6	Euclid Av.	s/o Walnut St.	30,841	31,200	31,608	32,238	44,163	44,522
7	Euclid Av.	s/o Riverside Dr.	29,240	29,642	30,099	30,823	43,269	43,671
8	Euclid Av.	s/o Chino Av.	31,485	31,931	32,437	33,253	45,985	46,431
9	Euclid Av.	s/o Schaefer Av.	30,031	30,521	31,076	31,984	45,327	45,817
10	Euclid Av.	s/o Edison Av.	26,892	27,484	28,153	29,278	43,891	44,483
11	Euclid Av.	s/o Eucalyptus Av.	28,098	28,792	29,575	30,916	46,731	47,425
12	Euclid Av.	s/o Merrill Av.	27,249	27,943	28,726	30,067	38,854	39,548
13	Euclid Av.	s/o Kimball Av.	20,258	20,315	20,380	20,765	30,502	30,559
14	Euclid Av.	s/o Bickmore Av.	17,382	17,782	18,234	19,011	27,881	28,281
15	Euclid Av.	s/o Pine Av.	34,368	34,676	35,024	35,621	44,720	45,028
16	Flight Av.	n/o Kimball Av.	2,494	2,586	2,689	2,869	9,509	9,601
17	Hellman Av.	s/o Kimball Av.	14,192	14,265	14,346	14,501	12,877	12,950
18	Edison Av.	w/o Euclid Av.	17,363	17,451	17,548	17,734	19,838	19,926
19	Eucalyptus Av.	w/o Euclid Av.	4,535	4,593	4,659	4,782	6,198	6,256
20	Chino Hills Pkwy.	w/o SR-71	42,469	42,498	42,531	42,593	44,611	44,640
21	Chino Hills Pkwy.	e/o SR-71	27,753	27,892	28,050	28,194	30,485	30,624
22	Chino Hills Pkwy.	e/o Ramona Av.	26,152	26,320	26,511	26,717	28,987	29,155
23	Chino Hills Pkwy.	e/o Monte Vista Av.	21,183	21,351	21,542	21,748	20,725	20,893
24	El Prado Rd.	e/o Central Av.	26,101	26,516	26,984	27,482	33,209	33,624
25	Kimball Av.	e/o El Prado Rd.	19,448	19,863	20,331	20,829	26,169	26,584
26	Kimball Av.	e/o Mountain Av.	17,458	17,873	18,341	18,839	24,679	25,094
27	Kimball Av.	e/o San Antonio Av.	17,267	17,682	18,150	18,648	25,154	25,569
28	Kimball Av.	e/o Fern Av.	18,064	18,479	18,947	19,445	27,482	27,897
29	Kimball Av.	e/o Euclid Av.	18,134	19,280	20,575	22,774	25,213	26,359
30	Kimball Av.	w/o Rincon Meadows Av.	19,015	19,253	19,519	20,008	25,920	26,158
31	Kimball Av.	e/o Rincon Meadows Av.	18,466	18,689	18,939	19,397	24,966	25,189
32	Kimball Av.	e/o Mill Creek Av.	16,361	16,570	16,804	17,230	25,168	25,377
33	Kimball Av.	e/o Main St.	11,843	12,022	12,224	12,589	18,203	18,382
34	Kimball Av.	e/o Flight Av.	14,530	14,618	14,715	14,901	15,667	15,755
35	Kimball Av.	e/o Meadow Valley Av.	14,192	14,265	14,346	14,501	14,314	14,387
36	Pine Av.	e/o Euclid Av.	24,806	24,898	25,001	25,181	27,703	27,795

[1] Source: Altitude Business Centre Traffic Impact Analysis, Urban Crossroads, Inc., August 2017.
Note: Segments 37 to 42 are not included here since they are only analyzed under Horizon Year 2040 conditions consistent with the Traffic Impact Analysis based on the construction of the extension of Limonite Avenue.

TABLE 6-3: AVERAGE DAILY TRAFFIC VOLUMES (2 OF 3)

ID	Roadway	Segment	Average Daily Traffic Volumes[1]					
			Opening Year 2019		Opening Year 2020		Horizon Year 2040 Without Limonite Extension	
			Without Project	With Project	Without Project	With Project	Without Project	With Project
1	Central Av.	n/o Chino Hills Pkwy.	30,710	30,803	31,317	31,502	37,371	37,556
2	Central Av.	s/o Chino Hills Pkwy.	30,593	31,045	31,162	31,912	30,026	30,776
3	Central Av.	s/o El Prado Rd.	37,079	37,510	37,742	38,373	32,574	33,205
4	Euclid Av.	n/o SR-60	38,135	38,228	38,879	39,064	53,712	53,897
5	Euclid Av.	s/o SR-60	49,486	50,160	50,243	51,455	51,616	52,828
6	Euclid Av.	s/o Walnut St.	44,804	45,571	45,459	46,856	49,711	51,108
7	Euclid Av.	s/o Riverside Dr.	43,877	44,736	44,498	46,081	56,213	57,796
8	Euclid Av.	s/o Chino Av.	46,640	47,592	47,308	49,076	59,653	61,421
9	Euclid Av.	s/o Schaefer Av.	45,952	46,997	46,589	48,542	59,946	61,899
10	Euclid Av.	s/o Edison Av.	44,450	45,711	45,021	47,407	47,169	49,555
11	Euclid Av.	s/o Eucalyptus Av.	47,316	48,793	47,912	50,730	49,456	52,274
12	Euclid Av.	s/o Merrill Av.	39,421	40,898	40,000	42,818	52,205	55,023
13	Euclid Av.	s/o Kimball Av.	30,924	31,046	31,354	31,861	37,981	38,488
14	Euclid Av.	s/o Bickmore Av.	28,243	29,095	28,612	30,241	35,747	37,376
15	Euclid Av.	s/o Pine Av.	45,436	46,092	46,165	47,418	57,841	59,094
16	Flight Av.	n/o Kimball Av.	9,556	9,751	9,604	9,979	1,755	2,130
17	Hellman Av.	s/o Kimball Av.	13,074	13,228	13,275	13,584	17,591	17,900
18	Edison Av.	w/o Euclid Av.	20,199	20,384	20,568	20,939	28,657	29,028
19	Eucalyptus Av.	w/o Euclid Av.	6,293	6,417	6,389	6,636	5,300	5,547
20	Chino Hills Pkwy.	w/o SR-71	45,494	45,556	46,396	46,520	44,665	44,789
21	Chino Hills Pkwy.	e/o SR-71	31,062	31,359	31,651	32,092	28,344	28,785
22	Chino Hills Pkwy.	e/o Ramona Av.	29,531	29,890	30,086	30,651	28,399	28,964
23	Chino Hills Pkwy.	e/o Monte Vista Av.	21,104	21,463	24,708	25,273	23,323	23,888
24	El Prado Rd.	e/o Central Av.	33,752	34,635	34,306	35,687	18,906	20,287
25	Kimball Av.	e/o El Prado Rd.	26,573	27,456	26,986	28,367	21,551	22,932
26	Kimball Av.	e/o Mountain Av.	25,042	25,925	25,412	26,793	19,375	20,756
27	Kimball Av.	e/o San Antonio Av.	25,514	26,397	25,880	27,261	19,184	20,565
28	Kimball Av.	e/o Fern Av.	27,858	28,741	28,241	29,622	19,873	21,254
29	Kimball Av.	e/o Euclid Av.	25,486	27,927	25,764	30,404	21,690	26,330
30	Kimball Av.	w/o Rincon Meadows Av.	26,211	26,715	26,508	27,501	22,571	23,564
31	Kimball Av.	e/o Rincon Meadows Av.	25,245	25,718	25,530	26,461	26,102	27,033
32	Kimball Av.	e/o Mill Creek Av.	25,447	25,890	25,732	26,601	28,233	29,102
33	Kimball Av.	e/o Main St.	18,344	18,725	18,489	19,235	40,615	41,361
34	Kimball Av.	e/o Flight Av.	15,859	16,044	16,055	16,426	14,827	15,198
35	Kimball Av.	e/o Meadow Valley Av.	14,499	14,653	14,688	14,997	14,489	14,798
36	Pine Av.	e/o Euclid Av.	28,219	28,414	28,745	29,120	40,570	40,945

[1] Source: Altitude Business Centre Traffic Impact Analysis, Urban Crossroads, Inc., August 2017.

Note: Segments 37 to 42 are not included here since they are only analyzed under Horizon Year 2040 conditions consistent with the Traffic Impact Analysis based on the construction of the extension of Limonite Avenue.

TABLE 6-4: AVERAGE DAILY TRAFFIC VOLUMES (3 OF 3)

ID	Roadway	Segment	Average Daily Traffic Volumes[1]	
			Horizon Year 2040 With Limonite Extension	
			Without Project	With Project
1	Central Av.	n/o Chino Hills Pkwy.	37,371	37,556
2	Central Av.	s/o Chino Hills Pkwy.	30,026	30,776
3	Central Av.	s/o El Prado Rd.	32,574	33,205
4	Euclid Av.	n/o SR-60	53,712	53,897
5	Euclid Av.	s/o SR-60	51,616	52,762
6	Euclid Av.	s/o Walnut St.	49,711	51,042
7	Euclid Av.	s/o Riverside Dr.	56,213	57,730
8	Euclid Av.	s/o Chino Av.	59,653	61,355
9	Euclid Av.	s/o Schaefer Av.	59,946	61,833
10	Euclid Av.	s/o Edison Av.	47,169	49,489
11	Euclid Av.	s/o Eucalyptus Av.	49,456	52,208
12	Euclid Av.	s/o Merrill Av.	52,205	54,957
13	Euclid Av.	s/o Kimball Av.	37,981	38,113
14	Euclid Av.	s/o Bickmore Av.	35,747	37,618
15	Euclid Av.	s/o Pine Av.	57,841	59,028
16	Flight Av.	n/o Kimball Av.	6,557	6,808
17	Hellman Av.	s/o Kimball Av.	23,491	23,553
18	Edison Av.	w/o Euclid Av.	28,657	29,028
19	Eucalyptus Av.	w/o Euclid Av.	5,300	5,547
20	Chino Hills Pkwy.	w/o SR-71	44,665	44,789
21	Chino Hills Pkwy.	e/o SR-71	28,344	28,723
22	Chino Hills Pkwy.	e/o Ramona Av.	28,399	28,964
23	Chino Hills Pkwy.	e/o Monte Vista Av.	23,323	23,888
24	El Prado Rd.	e/o Central Av.	18,906	20,287
25	Kimball Av.	e/o El Prado Rd.	21,551	22,932
26	Kimball Av.	e/o Mountain Av.	19,375	20,756
27	Kimball Av.	e/o San Antonio Av.	19,184	20,565
28	Kimball Av.	e/o Fern Av.	19,873	21,254
29	Kimball Av.	e/o Euclid Av.	21,690	25,889
30	Kimball Av.	w/o Rincon Meadows Av.	22,571	23,696
31	Kimball Av.	e/o Rincon Meadows Av.	27,062	28,125
32	Kimball Av.	e/o Mill Creek Av.	33,035	34,036
33	Kimball Av.	e/o Main St.	45,417	46,356
34	Kimball Av.	e/o Flight Av.	24,431	25,057
35	Kimball Av.	e/o Meadow Valley Av.	24,093	24,658
36	Pine Av.	e/o Euclid Av.	40,570	40,945
37	Limonite Av.	e/o Hellman Av.	28,702	29,267
38	Limonite Av.	e/o Archibald Av.	47,626	48,191
39	Limonite Av.	e/o Harrison Av.	51,107	51,672
40	Limonite Av.	e/o Sumner Av.	50,421	50,986
41	Limonite Av.	e/o Scholar Wy.	50,597	51,162
42	Limonite Av.	e/o Hamner Av.	54,934	55,313

[1] Source: Altitude Business Centre Traffic Impact Analysis, Urban Crossroads, Inc., August 2017.
Note: Segments 37 to 42 are only analyzed under Horizon Year 2040 conditions consistent with the Traffic Impact Analysis based on the construction of the extension of Limonite Avenue.

Per the *Altitude Business Centre Traffic Impact Analysis* prepared by Urban Crossroads, Inc. the Project is expected to generate a net total of approximately 7,496 trip-ends per day (actual vehicles) and includes 1,695 truck trip-ends per day from the proposed buildings within the Project site. (2) This noise study relies on the net Project trips (as opposed to the passenger car equivalents) to accurately account for the effect of individual truck trips on the study area roadway network.

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

Table 6-5 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 6-6 shows the traffic flow by vehicle type (vehicle mix) used for all without Project traffic scenarios, and Tables 6-7 to 6-14 show the vehicle mixes used for the with Project traffic scenarios.

TABLE 6-5: TIME OF DAY VEHICLE SPLITS

Vehicle Type	Time of Day Splits			Total of Time of Day Splits
	Daytime	Evening	Nighttime	
Autos	74.05%	12.61%	13.34%	100.00%
Medium Trucks	81.17%	5.38%	13.45%	100.00%
Heavy Trucks	82.13%	2.77%	15.11%	100.00%

Based on existing peak hour classification counts by vehicle type taken on 5/18/2016 at Central Avenue and El Prado Road (Altitude Business Centre Traffic Impact Analysis, Urban Crossroads, Inc., August 2017). Total of 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: WITHOUT PROJECT CONDITIONS VEHICLE MIX

Classification	Total % Traffic Flow			Total
	Autos	Medium Trucks	Heavy Trucks	
All Segments	91.30%	5.00%	3.70%	100.00%

Based on existing peak hour classification counts by vehicle type taken on 5/18/2016 at Central Avenue and El Prado Road (Altitude Business Centre Traffic Impact Analysis, Urban Crossroads, Inc., August 2017). Total of vehicle mix percentage values rounded to the nearest one-hundredth.

TABLE 6-7: EXISTING WITH PHASE 1 CONDITIONS VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Central Av.	n/o Chino Hills Pkwy.	91.31%	4.99%	3.69%	100.00%
2	Central Av.	s/o Chino Hills Pkwy.	91.23%	4.98%	3.79%	100.00%
3	Central Av.	s/o El Prado Rd.	91.17%	5.00%	3.83%	100.00%
4	Euclid Av.	n/o SR-60	91.31%	4.99%	3.70%	100.00%
5	Euclid Av.	s/o SR-60	90.91%	5.04%	4.06%	100.00%
6	Euclid Av.	s/o Walnut St.	90.86%	5.04%	4.11%	100.00%
7	Euclid Av.	s/o Riverside Dr.	90.85%	5.03%	4.12%	100.00%
8	Euclid Av.	s/o Chino Av.	90.89%	5.02%	4.09%	100.00%
9	Euclid Av.	s/o Schaefer Av.	90.89%	5.01%	4.10%	100.00%
10	Euclid Av.	s/o Edison Av.	90.87%	5.00%	4.13%	100.00%
11	Euclid Av.	s/o Eucalyptus Av.	90.92%	4.98%	4.10%	100.00%
12	Euclid Av.	s/o Merrill Av.	90.91%	4.98%	4.11%	100.00%
13	Euclid Av.	s/o Kimball Av.	91.04%	5.04%	3.92%	100.00%
14	Euclid Av.	s/o Bickmore Av.	90.97%	4.98%	4.06%	100.00%
15	Euclid Av.	s/o Pine Av.	91.16%	4.99%	3.85%	100.00%
16	Flight Av.	n/o Kimball Av.	90.87%	4.94%	4.19%	100.00%
17	Hellman Av.	s/o Kimball Av.	91.34%	4.97%	3.68%	100.00%
18	Edison Av.	w/o Euclid Av.	91.34%	4.97%	3.68%	100.00%
19	Eucalyptus Av.	w/o Euclid Av.	91.41%	4.94%	3.65%	100.00%
20	Chino Hills Pkwy.	w/o SR-71	91.31%	5.00%	3.70%	100.00%
21	Chino Hills Pkwy.	e/o SR-71	91.21%	5.00%	3.79%	100.00%
22	Chino Hills Pkwy.	e/o Ramona Av.	91.22%	4.99%	3.79%	100.00%
23	Chino Hills Pkwy.	e/o Monte Vista Av.	91.20%	4.99%	3.82%	100.00%
24	El Prado Rd.	e/o Central Av.	91.08%	4.98%	3.94%	100.00%
25	Kimball Av.	e/o El Prado Rd.	91.01%	4.98%	4.02%	100.00%
26	Kimball Av.	e/o Mountain Av.	90.98%	4.97%	4.05%	100.00%
27	Kimball Av.	e/o San Antonio Av.	90.97%	4.97%	4.05%	100.00%
28	Kimball Av.	e/o Fern Av.	90.99%	4.97%	4.04%	100.00%
29	Kimball Av.	e/o Euclid Av.	90.26%	4.97%	4.77%	100.00%
30	Kimball Av.	w/o Rincon Meadows Av.	91.31%	4.95%	3.74%	100.00%
31	Kimball Av.	e/o Rincon Meadows Av.	91.30%	4.96%	3.74%	100.00%
32	Kimball Av.	e/o Mill Creek Av.	91.29%	4.96%	3.75%	100.00%
33	Kimball Av.	e/o Main St.	91.27%	4.95%	3.78%	100.00%
34	Kimball Av.	e/o Flight Av.	91.35%	4.97%	3.68%	100.00%
35	Kimball Av.	e/o Meadow Valley Av.	91.34%	4.97%	3.68%	100.00%
36	Pine Av.	e/o Euclid Av.	91.26%	4.99%	3.75%	100.00%

[1] Source: Altitude Business Centre Traffic Impact Analysis, Urban Crossroads, Inc., August 2017.
[2] Total of vehicle mix percentage values rounded to the nearest one-hundredth.

TABLE 6-8: EXISTING WITH PHASE 1 & 2 CONDITIONS VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Central Av.	n/o Chino Hills Pkwy.	91.33%	4.98%	3.69%	100.00%
2	Central Av.	s/o Chino Hills Pkwy.	91.15%	4.99%	3.86%	100.00%
3	Central Av.	s/o El Prado Rd.	91.03%	5.03%	3.94%	100.00%
4	Euclid Av.	n/o SR-60	91.32%	4.99%	3.69%	100.00%
5	Euclid Av.	s/o SR-60	90.46%	5.15%	4.39%	100.00%
6	Euclid Av.	s/o Walnut St.	90.36%	5.16%	4.48%	100.00%
7	Euclid Av.	s/o Riverside Dr.	90.34%	5.15%	4.51%	100.00%
8	Euclid Av.	s/o Chino Av.	90.43%	5.13%	4.44%	100.00%
9	Euclid Av.	s/o Schaefer Av.	90.42%	5.12%	4.46%	100.00%
10	Euclid Av.	s/o Edison Av.	90.39%	5.09%	4.51%	100.00%
11	Euclid Av.	s/o Eucalyptus Av.	90.50%	5.05%	4.45%	100.00%
12	Euclid Av.	s/o Merrill Av.	90.48%	5.05%	4.47%	100.00%
13	Euclid Av.	s/o Kimball Av.	90.75%	5.12%	4.13%	100.00%
14	Euclid Av.	s/o Bickmore Av.	90.59%	5.04%	4.37%	100.00%
15	Euclid Av.	s/o Pine Av.	91.00%	5.02%	3.98%	100.00%
16	Flight Av.	n/o Kimball Av.	90.41%	5.01%	4.58%	100.00%
17	Hellman Av.	s/o Kimball Av.	91.39%	4.95%	3.66%	100.00%
18	Edison Av.	w/o Euclid Av.	91.39%	4.95%	3.66%	100.00%
19	Eucalyptus Av.	w/o Euclid Av.	91.53%	4.87%	3.60%	100.00%
20	Chino Hills Pkwy.	w/o SR-71	91.31%	4.99%	3.69%	100.00%
21	Chino Hills Pkwy.	e/o SR-71	91.10%	5.02%	3.88%	100.00%
22	Chino Hills Pkwy.	e/o Ramona Av.	91.11%	5.01%	3.88%	100.00%
23	Chino Hills Pkwy.	e/o Monte Vista Av.	91.07%	5.01%	3.92%	100.00%
24	El Prado Rd.	e/o Central Av.	90.83%	5.02%	4.15%	100.00%
25	Kimball Av.	e/o El Prado Rd.	90.68%	5.02%	4.30%	100.00%
26	Kimball Av.	e/o Mountain Av.	90.61%	5.03%	4.36%	100.00%
27	Kimball Av.	e/o San Antonio Av.	90.60%	5.03%	4.37%	100.00%
28	Kimball Av.	e/o Fern Av.	90.63%	5.03%	4.34%	100.00%
29	Kimball Av.	e/o Euclid Av.	89.18%	5.17%	5.65%	100.00%
30	Kimball Av.	w/o Rincon Meadows Av.	91.31%	4.92%	3.76%	100.00%
31	Kimball Av.	e/o Rincon Meadows Av.	91.30%	4.93%	3.77%	100.00%
32	Kimball Av.	e/o Mill Creek Av.	91.29%	4.93%	3.79%	100.00%
33	Kimball Av.	e/o Main St.	91.24%	4.93%	3.84%	100.00%
34	Kimball Av.	e/o Flight Av.	91.41%	4.94%	3.65%	100.00%
35	Kimball Av.	e/o Meadow Valley Av.	91.39%	4.95%	3.66%	100.00%
36	Pine Av.	e/o Euclid Av.	91.20%	5.00%	3.80%	100.00%

[1] Source: Altitude Business Centre Traffic Impact Analysis, Urban Crossroads, Inc., August 2017.
[2] Total of vehicle mix percentage values rounded to the nearest one-hundredth.

TABLE 6-9: EXISTING WITH PROJECT BUILDOUT CONDITIONS VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Central Av.	n/o Chino Hills Pkwy.	91.36%	4.97%	3.68%	100.00%
2	Central Av.	s/o Chino Hills Pkwy.	91.06%	4.98%	3.96%	100.00%
3	Central Av.	s/o El Prado Rd.	90.85%	5.06%	4.09%	100.00%
4	Euclid Av.	n/o SR-60	91.35%	4.97%	3.68%	100.00%
5	Euclid Av.	s/o SR-60	89.98%	5.24%	4.78%	100.00%
6	Euclid Av.	s/o Walnut St.	89.83%	5.25%	4.92%	100.00%
7	Euclid Av.	s/o Riverside Dr.	89.82%	5.23%	4.95%	100.00%
8	Euclid Av.	s/o Chino Av.	89.98%	5.19%	4.84%	100.00%
9	Euclid Av.	s/o Schaefer Av.	89.97%	5.16%	4.86%	100.00%
10	Euclid Av.	s/o Edison Av.	89.98%	5.10%	4.91%	100.00%
11	Euclid Av.	s/o Eucalyptus Av.	90.17%	5.03%	4.80%	100.00%
12	Euclid Av.	s/o Merrill Av.	90.14%	5.03%	4.83%	100.00%
13	Euclid Av.	s/o Kimball Av.	90.56%	5.12%	4.32%	100.00%
14	Euclid Av.	s/o Bickmore Av.	90.30%	5.01%	4.68%	100.00%
15	Euclid Av.	s/o Pine Av.	90.86%	5.01%	4.12%	100.00%
16	Flight Av.	n/o Kimball Av.	90.14%	4.94%	4.92%	100.00%
17	Hellman Av.	s/o Kimball Av.	91.49%	4.89%	3.62%	100.00%
18	Edison Av.	w/o Euclid Av.	91.48%	4.90%	3.62%	100.00%
19	Eucalyptus Av.	w/o Euclid Av.	91.75%	4.74%	3.51%	100.00%
20	Chino Hills Pkwy.	w/o SR-71	91.33%	4.99%	3.69%	100.00%
21	Chino Hills Pkwy.	e/o SR-71	90.97%	5.04%	3.99%	100.00%
22	Chino Hills Pkwy.	e/o Ramona Av.	90.99%	5.02%	3.99%	100.00%
23	Chino Hills Pkwy.	e/o Monte Vista Av.	90.92%	5.02%	4.06%	100.00%
24	El Prado Rd.	e/o Central Av.	90.53%	5.05%	4.41%	100.00%
25	Kimball Av.	e/o El Prado Rd.	90.29%	5.07%	4.64%	100.00%
26	Kimball Av.	e/o Mountain Av.	90.18%	5.08%	4.74%	100.00%
27	Kimball Av.	e/o San Antonio Av.	90.17%	5.08%	4.75%	100.00%
28	Kimball Av.	e/o Fern Av.	90.22%	5.08%	4.71%	100.00%
29	Kimball Av.	e/o Euclid Av.	88.44%	5.15%	6.41%	100.00%
30	Kimball Av.	w/o Rincon Meadows Av.	91.40%	4.84%	3.76%	100.00%
31	Kimball Av.	e/o Rincon Meadows Av.	91.38%	4.85%	3.78%	100.00%
32	Kimball Av.	e/o Mill Creek Av.	91.36%	4.85%	3.80%	100.00%
33	Kimball Av.	e/o Main St.	91.29%	4.84%	3.87%	100.00%
34	Kimball Av.	e/o Flight Av.	91.52%	4.88%	3.61%	100.00%
35	Kimball Av.	e/o Meadow Valley Av.	91.49%	4.89%	3.62%	100.00%
36	Pine Av.	e/o Euclid Av.	91.17%	4.99%	3.84%	100.00%

[1] Source: Altitude Business Centre Traffic Impact Analysis, Urban Crossroads, Inc., August 2017.
[2] Total of vehicle mix percentage values rounded to the nearest one-hundredth.

TABLE 6-10: OPENING YEAR 2018 WITH PROJECT CONDITIONS VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Central Av.	n/o Chino Hills Pkwy.	91.31%	4.99%	3.69%	100.00%
2	Central Av.	s/o Chino Hills Pkwy.	91.24%	4.98%	3.78%	100.00%
3	Central Av.	s/o El Prado Rd.	91.19%	5.00%	3.81%	100.00%
4	Euclid Av.	n/o SR-60	91.31%	4.99%	3.70%	100.00%
5	Euclid Av.	s/o SR-60	91.01%	5.03%	3.96%	100.00%
6	Euclid Av.	s/o Walnut St.	90.99%	5.02%	3.98%	100.00%
7	Euclid Av.	s/o Riverside Dr.	90.99%	5.02%	3.99%	100.00%
8	Euclid Av.	s/o Chino Av.	91.02%	5.01%	3.97%	100.00%
9	Euclid Av.	s/o Schaefer Av.	91.02%	5.01%	3.97%	100.00%
10	Euclid Av.	s/o Edison Av.	91.04%	5.00%	3.97%	100.00%
11	Euclid Av.	s/o Eucalyptus Av.	91.07%	4.99%	3.94%	100.00%
12	Euclid Av.	s/o Merrill Av.	91.03%	4.99%	3.99%	100.00%
13	Euclid Av.	s/o Kimball Av.	91.13%	5.02%	3.85%	100.00%
14	Euclid Av.	s/o Bickmore Av.	91.09%	4.99%	3.92%	100.00%
15	Euclid Av.	s/o Pine Av.	91.19%	4.99%	3.81%	100.00%
16	Flight Av.	n/o Kimball Av.	91.19%	4.98%	3.83%	100.00%
17	Hellman Av.	s/o Kimball Av.	91.35%	4.97%	3.68%	100.00%
18	Edison Av.	w/o Euclid Av.	91.34%	4.98%	3.68%	100.00%
19	Eucalyptus Av.	w/o Euclid Av.	91.38%	4.95%	3.67%	100.00%
20	Chino Hills Pkwy.	w/o SR-71	91.31%	5.00%	3.70%	100.00%
21	Chino Hills Pkwy.	e/o SR-71	91.22%	5.00%	3.78%	100.00%
22	Chino Hills Pkwy.	e/o Ramona Av.	91.22%	4.99%	3.78%	100.00%
23	Chino Hills Pkwy.	e/o Monte Vista Av.	91.19%	4.99%	3.82%	100.00%
24	El Prado Rd.	e/o Central Av.	91.13%	4.99%	3.89%	100.00%
25	Kimball Av.	e/o El Prado Rd.	91.08%	4.98%	3.94%	100.00%
26	Kimball Av.	e/o Mountain Av.	91.07%	4.98%	3.95%	100.00%
27	Kimball Av.	e/o San Antonio Av.	91.07%	4.98%	3.95%	100.00%
28	Kimball Av.	e/o Fern Av.	91.09%	4.98%	3.92%	100.00%
29	Kimball Av.	e/o Euclid Av.	90.54%	4.98%	4.48%	100.00%
30	Kimball Av.	w/o Rincon Meadows Av.	91.31%	4.97%	3.73%	100.00%
31	Kimball Av.	e/o Rincon Meadows Av.	91.30%	4.97%	3.73%	100.00%
32	Kimball Av.	e/o Mill Creek Av.	91.30%	4.97%	3.73%	100.00%
33	Kimball Av.	e/o Main St.	91.28%	4.97%	3.75%	100.00%
34	Kimball Av.	e/o Flight Av.	91.35%	4.97%	3.68%	100.00%
35	Kimball Av.	e/o Meadow Valley Av.	91.34%	4.97%	3.68%	100.00%
36	Pine Av.	e/o Euclid Av.	91.26%	4.99%	3.75%	100.00%

[1] Source: Altitude Business Centre Traffic Impact Analysis, Urban Crossroads, Inc., August 2017.
[2] Total of vehicle mix percentage values rounded to the nearest one-hundredth.

TABLE 6-11: OPENING YEAR 2019 WITH PROJECT CONDITIONS VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Central Av.	n/o Chino Hills Pkwy.	91.33%	4.98%	3.69%	100.00%
2	Central Av.	s/o Chino Hills Pkwy.	91.17%	4.99%	3.84%	100.00%
3	Central Av.	s/o El Prado Rd.	91.07%	5.02%	3.90%	100.00%
4	Euclid Av.	n/o SR-60	91.32%	4.99%	3.69%	100.00%
5	Euclid Av.	s/o SR-60	90.69%	5.11%	4.20%	100.00%
6	Euclid Av.	s/o Walnut St.	90.65%	5.11%	4.24%	100.00%
7	Euclid Av.	s/o Riverside Dr.	90.65%	5.10%	4.25%	100.00%
8	Euclid Av.	s/o Chino Av.	90.71%	5.09%	4.21%	100.00%
9	Euclid Av.	s/o Schaefer Av.	90.72%	5.08%	4.21%	100.00%
10	Euclid Av.	s/o Edison Av.	90.74%	5.06%	4.20%	100.00%
11	Euclid Av.	s/o Eucalyptus Av.	90.82%	5.03%	4.15%	100.00%
12	Euclid Av.	s/o Merrill Av.	90.72%	5.04%	4.24%	100.00%
13	Euclid Av.	s/o Kimball Av.	90.94%	5.08%	3.98%	100.00%
14	Euclid Av.	s/o Bickmore Av.	90.86%	5.02%	4.12%	100.00%
15	Euclid Av.	s/o Pine Av.	91.07%	5.01%	3.91%	100.00%
16	Flight Av.	n/o Kimball Av.	91.05%	5.00%	3.94%	100.00%
17	Hellman Av.	s/o Kimball Av.	91.40%	4.94%	3.66%	100.00%
18	Edison Av.	w/o Euclid Av.	91.38%	4.95%	3.67%	100.00%
19	Eucalyptus Av.	w/o Euclid Av.	91.47%	4.90%	3.63%	100.00%
20	Chino Hills Pkwy.	w/o SR-71	91.31%	4.99%	3.69%	100.00%
21	Chino Hills Pkwy.	e/o SR-71	91.12%	5.02%	3.86%	100.00%
22	Chino Hills Pkwy.	e/o Ramona Av.	91.13%	5.01%	3.86%	100.00%
23	Chino Hills Pkwy.	e/o Monte Vista Av.	91.07%	5.01%	3.92%	100.00%
24	El Prado Rd.	e/o Central Av.	90.94%	5.01%	4.05%	100.00%
25	Kimball Av.	e/o El Prado Rd.	90.84%	5.02%	4.14%	100.00%
26	Kimball Av.	e/o Mountain Av.	90.81%	5.02%	4.17%	100.00%
27	Kimball Av.	e/o San Antonio Av.	90.82%	5.02%	4.16%	100.00%
28	Kimball Av.	e/o Fern Av.	90.86%	5.02%	4.12%	100.00%
29	Kimball Av.	e/o Euclid Av.	89.74%	5.13%	5.13%	100.00%
30	Kimball Av.	w/o Rincon Meadows Av.	91.31%	4.94%	3.75%	100.00%
31	Kimball Av.	e/o Rincon Meadows Av.	91.30%	4.95%	3.75%	100.00%
32	Kimball Av.	e/o Mill Creek Av.	91.29%	4.95%	3.76%	100.00%
33	Kimball Av.	e/o Main St.	91.26%	4.95%	3.79%	100.00%
34	Kimball Av.	e/o Flight Av.	91.40%	4.94%	3.66%	100.00%
35	Kimball Av.	e/o Meadow Valley Av.	91.39%	4.95%	3.66%	100.00%
36	Pine Av.	e/o Euclid Av.	91.22%	5.00%	3.78%	100.00%

[1] Source: Altitude Business Centre Traffic Impact Analysis, Urban Crossroads, Inc., August 2017.
[2] Total of vehicle mix percentage values rounded to the nearest one-hundredth.

TABLE 6-12: OPENING YEAR 2020 WITH PROJECT CONDITIONS VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Central Av.	n/o Chino Hills Pkwy.	91.35%	4.97%	3.68%	100.00%
2	Central Av.	s/o Chino Hills Pkwy.	91.09%	4.99%	3.92%	100.00%
3	Central Av.	s/o El Prado Rd.	90.93%	5.05%	4.02%	100.00%
4	Euclid Av.	n/o SR-60	91.34%	4.98%	3.68%	100.00%
5	Euclid Av.	s/o SR-60	90.35%	5.17%	4.48%	100.00%
6	Euclid Av.	s/o Walnut St.	90.29%	5.17%	4.54%	100.00%
7	Euclid Av.	s/o Riverside Dr.	90.31%	5.15%	4.54%	100.00%
8	Euclid Av.	s/o Chino Av.	90.40%	5.13%	4.47%	100.00%
9	Euclid Av.	s/o Schaefer Av.	90.43%	5.11%	4.47%	100.00%
10	Euclid Av.	s/o Edison Av.	90.48%	5.06%	4.45%	100.00%
11	Euclid Av.	s/o Eucalyptus Av.	90.61%	5.02%	4.37%	100.00%
12	Euclid Av.	s/o Merrill Av.	90.49%	5.02%	4.49%	100.00%
13	Euclid Av.	s/o Kimball Av.	90.82%	5.08%	4.11%	100.00%
14	Euclid Av.	s/o Bickmore Av.	90.67%	5.01%	4.32%	100.00%
15	Euclid Av.	s/o Pine Av.	90.97%	5.01%	4.02%	100.00%
16	Flight Av.	n/o Kimball Av.	90.97%	4.98%	4.05%	100.00%
17	Hellman Av.	s/o Kimball Av.	91.50%	4.89%	3.62%	100.00%
18	Edison Av.	w/o Euclid Av.	91.45%	4.91%	3.63%	100.00%
19	Eucalyptus Av.	w/o Euclid Av.	91.62%	4.81%	3.56%	100.00%
20	Chino Hills Pkwy.	w/o SR-71	91.32%	4.99%	3.69%	100.00%
21	Chino Hills Pkwy.	e/o SR-71	91.01%	5.03%	3.96%	100.00%
22	Chino Hills Pkwy.	e/o Ramona Av.	91.03%	5.02%	3.95%	100.00%
23	Chino Hills Pkwy.	e/o Monte Vista Av.	90.97%	5.02%	4.01%	100.00%
24	El Prado Rd.	e/o Central Av.	90.71%	5.04%	4.25%	100.00%
25	Kimball Av.	e/o El Prado Rd.	90.56%	5.05%	4.39%	100.00%
26	Kimball Av.	e/o Mountain Av.	90.51%	5.06%	4.43%	100.00%
27	Kimball Av.	e/o San Antonio Av.	90.53%	5.05%	4.42%	100.00%
28	Kimball Av.	e/o Fern Av.	90.59%	5.05%	4.36%	100.00%
29	Kimball Av.	e/o Euclid Av.	89.15%	5.12%	5.73%	100.00%
30	Kimball Av.	w/o Rincon Meadows Av.	91.37%	4.88%	3.74%	100.00%
31	Kimball Av.	e/o Rincon Meadows Av.	91.36%	4.89%	3.75%	100.00%
32	Kimball Av.	e/o Mill Creek Av.	91.34%	4.90%	3.76%	100.00%
33	Kimball Av.	e/o Main St.	91.29%	4.89%	3.81%	100.00%
34	Kimball Av.	e/o Flight Av.	91.50%	4.89%	3.62%	100.00%
35	Kimball Av.	e/o Meadow Valley Av.	91.48%	4.90%	3.62%	100.00%
36	Pine Av.	e/o Euclid Av.	91.19%	4.99%	3.82%	100.00%

[1] Source: Altitude Business Centre Traffic Impact Analysis, Urban Crossroads, Inc., August 2017.
[2] Total of vehicle mix percentage values rounded to the nearest one-hundredth.

TABLE 6-13: HORIZON YEAR 2040 WITHOUT LIMONITE WITH PROJECT CONDITIONS VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Central Av.	n/o Chino Hills Pkwy.	91.34%	4.98%	3.68%	100.00%
2	Central Av.	s/o Chino Hills Pkwy.	91.08%	4.99%	3.93%	100.00%
3	Central Av.	s/o El Prado Rd.	90.87%	5.06%	4.08%	100.00%
4	Euclid Av.	n/o SR-60	91.33%	4.98%	3.69%	100.00%
5	Euclid Av.	s/o SR-60	90.38%	5.17%	4.46%	100.00%
6	Euclid Av.	s/o Walnut St.	90.38%	5.16%	4.47%	100.00%
7	Euclid Av.	s/o Riverside Dr.	90.51%	5.12%	4.37%	100.00%
8	Euclid Av.	s/o Chino Av.	90.58%	5.10%	4.32%	100.00%
9	Euclid Av.	s/o Schaefer Av.	90.61%	5.08%	4.30%	100.00%
10	Euclid Av.	s/o Edison Av.	90.52%	5.06%	4.42%	100.00%
11	Euclid Av.	s/o Eucalyptus Av.	90.63%	5.02%	4.35%	100.00%
12	Euclid Av.	s/o Merrill Av.	90.67%	5.02%	4.32%	100.00%
13	Euclid Av.	s/o Kimball Av.	90.90%	5.06%	4.04%	100.00%
14	Euclid Av.	s/o Bickmore Av.	90.79%	5.01%	4.20%	100.00%
15	Euclid Av.	s/o Pine Av.	91.04%	5.01%	3.95%	100.00%
16	Flight Av.	n/o Kimball Av.	89.73%	4.92%	5.35%	100.00%
17	Hellman Av.	s/o Kimball Av.	91.45%	4.91%	3.64%	100.00%
18	Edison Av.	w/o Euclid Av.	91.41%	4.94%	3.65%	100.00%
19	Eucalyptus Av.	w/o Euclid Av.	91.69%	4.78%	3.54%	100.00%
20	Chino Hills Pkwy.	w/o SR-71	91.32%	4.99%	3.69%	100.00%
21	Chino Hills Pkwy.	e/o SR-71	90.97%	5.04%	3.99%	100.00%
22	Chino Hills Pkwy.	e/o Ramona Av.	91.01%	5.02%	3.97%	100.00%
23	Chino Hills Pkwy.	e/o Monte Vista Av.	90.95%	5.02%	4.03%	100.00%
24	El Prado Rd.	e/o Central Av.	90.26%	5.07%	4.67%	100.00%
25	Kimball Av.	e/o El Prado Rd.	90.38%	5.07%	4.55%	100.00%
26	Kimball Av.	e/o Mountain Av.	90.28%	5.07%	4.64%	100.00%
27	Kimball Av.	e/o San Antonio Av.	90.27%	5.07%	4.65%	100.00%
28	Kimball Av.	e/o Fern Av.	90.31%	5.07%	4.62%	100.00%
29	Kimball Av.	e/o Euclid Av.	88.82%	5.13%	6.04%	100.00%
30	Kimball Av.	w/o Rincon Meadows Av.	91.39%	4.86%	3.75%	100.00%
31	Kimball Av.	e/o Rincon Meadows Av.	91.36%	4.89%	3.75%	100.00%
32	Kimball Av.	e/o Mill Creek Av.	91.33%	4.91%	3.76%	100.00%
33	Kimball Av.	e/o Main St.	91.30%	4.95%	3.75%	100.00%
34	Kimball Av.	e/o Flight Av.	91.51%	4.88%	3.61%	100.00%
35	Kimball Av.	e/o Meadow Valley Av.	91.48%	4.90%	3.62%	100.00%
36	Pine Av.	e/o Euclid Av.	91.22%	5.00%	3.79%	100.00%

[1] Source: Altitude Business Centre Traffic Impact Analysis, Urban Crossroads, Inc., August 2017.
[2] Total of vehicle mix percentage values rounded to the nearest one-hundredth.

TABLE 6-14: HORIZON YEAR 2040 WITH LIMONITE WITH PROJECT CONDITIONS VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Central Av.	n/o Chino Hills Pkwy.	91.34%	4.98%	3.68%	100.00%
2	Central Av.	s/o Chino Hills Pkwy.	91.08%	4.99%	3.93%	100.00%
3	Central Av.	s/o El Prado Rd.	90.87%	5.06%	4.08%	100.00%
4	Euclid Av.	n/o SR-60	91.33%	4.98%	3.69%	100.00%
5	Euclid Av.	s/o SR-60	90.49%	5.15%	4.37%	100.00%
6	Euclid Av.	s/o Walnut St.	90.49%	5.13%	4.38%	100.00%
7	Euclid Av.	s/o Riverside Dr.	90.61%	5.10%	4.29%	100.00%
8	Euclid Av.	s/o Chino Av.	90.68%	5.08%	4.24%	100.00%
9	Euclid Av.	s/o Schaefer Av.	90.71%	5.06%	4.22%	100.00%
10	Euclid Av.	s/o Edison Av.	90.64%	5.04%	4.32%	100.00%
11	Euclid Av.	s/o Eucalyptus Av.	90.75%	4.99%	4.26%	100.00%
12	Euclid Av.	s/o Merrill Av.	90.77%	4.99%	4.23%	100.00%
13	Euclid Av.	s/o Kimball Av.	90.98%	5.07%	3.95%	100.00%
14	Euclid Av.	s/o Bickmore Av.	91.03%	4.93%	4.04%	100.00%
15	Euclid Av.	s/o Pine Av.	91.14%	4.98%	3.88%	100.00%
16	Flight Av.	n/o Kimball Av.	90.65%	5.07%	4.28%	100.00%
17	Hellman Av.	s/o Kimball Av.	91.32%	4.99%	3.69%	100.00%
18	Edison Av.	w/o Euclid Av.	91.41%	4.94%	3.65%	100.00%
19	Eucalyptus Av.	w/o Euclid Av.	91.69%	4.78%	3.54%	100.00%
20	Chino Hills Pkwy.	w/o SR-71	91.32%	4.99%	3.69%	100.00%
21	Chino Hills Pkwy.	e/o SR-71	90.96%	5.05%	4.00%	100.00%
22	Chino Hills Pkwy.	e/o Ramona Av.	91.01%	5.02%	3.97%	100.00%
23	Chino Hills Pkwy.	e/o Monte Vista Av.	90.95%	5.02%	4.03%	100.00%
24	El Prado Rd.	e/o Central Av.	90.26%	5.07%	4.67%	100.00%
25	Kimball Av.	e/o El Prado Rd.	90.38%	5.07%	4.55%	100.00%
26	Kimball Av.	e/o Mountain Av.	90.28%	5.07%	4.64%	100.00%
27	Kimball Av.	e/o San Antonio Av.	90.27%	5.07%	4.65%	100.00%
28	Kimball Av.	e/o Fern Av.	90.31%	5.07%	4.62%	100.00%
29	Kimball Av.	e/o Euclid Av.	89.14%	5.09%	5.77%	100.00%
30	Kimball Av.	w/o Rincon Meadows Av.	90.88%	4.97%	4.15%	100.00%
31	Kimball Av.	e/o Rincon Meadows Av.	90.92%	4.99%	4.09%	100.00%
32	Kimball Av.	e/o Mill Creek Av.	90.97%	5.00%	4.03%	100.00%
33	Kimball Av.	e/o Main St.	91.05%	5.01%	3.94%	100.00%
34	Kimball Av.	e/o Flight Av.	90.99%	5.01%	4.00%	100.00%
35	Kimball Av.	e/o Meadow Valley Av.	90.96%	5.02%	4.02%	100.00%
36	Pine Av.	e/o Euclid Av.	91.22%	5.00%	3.79%	100.00%
37	Limonite Av.	e/o Hellman Av.	91.02%	5.02%	3.97%	100.00%
38	Limonite Av.	e/o Archibald Av.	91.13%	5.01%	3.86%	100.00%
39	Limonite Av.	e/o Harrison Av.	91.14%	5.01%	3.85%	100.00%
40	Limonite Av.	e/o Sumner Av.	91.14%	5.01%	3.85%	100.00%
41	Limonite Av.	e/o Scholar Wy.	91.14%	5.01%	3.85%	100.00%
42	Limonite Av.	e/o Hamner Av.	91.12%	5.03%	3.85%	100.00%

[1] Source: Altitude Business Centre Traffic Impact Analysis, Urban Crossroads, Inc., August 2017.
[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 6-15. 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 6-15: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

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

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006.

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7 OFF-SITE TRANSPORTATION NOISE IMPACTS

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

- Existing Without Project: This scenario refers to the existing present-day noise conditions, without the proposed Project. With Project conditions are evaluated as follows under existing conditions:
    - With Phase 1
    - With Phase 1 & 2
    - With Project Buildout
- Opening Year 2018 Without / With Project (Phase 1): This scenario below refers to the background noise conditions at future Year 2018 without and with the proposed Project plus ambient growth. This scenario corresponds to Year 2018 conditions, and includes all cumulative projects identified in the *Traffic Impact Analysis*.
- Opening Year 2019 Without / With Project (Phase 1 & 2): This scenario below refers to the background noise conditions at future Year 2019 without and with the proposed Project plus ambient growth. This scenario corresponds to Year 2019 conditions, and includes all cumulative projects identified in the *Traffic Impact Analysis*.
- Opening Year 2020 Without / With Project (Buildout): This scenario below refers to the background noise conditions at future Year 2020 without and with the proposed Project plus ambient growth. This scenario corresponds to Year 2020 conditions, and includes all cumulative projects identified in the *Traffic Impact Analysis*.
- Horizon Year 2040 Without Limonite Extension Without / With Project: This scenario below refers to the background noise conditions at future Year 2040 without the Limonite Avenue Extension, and without and with the proposed Project plus ambient growth. This scenario corresponds to Year 2040 conditions, and includes all cumulative projects identified in the *Traffic Impact Analysis*.
- Horizon Year 2040 With Limonite Extension Without / With Project: This scenario below refers to the background noise conditions at future Year 2040 with the Limonite Avenue Extension, and without and with the proposed Project plus ambient growth. This scenario corresponds to Year 2040 conditions, and includes all cumulative projects identified in the *Traffic Impact Analysis*.

7.1 TRAFFIC NOISE CONTOURS

To quantify the Project's operational traffic noise impacts on the surrounding areas, the changes in traffic noise levels on roadway segments surrounding the Project were calculated based on the changes in the average daily traffic volumes. Based on the noise impact significance criteria described in Section 4 and shown on Table 4-2, a potentially significant off-site traffic noise level impact occurs:

- When the noise levels at existing and future noise-sensitive land uses (e.g. residential, etc.):
    - are less than 60 dBA CNEL and the Project creates a *readily perceptible* 5 dBA CNEL or greater Project-related noise level increase; or
    - range from 60 to 65 dBA CNEL and the Project creates a *barely perceptible* 3 dBA CNEL or greater Project-related noise level increase; or
    - already exceed 65 dBA CNEL, and the Project creates a community noise level impact of greater than 1.5 dBA CNEL (FICON, 1992).
- When the noise levels at existing and future non-noise-sensitive land uses (e.g. industrial, etc.):
    - are less than the OPR General Plan Guidelines, Figure 2, *normally acceptable* 70 dBA and the Project creates a *readily perceptible* 5 dBA or greater Project-related noise level increase; or
    - are greater than the OPR General Plan Guidelines, Figure 2, *normally acceptable* 70 dBA and the Project creates a *barely perceptible* 3 dBA or greater Project-related noise level increase.

Noise contours were used to assess the Project's incremental traffic-related noise impacts at land uses adjacent to roadways conveying Project traffic. The noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway for the 70, 65, and 60 dBA noise levels. The noise contours do not consider the effect of any existing noise barriers or topography that may attenuate ambient noise levels. In addition, because the noise contours reflect modeling of vehicular noise on area roadways, they appropriately do not reflect noise contributions from the surrounding stationary noise sources within the Project study area. Tables 7-1 through 7-14 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 in each of the six timeframes: Existing, Opening Year 2018, Opening Year 2019, Opening Year 2020, Horizon Year 2040 Without Limonite Extension, and Horizon Year 2040 With Limonite Extension conditions. Appendix 7.1 includes a summary of the traffic noise level contours for each of the 14 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 Chino Hills Pkwy.	Urban Reserve (Prison)	75.1	131	281	606
2	Central Av.	s/o Chino Hills Pkwy.	Office Commercial	74.8	125	270	581
3	Central Av.	s/o El Prado Rd.	Office Commercial	75.4	138	298	643
4	Euclid Av.	n/o SR-60	Residential	78.0	289	622	1340
5	Euclid Av.	s/o SR-60	Commercial	78.1	292	629	1356
6	Euclid Av.	s/o Walnut St.	Residential	77.5	265	571	1230
7	Euclid Av.	s/o Riverside Dr.	Residential	79.1	339	731	1576
8	Euclid Av.	s/o Chino Av.	Residential	79.4	357	768	1655
9	Euclid Av.	s/o Schaefer Av.	Residential	79.2	346	745	1604
10	Euclid Av.	s/o Edison Av.	Mixed-Use (Residential)	78.7	321	692	1490
11	Euclid Av.	s/o Eucalyptus Av.	Residential	78.9	331	712	1534
12	Euclid Av.	s/o Merrill Av.	Urban Reserve (Prison)	78.8	324	698	1503
13	Euclid Av.	s/o Kimball Av.	Industrial (Residential)	77.5	266	573	1234
14	Euclid Av.	s/o Bickmore Av.	Commercial (Agricultural)	76.8	240	517	1114
15	Euclid Av.	s/o Pine Av.	Urban Reserve	79.8	378	815	1755
16	Flight Av.	n/o Kimball Av.	Industrial	66.4	RW	37	80
17	Hellman Av.	s/o Kimball Av.	Residential	72.7	74	160	344
18	Edison Av.	w/o Euclid Av.	Business Park (Church)	72.9	94	202	435
19	Eucalyptus Av.	w/o Euclid Av.	Residential	67.0	RW	59	128
20	Chino Hills Pkwy.	w/o SR-71	Residential	76.4	131	282	608
21	Chino Hills Pkwy.	e/o SR-71	Commercial	75.6	116	250	538
22	Chino Hills Pkwy.	e/o Ramona Av.	Commercial	75.3	111	240	517
23	Chino Hills Pkwy.	e/o Monte Vista Av.	Industrial	73.8	107	230	496
24	El Prado Rd.	e/o Central Av.	Industrial/Urban Reserve	75.6	104	224	483
25	Kimball Av.	e/o El Prado Rd.	Industrial/Urban Reserve	75.3	99	214	460
26	Kimball Av.	e/o Mountain Av.	Industrial/Urban Reserve	74.8	92	199	428
27	Kimball Av.	e/o San Antonio Av.	Industrial	74.8	92	197	425
28	Kimball Av.	e/o Fern Av.	Industrial	75.0	94	203	438
29	Kimball Av.	e/o Euclid Av.	Commercial/Public	74.7	101	218	469
30	Kimball Av.	w/o Rincon Meadows Av.	Residential	74.9	104	225	484
31	Kimball Av.	e/o Rincon Meadows Av.	Residential	74.8	102	221	475
32	Kimball Av.	e/o Mill Creek Av.	Residential	74.3	94	203	438
33	Kimball Av.	e/o Main St.	Residential	72.9	76	164	353
34	Kimball Av.	e/o Flight Av.	Residential	73.8	87	188	405
35	Kimball Av.	e/o Meadow Valley Av.	Residential	73.7	86	185	399
36	Pine Av.	e/o Euclid Av.	Urban Reserve (Residential)	74.4	119	256	551

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

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

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

TABLE 7-2: EXISTING WITH PHASE 1 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 Chino Hills Pkwy.	Urban Reserve (Prison)	75.1	131	281	606
2	Central Av.	s/o Chino Hills Pkwy.	Office Commercial	74.9	127	273	588
3	Central Av.	s/o El Prado Rd.	Office Commercial	75.5	141	303	652
4	Euclid Av.	n/o SR-60	Residential	78.0	289	622	1340
5	Euclid Av.	s/o SR-60	Commercial	78.4	303	652	1405
6	Euclid Av.	s/o Walnut St.	Residential	77.8	276	596	1283
7	Euclid Av.	s/o Riverside Dr.	Residential	79.4	353	761	1640
8	Euclid Av.	s/o Chino Av.	Residential	79.7	370	798	1719
9	Euclid Av.	s/o Schaefer Av.	Residential	79.5	360	775	1669
10	Euclid Av.	s/o Edison Av.	Mixed-Use (Residential)	79.0	336	724	1559
11	Euclid Av.	s/o Eucalyptus Av.	Residential	79.2	346	744	1604
12	Euclid Av.	s/o Merrill Av.	Urban Reserve (Prison)	79.1	339	730	1573
13	Euclid Av.	s/o Kimball Av.	Industrial (Residential)	77.6	271	583	1257
14	Euclid Av.	s/o Bickmore Av.	Commercial (Agricultural)	77.1	250	538	1160
15	Euclid Av.	s/o Pine Av.	Urban Reserve	79.9	384	828	1784
16	Flight Av.	n/o Kimball Av.	Industrial	66.8	RW	40	85
17	Hellman Av.	s/o Kimball Av.	Residential	72.7	74	160	344
18	Edison Av.	w/o Euclid Av.	Business Park (Church)	72.9	94	202	435
19	Eucalyptus Av.	w/o Euclid Av.	Residential	67.0	RW	60	128
20	Chino Hills Pkwy.	w/o SR-71	Residential	76.4	131	282	608
21	Chino Hills Pkwy.	e/o SR-71	Commercial	75.7	117	252	544
22	Chino Hills Pkwy.	e/o Ramona Av.	Commercial	75.4	113	243	523
23	Chino Hills Pkwy.	e/o Monte Vista Av.	Industrial	73.9	108	234	503
24	El Prado Rd.	e/o Central Av.	Industrial/Urban Reserve	75.8	107	231	498
25	Kimball Av.	e/o El Prado Rd.	Industrial/Urban Reserve	75.5	103	222	478
26	Kimball Av.	e/o Mountain Av.	Industrial/Urban Reserve	75.1	96	207	446
27	Kimball Av.	e/o San Antonio Av.	Industrial	75.0	96	206	443
28	Kimball Av.	e/o Fern Av.	Industrial	75.2	98	212	456
29	Kimball Av.	e/o Euclid Av.	Commercial/Public	75.5	114	245	529
30	Kimball Av.	w/o Rincon Meadows Av.	Residential	75.0	105	227	489
31	Kimball Av.	e/o Rincon Meadows Av.	Residential	74.9	103	223	480
32	Kimball Av.	e/o Mill Creek Av.	Residential	74.3	95	206	443
33	Kimball Av.	e/o Main St.	Residential	73.0	77	166	359
34	Kimball Av.	e/o Flight Av.	Residential	73.8	87	188	405
35	Kimball Av.	e/o Meadow Valley Av.	Residential	73.7	86	185	399
36	Pine Av.	e/o Euclid Av.	Urban Reserve (Residential)	74.5	120	258	555

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

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

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

TABLE 7-3: EXISTING WITH PHASE 1 & 2 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 Chino Hills Pkwy.	Urban Reserve (Prison)	75.1	131	282	607
2	Central Av.	s/o Chino Hills Pkwy.	Office Commercial	74.9	128	276	595
3	Central Av.	s/o El Prado Rd.	Office Commercial	75.6	143	307	662
4	Euclid Av.	n/o SR-60	Residential	78.0	289	622	1341
5	Euclid Av.	s/o SR-60	Commercial	78.6	314	676	1456
6	Euclid Av.	s/o Walnut St.	Residential	78.0	288	620	1337
7	Euclid Av.	s/o Riverside Dr.	Residential	79.6	368	792	1707
8	Euclid Av.	s/o Chino Av.	Residential	79.9	384	828	1784
9	Euclid Av.	s/o Schaefer Av.	Residential	79.7	374	806	1736
10	Euclid Av.	s/o Edison Av.	Mixed-Use (Residential)	79.3	351	757	1630
11	Euclid Av.	s/o Eucalyptus Av.	Residential	79.5	361	778	1675
12	Euclid Av.	s/o Merrill Av.	Urban Reserve (Prison)	79.4	355	764	1646
13	Euclid Av.	s/o Kimball Av.	Industrial (Residential)	77.7	276	595	1281
14	Euclid Av.	s/o Bickmore Av.	Commercial (Agricultural)	77.4	260	560	1207
15	Euclid Av.	s/o Pine Av.	Urban Reserve	80.0	391	842	1814
16	Flight Av.	n/o Kimball Av.	Industrial	67.2	RW	42	90
17	Hellman Av.	s/o Kimball Av.	Residential	72.7	74	160	345
18	Edison Av.	w/o Euclid Av.	Business Park (Church)	72.9	94	202	436
19	Eucalyptus Av.	w/o Euclid Av.	Residential	67.0	RW	60	129
20	Chino Hills Pkwy.	w/o SR-71	Residential	76.4	131	282	608
21	Chino Hills Pkwy.	e/o SR-71	Commercial	75.8	119	255	550
22	Chino Hills Pkwy.	e/o Ramona Av.	Commercial	75.5	114	246	530
23	Chino Hills Pkwy.	e/o Monte Vista Av.	Industrial	74.0	110	237	511
24	El Prado Rd.	e/o Central Av.	Industrial/Urban Reserve	76.0	110	238	513
25	Kimball Av.	e/o El Prado Rd.	Industrial/Urban Reserve	75.8	107	230	496
26	Kimball Av.	e/o Mountain Av.	Industrial/Urban Reserve	75.4	100	216	465
27	Kimball Av.	e/o San Antonio Av.	Industrial	75.3	100	215	462
28	Kimball Av.	e/o Fern Av.	Industrial	75.5	102	220	475
29	Kimball Av.	e/o Euclid Av.	Commercial/Public	76.2	127	273	588
30	Kimball Av.	w/o Rincon Meadows Av.	Residential	75.1	107	229	494
31	Kimball Av.	e/o Rincon Meadows Av.	Residential	74.9	104	225	485
32	Kimball Av.	e/o Mill Creek Av.	Residential	74.4	97	208	448
33	Kimball Av.	e/o Main St.	Residential	73.1	78	169	364
34	Kimball Av.	e/o Flight Av.	Residential	73.8	88	189	406
35	Kimball Av.	e/o Meadow Valley Av.	Residential	73.7	86	186	400
36	Pine Av.	e/o Euclid Av.	Urban Reserve (Residential)	74.5	120	259	558

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

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

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

TABLE 7-4: EXISTING WITH PROJECT BUILDOUT 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 Chino Hills Pkwy.	Urban Reserve (Prison)	75.1	131	282	607
2	Central Av.	s/o Chino Hills Pkwy.	Office Commercial	75.0	130	280	604
3	Central Av.	s/o El Prado Rd.	Office Commercial	75.8	145	313	673
4	Euclid Av.	n/o SR-60	Residential	78.0	289	623	1341
5	Euclid Av.	s/o SR-60	Commercial	78.9	327	704	1518
6	Euclid Av.	s/o Walnut St.	Residential	78.3	302	650	1401
7	Euclid Av.	s/o Riverside Dr.	Residential	79.9	385	830	1787
8	Euclid Av.	s/o Chino Av.	Residential	80.2	402	866	1865
9	Euclid Av.	s/o Schaefer Av.	Residential	80.0	392	844	1819
10	Euclid Av.	s/o Edison Av.	Mixed-Use (Residential)	79.7	370	798	1718
11	Euclid Av.	s/o Eucalyptus Av.	Residential	79.8	380	819	1765
12	Euclid Av.	s/o Merrill Av.	Urban Reserve (Prison)	79.7	374	806	1736
13	Euclid Av.	s/o Kimball Av.	Industrial (Residential)	77.9	283	610	1314
14	Euclid Av.	s/o Bickmore Av.	Commercial (Agricultural)	77.7	273	588	1266
15	Euclid Av.	s/o Pine Av.	Urban Reserve	80.2	399	860	1853
16	Flight Av.	n/o Kimball Av.	Industrial	67.6	RW	45	97
17	Hellman Av.	s/o Kimball Av.	Residential	72.7	74	160	346
18	Edison Av.	w/o Euclid Av.	Business Park (Church)	72.9	94	203	437
19	Eucalyptus Av.	w/o Euclid Av.	Residential	67.0	RW	60	129
20	Chino Hills Pkwy.	w/o SR-71	Residential	76.4	131	282	608
21	Chino Hills Pkwy.	e/o SR-71	Commercial	75.8	120	259	557
22	Chino Hills Pkwy.	e/o Ramona Av.	Commercial	75.6	116	249	537
23	Chino Hills Pkwy.	e/o Monte Vista Av.	Industrial	74.1	112	241	520
24	El Prado Rd.	e/o Central Av.	Industrial/Urban Reserve	76.2	114	246	530
25	Kimball Av.	e/o El Prado Rd.	Industrial/Urban Reserve	76.1	111	240	517
26	Kimball Av.	e/o Mountain Av.	Industrial/Urban Reserve	75.7	105	226	487
27	Kimball Av.	e/o San Antonio Av.	Industrial	75.6	104	225	484
28	Kimball Av.	e/o Fern Av.	Industrial	75.8	107	230	496
29	Kimball Av.	e/o Euclid Av.	Commercial/Public	76.9	142	306	659
30	Kimball Av.	w/o Rincon Meadows Av.	Residential	75.2	108	233	501
31	Kimball Av.	e/o Rincon Meadows Av.	Residential	75.0	106	228	492
32	Kimball Av.	e/o Mill Creek Av.	Residential	74.5	98	211	455
33	Kimball Av.	e/o Main St.	Residential	73.2	80	172	371
34	Kimball Av.	e/o Flight Av.	Residential	73.8	88	189	407
35	Kimball Av.	e/o Meadow Valley Av.	Residential	73.7	86	186	401
36	Pine Av.	e/o Euclid Av.	Urban Reserve (Residential)	74.6	121	261	563

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

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

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

TABLE 7-5: OPENING YEAR 2018 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 Chino Hills Pkwy.	Urban Reserve (Prison)	75.3	135	291	627
2	Central Av.	s/o Chino Hills Pkwy.	Office Commercial	75.3	135	291	626
3	Central Av.	s/o El Prado Rd.	Office Commercial	76.1	153	331	712
4	Euclid Av.	n/o SR-60	Residential	78.3	301	650	1399
5	Euclid Av.	s/o SR-60	Commercial	79.5	360	775	1670
6	Euclid Av.	s/o Walnut St.	Residential	79.0	337	726	1563
7	Euclid Av.	s/o Riverside Dr.	Residential	80.8	441	950	2046
8	Euclid Av.	s/o Chino Av.	Residential	81.1	459	989	2131
9	Euclid Av.	s/o Schaefer Av.	Residential	81.0	455	980	2111
10	Euclid Av.	s/o Edison Av.	Mixed-Use (Residential)	80.9	445	959	2066
11	Euclid Av.	s/o Eucalyptus Av.	Residential	81.1	464	1000	2154
12	Euclid Av.	s/o Merrill Av.	Urban Reserve (Prison)	80.3	410	884	1905
13	Euclid Av.	s/o Kimball Av.	Industrial (Residential)	79.3	349	752	1621
14	Euclid Av.	s/o Bickmore Av.	Commercial (Agricultural)	78.9	329	709	1527
15	Euclid Av.	s/o Pine Av.	Urban Reserve	80.9	451	971	2092
16	Flight Av.	n/o Kimball Av.	Industrial	72.2	42	90	195
17	Hellman Av.	s/o Kimball Av.	Residential	72.3	69	150	322
18	Edison Av.	w/o Euclid Av.	Business Park (Church)	73.5	102	220	475
19	Eucalyptus Av.	w/o Euclid Av.	Residential	68.3	RW	73	158
20	Chino Hills Pkwy.	w/o SR-71	Residential	76.6	135	292	628
21	Chino Hills Pkwy.	e/o SR-71	Commercial	76.0	123	266	573
22	Chino Hills Pkwy.	e/o Ramona Av.	Commercial	75.8	119	257	554
23	Chino Hills Pkwy.	e/o Monte Vista Av.	Industrial	73.7	105	227	489
24	El Prado Rd.	e/o Central Av.	Industrial/Urban Reserve	76.7	122	263	567
25	Kimball Av.	e/o El Prado Rd.	Industrial/Urban Reserve	76.6	121	260	561
26	Kimball Av.	e/o Mountain Av.	Industrial/Urban Reserve	76.3	116	250	539
27	Kimball Av.	e/o San Antonio Av.	Industrial	76.4	118	253	546
28	Kimball Av.	e/o Fern Av.	Industrial	76.8	125	269	579
29	Kimball Av.	e/o Euclid Av.	Commercial/Public	76.2	126	271	585
30	Kimball Av.	w/o Rincon Meadows Av.	Residential	76.3	128	276	596
31	Kimball Av.	e/o Rincon Meadows Av.	Residential	76.1	125	270	581
32	Kimball Av.	e/o Mill Creek Av.	Residential	76.1	126	271	584
33	Kimball Av.	e/o Main St.	Residential	74.7	101	218	471
34	Kimball Av.	e/o Flight Av.	Residential	74.1	92	198	426
35	Kimball Av.	e/o Meadow Valley Av.	Residential	73.7	86	186	401
36	Pine Av.	e/o Euclid Av.	Urban Reserve (Residential)	74.9	128	275	593

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

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

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

TABLE 7-6: OPENING YEAR 2018 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 Chino Hills Pkwy.	Urban Reserve (Prison)	75.3	135	291	627
2	Central Av.	s/o Chino Hills Pkwy.	Office Commercial	75.3	136	294	633
3	Central Av.	s/o El Prado Rd.	Office Commercial	76.2	155	335	721
4	Euclid Av.	n/o SR-60	Residential	78.3	302	650	1400
5	Euclid Av.	s/o SR-60	Commercial	79.6	369	796	1715
6	Euclid Av.	s/o Walnut St.	Residential	79.2	347	747	1610
7	Euclid Av.	s/o Riverside Dr.	Residential	81.0	453	976	2103
8	Euclid Av.	s/o Chino Av.	Residential	81.2	471	1015	2187
9	Euclid Av.	s/o Schaefer Av.	Residential	81.2	467	1006	2167
10	Euclid Av.	s/o Edison Av.	Mixed-Use (Residential)	81.0	458	986	2124
11	Euclid Av.	s/o Eucalyptus Av.	Residential	81.3	477	1027	2213
12	Euclid Av.	s/o Merrill Av.	Urban Reserve (Prison)	80.5	424	913	1967
13	Euclid Av.	s/o Kimball Av.	Industrial (Residential)	79.4	354	762	1641
14	Euclid Av.	s/o Bickmore Av.	Commercial (Agricultural)	79.1	337	727	1566
15	Euclid Av.	s/o Pine Av.	Urban Reserve	81.0	456	983	2118
16	Flight Av.	n/o Kimball Av.	Industrial	72.3	43	92	198
17	Hellman Av.	s/o Kimball Av.	Residential	72.3	70	150	323
18	Edison Av.	w/o Euclid Av.	Business Park (Church)	73.5	102	221	475
19	Eucalyptus Av.	w/o Euclid Av.	Residential	68.3	RW	73	158
20	Chino Hills Pkwy.	w/o SR-71	Residential	76.6	135	292	628
21	Chino Hills Pkwy.	e/o SR-71	Commercial	76.1	125	268	578
22	Chino Hills Pkwy.	e/o Ramona Av.	Commercial	75.9	121	260	560
23	Chino Hills Pkwy.	e/o Monte Vista Av.	Industrial	73.8	107	230	496
24	El Prado Rd.	e/o Central Av.	Industrial/Urban Reserve	76.8	125	269	581
25	Kimball Av.	e/o El Prado Rd.	Industrial/Urban Reserve	76.8	124	268	577
26	Kimball Av.	e/o Mountain Av.	Industrial/Urban Reserve	76.5	120	258	556
27	Kimball Av.	e/o San Antonio Av.	Industrial	76.6	121	261	562
28	Kimball Av.	e/o Fern Av.	Industrial	77.0	128	276	595
29	Kimball Av.	e/o Euclid Av.	Commercial/Public	76.7	138	296	638
30	Kimball Av.	w/o Rincon Meadows Av.	Residential	76.3	129	278	600
31	Kimball Av.	e/o Rincon Meadows Av.	Residential	76.2	126	272	585
32	Kimball Av.	e/o Mill Creek Av.	Residential	76.2	127	273	588
33	Kimball Av.	e/o Main St.	Residential	74.8	102	221	475
34	Kimball Av.	e/o Flight Av.	Residential	74.1	92	198	426
35	Kimball Av.	e/o Meadow Valley Av.	Residential	73.7	86	186	401
36	Pine Av.	e/o Euclid Av.	Urban Reserve (Residential)	75.0	129	277	597

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

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

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

TABLE 7-7: OPENING YEAR 2019 WITHOUT PROJECT CONDITIONS NOISE CONTOURS

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Nearest Adjacent Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Central Av.	n/o Chino Hills Pkwy.	Urban Reserve (Prison)	75.4	137	295	635
2	Central Av.	s/o Chino Hills Pkwy.	Office Commercial	75.4	137	294	634
3	Central Av.	s/o El Prado Rd.	Office Commercial	76.2	155	334	721
4	Euclid Av.	n/o SR-60	Residential	78.4	305	658	1418
5	Euclid Av.	s/o SR-60	Commercial	79.5	363	783	1686
6	Euclid Av.	s/o Walnut St.	Residential	79.1	340	733	1578
7	Euclid Av.	s/o Riverside Dr.	Residential	80.9	445	959	2065
8	Euclid Av.	s/o Chino Av.	Residential	81.1	463	998	2151
9	Euclid Av.	s/o Schaefer Av.	Residential	81.1	459	989	2130
10	Euclid Av.	s/o Edison Av.	Mixed-Use (Residential)	80.9	449	967	2083
11	Euclid Av.	s/o Eucalyptus Av.	Residential	81.2	468	1008	2172
12	Euclid Av.	s/o Merrill Av.	Urban Reserve (Prison)	80.4	414	893	1923
13	Euclid Av.	s/o Kimball Av.	Industrial (Residential)	79.3	352	759	1636
14	Euclid Av.	s/o Bickmore Av.	Commercial (Agricultural)	78.9	332	715	1540
15	Euclid Av.	s/o Pine Av.	Urban Reserve	81.0	455	981	2114
16	Flight Av.	n/o Kimball Av.	Industrial	72.2	42	91	195
17	Hellman Av.	s/o Kimball Av.	Residential	72.3	70	151	326
18	Edison Av.	w/o Euclid Av.	Business Park (Church)	73.6	104	223	481
19	Eucalyptus Av.	w/o Euclid Av.	Residential	68.4	RW	74	159
20	Chino Hills Pkwy.	w/o SR-71	Residential	76.7	137	295	636
21	Chino Hills Pkwy.	e/o SR-71	Commercial	76.1	125	269	580
22	Chino Hills Pkwy.	e/o Ramona Av.	Commercial	75.9	121	260	561
23	Chino Hills Pkwy.	e/o Monte Vista Av.	Industrial	73.7	107	230	495
24	El Prado Rd.	e/o Central Av.	Industrial/Urban Reserve	76.7	124	266	573
25	Kimball Av.	e/o El Prado Rd.	Industrial/Urban Reserve	76.6	122	263	566
26	Kimball Av.	e/o Mountain Av.	Industrial/Urban Reserve	76.4	117	253	544
27	Kimball Av.	e/o San Antonio Av.	Industrial	76.5	119	256	551
28	Kimball Av.	e/o Fern Av.	Industrial	76.9	126	271	585
29	Kimball Av.	e/o Euclid Av.	Commercial/Public	76.2	127	273	589
30	Kimball Av.	w/o Rincon Meadows Av.	Residential	76.3	129	278	600
31	Kimball Av.	e/o Rincon Meadows Av.	Residential	76.2	126	272	585
32	Kimball Av.	e/o Mill Creek Av.	Residential	76.2	127	273	588
33	Kimball Av.	e/o Main St.	Residential	74.8	102	220	473
34	Kimball Av.	e/o Flight Av.	Residential	74.1	92	199	429
35	Kimball Av.	e/o Meadow Valley Av.	Residential	73.7	87	188	404
36	Pine Av.	e/o Euclid Av.	Urban Reserve (Residential)	75.0	129	279	601

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

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

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

TABLE 7-8: OPENING YEAR 2019 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 Chino Hills Pkwy.	Urban Reserve (Prison)	75.4	137	295	636
2	Central Av.	s/o Chino Hills Pkwy.	Office Commercial	75.5	140	301	648
3	Central Av.	s/o El Prado Rd.	Office Commercial	76.4	159	343	739
4	Euclid Av.	n/o SR-60	Residential	78.4	306	658	1418
5	Euclid Av.	s/o SR-60	Commercial	79.9	383	825	1777
6	Euclid Av.	s/o Walnut St.	Residential	79.5	360	776	1673
7	Euclid Av.	s/o Riverside Dr.	Residential	81.2	470	1012	2180
8	Euclid Av.	s/o Chino Av.	Residential	81.5	488	1051	2265
9	Euclid Av.	s/o Schaefer Av.	Residential	81.4	484	1042	2245
10	Euclid Av.	s/o Edison Av.	Mixed-Use (Residential)	81.3	475	1022	2203
11	Euclid Av.	s/o Eucalyptus Av.	Residential	81.5	494	1064	2291
12	Euclid Av.	s/o Merrill Av.	Urban Reserve (Prison)	80.8	442	951	2050
13	Euclid Av.	s/o Kimball Av.	Industrial (Residential)	79.5	361	778	1677
14	Euclid Av.	s/o Bickmore Av.	Commercial (Agricultural)	79.3	349	752	1619
15	Euclid Av.	s/o Pine Av.	Urban Reserve	81.2	467	1006	2168
16	Flight Av.	n/o Kimball Av.	Industrial	72.4	44	94	202
17	Hellman Av.	s/o Kimball Av.	Residential	72.4	70	152	327
18	Edison Av.	w/o Euclid Av.	Business Park (Church)	73.6	104	224	482
19	Eucalyptus Av.	w/o Euclid Av.	Residential	68.4	RW	74	160
20	Chino Hills Pkwy.	w/o SR-71	Residential	76.7	137	295	637
21	Chino Hills Pkwy.	e/o SR-71	Commercial	76.2	127	275	592
22	Chino Hills Pkwy.	e/o Ramona Av.	Commercial	76.0	123	266	573
23	Chino Hills Pkwy.	e/o Monte Vista Av.	Industrial	73.9	110	237	510
24	El Prado Rd.	e/o Central Av.	Industrial/Urban Reserve	77.0	129	279	601
25	Kimball Av.	e/o El Prado Rd.	Industrial/Urban Reserve	77.0	129	278	599
26	Kimball Av.	e/o Mountain Av.	Industrial/Urban Reserve	76.8	124	268	578
27	Kimball Av.	e/o San Antonio Av.	Industrial	76.8	126	271	584
28	Kimball Av.	e/o Fern Av.	Industrial	77.2	133	286	617
29	Kimball Av.	e/o Euclid Av.	Commercial/Public	77.3	150	323	696
30	Kimball Av.	w/o Rincon Meadows Av.	Residential	76.4	131	283	609
31	Kimball Av.	e/o Rincon Meadows Av.	Residential	76.3	128	276	594
32	Kimball Av.	e/o Mill Creek Av.	Residential	76.3	129	277	597
33	Kimball Av.	e/o Main St.	Residential	74.9	104	224	482
34	Kimball Av.	e/o Flight Av.	Residential	74.2	93	200	430
35	Kimball Av.	e/o Meadow Valley Av.	Residential	73.8	87	188	405
36	Pine Av.	e/o Euclid Av.	Urban Reserve (Residential)	75.1	131	282	608

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

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

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

TABLE 7-9: OPENING YEAR 2020 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 Chino Hills Pkwy.	Urban Reserve (Prison)	75.5	139	299	644
2	Central Av.	s/o Chino Hills Pkwy.	Office Commercial	75.4	138	298	642
3	Central Av.	s/o El Prado Rd.	Office Commercial	76.3	157	338	729
4	Euclid Av.	n/o SR-60	Residential	78.5	309	666	1436
5	Euclid Av.	s/o SR-60	Commercial	79.6	367	791	1704
6	Euclid Av.	s/o Walnut St.	Residential	79.2	343	740	1594
7	Euclid Av.	s/o Riverside Dr.	Residential	80.9	449	968	2085
8	Euclid Av.	s/o Chino Av.	Residential	81.2	468	1008	2172
9	Euclid Av.	s/o Schaefer Av.	Residential	81.1	463	998	2150
10	Euclid Av.	s/o Edison Av.	Mixed-Use (Residential)	81.0	453	975	2101
11	Euclid Av.	s/o Eucalyptus Av.	Residential	81.2	472	1017	2190
12	Euclid Av.	s/o Merrill Av.	Urban Reserve (Prison)	80.5	418	901	1942
13	Euclid Av.	s/o Kimball Av.	Industrial (Residential)	79.4	356	766	1651
14	Euclid Av.	s/o Bickmore Av.	Commercial (Agricultural)	79.0	335	721	1553
15	Euclid Av.	s/o Pine Av.	Urban Reserve	81.1	460	992	2136
16	Flight Av.	n/o Kimball Av.	Industrial	72.2	42	91	196
17	Hellman Av.	s/o Kimball Av.	Residential	72.4	71	153	329
18	Edison Av.	w/o Euclid Av.	Business Park (Church)	73.6	105	226	486
19	Eucalyptus Av.	w/o Euclid Av.	Residential	68.4	RW	75	161
20	Chino Hills Pkwy.	w/o SR-71	Residential	76.8	139	299	645
21	Chino Hills Pkwy.	e/o SR-71	Commercial	76.2	127	273	587
22	Chino Hills Pkwy.	e/o Ramona Av.	Commercial	76.0	122	263	568
23	Chino Hills Pkwy.	e/o Monte Vista Av.	Industrial	74.4	118	255	550
24	El Prado Rd.	e/o Central Av.	Industrial/Urban Reserve	76.8	125	269	580
25	Kimball Av.	e/o El Prado Rd.	Industrial/Urban Reserve	76.7	123	266	572
26	Kimball Av.	e/o Mountain Av.	Industrial/Urban Reserve	76.5	118	255	550
27	Kimball Av.	e/o San Antonio Av.	Industrial	76.5	120	258	557
28	Kimball Av.	e/o Fern Av.	Industrial	76.9	127	274	590
29	Kimball Av.	e/o Euclid Av.	Commercial/Public	76.2	128	275	593
30	Kimball Av.	w/o Rincon Meadows Av.	Residential	76.4	130	281	605
31	Kimball Av.	e/o Rincon Meadows Av.	Residential	76.2	127	274	590
32	Kimball Av.	e/o Mill Creek Av.	Residential	76.2	128	275	593
33	Kimball Av.	e/o Main St.	Residential	74.8	102	221	475
34	Kimball Av.	e/o Flight Av.	Residential	74.2	93	201	433
35	Kimball Av.	e/o Meadow Valley Av.	Residential	73.8	88	189	408
36	Pine Av.	e/o Euclid Av.	Urban Reserve (Residential)	75.1	131	282	608

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

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

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

TABLE 7-10: OPENING YEAR 2020 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 Chino Hills Pkwy.	Urban Reserve (Prison)	75.5	139	299	645
2	Central Av.	s/o Chino Hills Pkwy.	Office Commercial	75.7	143	308	664
3	Central Av.	s/o El Prado Rd.	Office Commercial	76.5	163	352	758
4	Euclid Av.	n/o SR-60	Residential	78.5	310	667	1437
5	Euclid Av.	s/o SR-60	Commercial	80.1	398	858	1849
6	Euclid Av.	s/o Walnut St.	Residential	79.8	376	810	1745
7	Euclid Av.	s/o Riverside Dr.	Residential	81.5	489	1054	2271
8	Euclid Av.	s/o Chino Av.	Residential	81.7	508	1094	2356
9	Euclid Av.	s/o Schaefer Av.	Residential	81.7	504	1085	2337
10	Euclid Av.	s/o Edison Av.	Mixed-Use (Residential)	81.5	495	1066	2296
11	Euclid Av.	s/o Eucalyptus Av.	Residential	81.8	514	1108	2386
12	Euclid Av.	s/o Merrill Av.	Urban Reserve (Prison)	81.1	463	998	2149
13	Euclid Av.	s/o Kimball Av.	Industrial (Residential)	79.7	371	799	1721
14	Euclid Av.	s/o Bickmore Av.	Commercial (Agricultural)	79.5	363	781	1684
15	Euclid Av.	s/o Pine Av.	Urban Reserve	81.3	480	1033	2226
16	Flight Av.	n/o Kimball Av.	Industrial	72.6	45	96	207
17	Hellman Av.	s/o Kimball Av.	Residential	72.4	71	154	331
18	Edison Av.	w/o Euclid Av.	Business Park (Church)	73.7	105	227	488
19	Eucalyptus Av.	w/o Euclid Av.	Residential	68.5	RW	75	162
20	Chino Hills Pkwy.	w/o SR-71	Residential	76.8	139	299	645
21	Chino Hills Pkwy.	e/o SR-71	Commercial	76.4	131	281	606
22	Chino Hills Pkwy.	e/o Ramona Av.	Commercial	76.2	127	273	587
23	Chino Hills Pkwy.	e/o Monte Vista Av.	Industrial	74.7	123	266	573
24	El Prado Rd.	e/o Central Av.	Industrial/Urban Reserve	77.3	134	289	623
25	Kimball Av.	e/o El Prado Rd.	Industrial/Urban Reserve	77.3	134	290	624
26	Kimball Av.	e/o Mountain Av.	Industrial/Urban Reserve	77.0	130	280	602
27	Kimball Av.	e/o San Antonio Av.	Industrial	77.1	131	283	609
28	Kimball Av.	e/o Fern Av.	Industrial	77.4	138	297	641
29	Kimball Av.	e/o Euclid Av.	Commercial/Public	77.9	165	355	765
30	Kimball Av.	w/o Rincon Meadows Av.	Residential	76.5	134	288	620
31	Kimball Av.	e/o Rincon Meadows Av.	Residential	76.4	130	281	605
32	Kimball Av.	e/o Mill Creek Av.	Residential	76.4	131	282	607
33	Kimball Av.	e/o Main St.	Residential	75.0	106	228	491
34	Kimball Av.	e/o Flight Av.	Residential	74.2	94	202	435
35	Kimball Av.	e/o Meadow Valley Av.	Residential	73.8	88	190	410
36	Pine Av.	e/o Euclid Av.	Urban Reserve (Residential)	75.2	133	288	619

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

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

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

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

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Nearest Adjacent Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Central Av.	n/o Chino Hills Pkwy.	Urban Reserve (Prison)	76.2	156	336	724
2	Central Av.	s/o Chino Hills Pkwy.	Office Commercial	75.3	135	291	626
3	Central Av.	s/o El Prado Rd.	Office Commercial	75.6	142	307	661
4	Euclid Av.	n/o SR-60	Residential	79.9	384	827	1781
5	Euclid Av.	s/o SR-60	Commercial	79.7	374	805	1735
6	Euclid Av.	s/o Walnut St.	Residential	79.6	364	785	1692
7	Euclid Av.	s/o Riverside Dr.	Residential	81.9	525	1131	2436
8	Euclid Av.	s/o Chino Av.	Residential	82.2	546	1176	2535
9	Euclid Av.	s/o Schaefer Av.	Residential	82.2	548	1180	2543
10	Euclid Av.	s/o Edison Av.	Mixed-Use (Residential)	81.2	467	1006	2167
11	Euclid Av.	s/o Eucalyptus Av.	Residential	81.4	482	1038	2237
12	Euclid Av.	s/o Merrill Av.	Urban Reserve (Prison)	81.6	500	1076	2319
13	Euclid Av.	s/o Kimball Av.	Industrial (Residential)	80.2	404	871	1876
14	Euclid Av.	s/o Bickmore Av.	Commercial (Agricultural)	80.0	388	836	1802
15	Euclid Av.	s/o Pine Av.	Urban Reserve	82.1	535	1153	2483
16	Flight Av.	n/o Kimball Av.	Industrial	64.8	RW	RW	63
17	Hellman Av.	s/o Kimball Av.	Residential	73.6	86	184	397
18	Edison Av.	w/o Euclid Av.	Business Park (Church)	75.1	131	282	607
19	Eucalyptus Av.	w/o Euclid Av.	Residential	67.6	RW	66	142
20	Chino Hills Pkwy.	w/o SR-71	Residential	76.6	135	292	629
21	Chino Hills Pkwy.	e/o SR-71	Commercial	75.7	118	253	546
22	Chino Hills Pkwy.	e/o Ramona Av.	Commercial	75.7	118	254	546
23	Chino Hills Pkwy.	e/o Monte Vista Av.	Industrial	74.2	114	246	529
24	El Prado Rd.	e/o Central Av.	Industrial/Urban Reserve	74.2	84	181	390
25	Kimball Av.	e/o El Prado Rd.	Industrial/Urban Reserve	75.7	106	229	493
26	Kimball Av.	e/o Mountain Av.	Industrial/Urban Reserve	75.3	99	213	459
27	Kimball Av.	e/o San Antonio Av.	Industrial	75.2	98	212	456
28	Kimball Av.	e/o Fern Av.	Industrial	75.4	101	217	467
29	Kimball Av.	e/o Euclid Av.	Commercial/Public	75.5	114	245	529
30	Kimball Av.	w/o Rincon Meadows Av.	Residential	75.7	117	252	543
31	Kimball Av.	e/o Rincon Meadows Av.	Residential	76.3	129	278	598
32	Kimball Av.	e/o Mill Creek Av.	Residential	76.6	136	293	630
33	Kimball Av.	e/o Main St.	Residential	78.2	173	373	803
34	Kimball Av.	e/o Flight Av.	Residential	73.8	88	190	410
35	Kimball Av.	e/o Meadow Valley Av.	Residential	73.7	87	188	404
36	Pine Av.	e/o Euclid Av.	Urban Reserve (Residential)	76.6	165	355	765

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

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

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

TABLE 7-12: HORIZON YEAR 2040 WITHOUT LIMONITE EXT. WITH PROJECT NOISE CONTOURS

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Nearest Adjacent Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Central Av.	n/o Chino Hills Pkwy.	Urban Reserve (Prison)	76.2	156	337	725
2	Central Av.	s/o Chino Hills Pkwy.	Office Commercial	75.5	140	301	648
3	Central Av.	s/o El Prado Rd.	Office Commercial	75.9	149	321	691
4	Euclid Av.	n/o SR-60	Residential	79.9	384	827	1783
5	Euclid Av.	s/o SR-60	Commercial	80.2	405	872	1879
6	Euclid Av.	s/o Walnut St.	Residential	80.1	396	854	1839
7	Euclid Av.	s/o Riverside Dr.	Residential	82.4	562	1211	2609
8	Euclid Av.	s/o Chino Av.	Residential	82.6	583	1256	2706
9	Euclid Av.	s/o Schaefer Av.	Residential	82.6	585	1261	2716
10	Euclid Av.	s/o Edison Av.	Mixed-Use (Residential)	81.7	508	1095	2359
11	Euclid Av.	s/o Eucalyptus Av.	Residential	81.9	524	1128	2431
12	Euclid Av.	s/o Merrill Av.	Urban Reserve (Prison)	82.1	541	1165	2510
13	Euclid Av.	s/o Kimball Av.	Industrial (Residential)	80.5	418	901	1942
14	Euclid Av.	s/o Bickmore Av.	Commercial (Agricultural)	80.4	414	893	1923
15	Euclid Av.	s/o Pine Av.	Urban Reserve	82.3	553	1191	2566
16	Flight Av.	n/o Kimball Av.	Industrial	66.5	RW	38	82
17	Hellman Av.	s/o Kimball Av.	Residential	73.7	86	185	399
18	Edison Av.	w/o Euclid Av.	Business Park (Church)	75.1	131	283	609
19	Eucalyptus Av.	w/o Euclid Av.	Residential	67.7	RW	67	143
20	Chino Hills Pkwy.	w/o SR-71	Residential	76.6	136	292	629
21	Chino Hills Pkwy.	e/o SR-71	Commercial	75.9	122	262	565
22	Chino Hills Pkwy.	e/o Ramona Av.	Commercial	75.9	122	263	566
23	Chino Hills Pkwy.	e/o Monte Vista Av.	Industrial	74.5	119	256	552
24	El Prado Rd.	e/o Central Av.	Industrial/Urban Reserve	75.0	95	205	442
25	Kimball Av.	e/o El Prado Rd.	Industrial/Urban Reserve	76.4	118	254	548
26	Kimball Av.	e/o Mountain Av.	Industrial/Urban Reserve	76.0	111	240	516
27	Kimball Av.	e/o San Antonio Av.	Industrial	76.0	111	238	513
28	Kimball Av.	e/o Fern Av.	Industrial	76.1	113	243	523
29	Kimball Av.	e/o Euclid Av.	Commercial/Public	77.4	153	329	709
30	Kimball Av.	w/o Rincon Meadows Av.	Residential	75.9	120	260	559
31	Kimball Av.	e/o Rincon Meadows Av.	Residential	76.5	132	285	613
32	Kimball Av.	e/o Mill Creek Av.	Residential	76.8	139	299	645
33	Kimball Av.	e/o Main St.	Residential	78.3	176	379	815
34	Kimball Av.	e/o Flight Av.	Residential	73.9	89	192	413
35	Kimball Av.	e/o Meadow Valley Av.	Residential	73.8	88	189	406
36	Pine Av.	e/o Euclid Av.	Urban Reserve (Residential)	76.7	167	360	775

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

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

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

TABLE 7-13: HORIZON YEAR 2040 WITH LIMONITE EXT. WITHOUT PROJECT NOISE CONTOURS

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Nearest Adjacent Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Central Av.	n/o Chino Hills Pkwy.	Urban Reserve (Prison)	76.2	156	336	724
2	Central Av.	s/o Chino Hills Pkwy.	Office Commercial	75.3	135	291	626
3	Central Av.	s/o El Prado Rd.	Office Commercial	75.6	142	307	661
4	Euclid Av.	n/o SR-60	Residential	79.9	384	827	1781
5	Euclid Av.	s/o SR-60	Commercial	79.7	374	805	1735
6	Euclid Av.	s/o Walnut St.	Residential	79.6	364	785	1692
7	Euclid Av.	s/o Riverside Dr.	Residential	81.9	525	1131	2436
8	Euclid Av.	s/o Chino Av.	Residential	82.2	546	1176	2535
9	Euclid Av.	s/o Schaefer Av.	Residential	82.2	548	1180	2543
10	Euclid Av.	s/o Edison Av.	Mixed-Use (Residential)	81.2	467	1006	2167
11	Euclid Av.	s/o Eucalyptus Av.	Residential	81.4	482	1038	2237
12	Euclid Av.	s/o Merrill Av.	Urban Reserve (Prison)	81.6	500	1076	2319
13	Euclid Av.	s/o Kimball Av.	Industrial (Residential)	80.2	404	871	1876
14	Euclid Av.	s/o Bickmore Av.	Commercial (Agricultural)	80.0	388	836	1802
15	Euclid Av.	s/o Pine Av.	Urban Reserve	82.1	535	1153	2483
16	Flight Av.	n/o Kimball Av.	Industrial	70.6	33	70	152
17	Hellman Av.	s/o Kimball Av.	Residential	74.9	104	223	481
18	Edison Av.	w/o Euclid Av.	Business Park (Church)	75.1	131	282	607
19	Eucalyptus Av.	w/o Euclid Av.	Residential	67.6	RW	66	142
20	Chino Hills Pkwy.	w/o SR-71	Residential	76.6	135	292	629
21	Chino Hills Pkwy.	e/o SR-71	Commercial	75.7	118	253	546
22	Chino Hills Pkwy.	e/o Ramona Av.	Commercial	75.7	118	254	546
23	Chino Hills Pkwy.	e/o Monte Vista Av.	Industrial	74.2	114	246	529
24	El Prado Rd.	e/o Central Av.	Industrial/Urban Reserve	74.2	84	181	390
25	Kimball Av.	e/o El Prado Rd.	Industrial/Urban Reserve	75.7	106	229	493
26	Kimball Av.	e/o Mountain Av.	Industrial/Urban Reserve	75.3	99	213	459
27	Kimball Av.	e/o San Antonio Av.	Industrial	75.2	98	212	456
28	Kimball Av.	e/o Fern Av.	Industrial	75.4	101	217	467
29	Kimball Av.	e/o Euclid Av.	Commercial/Public	75.5	114	245	529
30	Kimball Av.	w/o Rincon Meadows Av.	Residential	75.7	117	252	543
31	Kimball Av.	e/o Rincon Meadows Av.	Residential	76.5	132	284	613
32	Kimball Av.	e/o Mill Creek Av.	Residential	77.3	151	325	700
33	Kimball Av.	e/o Main St.	Residential	78.7	186	402	866
34	Kimball Av.	e/o Flight Av.	Residential	76.0	123	266	573
35	Kimball Av.	e/o Meadow Valley Av.	Residential	76.0	122	263	567
36	Pine Av.	e/o Euclid Av.	Urban Reserve (Residential)	76.6	165	355	765
37	Limonite Av.	e/o Hellman Av.	Industrial (Agricultural)	72.9	118	255	549
38	Limonite Av.	e/o Archibald Av.	Industrial (Agricultural)	75.1	166	357	769
39	Limonite Av.	e/o Harrison Av.	Residential	75.4	174	374	806
40	Limonite Av.	e/o Sumner Av.	Residential	75.3	172	371	799
41	Limonite Av.	e/o Scholar Wy.	Residential	75.3	172	372	801
42	Limonite Av.	e/o Hamner Av.	Commercial	75.7	182	393	846

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

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

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

TABLE 7-14: HORIZON YEAR 2040 WITH LIMONITE EXT. WITH PROJECT NOISE CONTOURS

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Nearest Adjacent Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Central Av.	n/o Chino Hills Pkwy.	Urban Reserve (Prison)	76.2	156	337	725
2	Central Av.	s/o Chino Hills Pkwy.	Office Commercial	75.5	140	301	648
3	Central Av.	s/o El Prado Rd.	Office Commercial	75.9	149	321	691
4	Euclid Av.	n/o SR-60	Residential	79.9	384	827	1783
5	Euclid Av.	s/o SR-60	Commercial	80.2	401	865	1864
6	Euclid Av.	s/o Walnut St.	Residential	80.0	393	846	1824
7	Euclid Av.	s/o Riverside Dr.	Residential	82.3	558	1203	2591
8	Euclid Av.	s/o Chino Av.	Residential	82.6	579	1248	2689
9	Euclid Av.	s/o Schaefer Av.	Residential	82.6	581	1253	2699
10	Euclid Av.	s/o Edison Av.	Mixed-Use (Residential)	81.7	504	1086	2341
11	Euclid Av.	s/o Eucalyptus Av.	Residential	81.9	520	1120	2413
12	Euclid Av.	s/o Merrill Av.	Urban Reserve (Prison)	82.1	537	1157	2492
13	Euclid Av.	s/o Kimball Av.	Industrial (Residential)	80.4	413	890	1917
14	Euclid Av.	s/o Bickmore Av.	Commercial (Agricultural)	80.3	411	885	1906
15	Euclid Av.	s/o Pine Av.	Urban Reserve	82.2	549	1183	2548
16	Flight Av.	n/o Kimball Av.	Industrial	71.1	35	76	164
17	Hellman Av.	s/o Kimball Av.	Residential	74.9	104	224	482
18	Edison Av.	w/o Euclid Av.	Business Park (Church)	75.1	131	283	609
19	Eucalyptus Av.	w/o Euclid Av.	Residential	67.7	RW	67	143
20	Chino Hills Pkwy.	w/o SR-71	Residential	76.6	136	292	629
21	Chino Hills Pkwy.	e/o SR-71	Commercial	75.9	122	262	565
22	Chino Hills Pkwy.	e/o Ramona Av.	Commercial	75.9	122	263	566
23	Chino Hills Pkwy.	e/o Monte Vista Av.	Industrial	74.5	119	256	552
24	El Prado Rd.	e/o Central Av.	Industrial/Urban Reserve	75.0	95	205	442
25	Kimball Av.	e/o El Prado Rd.	Industrial/Urban Reserve	76.4	118	254	548
26	Kimball Av.	e/o Mountain Av.	Industrial/Urban Reserve	76.0	111	240	516
27	Kimball Av.	e/o San Antonio Av.	Industrial	76.0	111	238	513
28	Kimball Av.	e/o Fern Av.	Industrial	76.1	113	243	523
29	Kimball Av.	e/o Euclid Av.	Commercial/Public	77.2	148	320	689
30	Kimball Av.	w/o Rincon Meadows Av.	Residential	76.1	125	269	580
31	Kimball Av.	e/o Rincon Meadows Av.	Residential	76.8	140	301	648
32	Kimball Av.	e/o Mill Creek Av.	Residential	77.6	158	340	732
33	Kimball Av.	e/o Main St.	Residential	78.9	193	415	894
34	Kimball Av.	e/o Flight Av.	Residential	76.3	128	277	596
35	Kimball Av.	e/o Meadow Valley Av.	Residential	76.2	127	274	591
36	Pine Av.	e/o Euclid Av.	Urban Reserve (Residential)	76.7	167	360	775
37	Limonite Av.	e/o Hellman Av.	Industrial (Agricultural)	73.1	122	264	568
38	Limonite Av.	e/o Archibald Av.	Industrial (Agricultural)	75.2	169	365	786
39	Limonite Av.	e/o Harrison Av.	Residential	75.5	177	382	822
40	Limonite Av.	e/o Sumner Av.	Residential	75.5	176	378	815
41	Limonite Av.	e/o Scholar Wy.	Residential	75.5	176	379	817
42	Limonite Av.	e/o Hamner Av.	Commercial	75.8	185	400	861

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

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

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

7.2 EXISTING CONDITIONS PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

To satisfy the CEQA Guidelines Section 15125(a), an analysis of existing traffic noise levels plus traffic noise generated by the proposed Project (E+P) has been included in this report. The analysis of existing traffic noise levels plus traffic noise generated by the proposed Project (E+P) scenario will not actually occur since the Project would not be fully constructed and operational until Opening Year 2020 conditions. Table 7-1 presents the Existing without Project conditions CNEL noise levels. The Existing without Project exterior noise levels are expected to range from 66.4 to 79.8 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography.

7.2.1 WITH PHASE 1 OFF-SITE TRAFFIC NOISE LEVEL CONDITIONS

Table 7-2 shows the Existing with Phase 1 conditions will range from 66.8 to 79.9 dBA CNEL. As shown on Table 7-15, Project Phase 1 will generate noise level increases ranging from 0.0 to 0.8 dBA CNEL on the study area roadway segments. Based on the significance criteria in Section 4, land uses adjacent to the following roadway segments would experience *less than significant* noise level increases due to Project Phase 1 traffic-related noise level increases.

7.2.2 WITH PHASE 1 & 2 OFF-SITE TRAFFIC NOISE LEVEL CONDITIONS

Table 7-3 shows the Existing with Phase 1 & 2 conditions will range from 67.0 to 80.0 dBA CNEL. As shown on Table 7-16, Phase 1 & 2 traffic conditions will generate noise level increases ranging from 0.0 to 1.5 dBA CNEL on the study area roadway segments. Based on the significance criteria in Section 4, land uses adjacent to the following roadway segments would experience *less than significant* noise level increases due to Project Phase 1 & 2 traffic-related noise level increases.

7.2.3 WITH PROJECT BUILDOUT OFF-SITE TRAFFIC NOISE LEVEL CONDITIONS

Table 7-4 shows the Existing with Project Buildout conditions will range from 67.0 to 80.2 dBA CNEL. As shown on Table 7-17, Project Buildout will generate noise level increases ranging from 0.0 to 2.2 dBA CNEL on the study area roadway segments. Based on the significance criteria in Section 4, land uses adjacent to the following roadway segments would experience *less than significant* noise level increases due to Project Buildout traffic-related noise level increases.

TABLE 7-15: EXISTING WITH PHASE 1 PROJECT TRAFFIC NOISE CONTRIBUTIONS

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold Exceeded?[3]
				No Project	With Project	Project Addition		
1	Central Av.	n/o Chino Hills Pkwy.	Urban Reserve (Prison)	75.1	75.1	0.0	Yes	No
2	Central Av.	s/o Chino Hills Pkwy.	Office Commercial	74.8	74.9	0.1	No	No
3	Central Av.	s/o El Prado Rd.	Office Commercial	75.4	75.5	0.1	No	No
4	Euclid Av.	n/o SR-60	Residential	78.0	78.0	0.0	Yes	No
5	Euclid Av.	s/o SR-60	Commercial	78.1	78.4	0.3	No	No
6	Euclid Av.	s/o Walnut St.	Residential	77.5	77.8	0.3	Yes	No
7	Euclid Av.	s/o Riverside Dr.	Residential	79.1	79.4	0.3	Yes	No
8	Euclid Av.	s/o Chino Av.	Residential	79.4	79.7	0.3	Yes	No
9	Euclid Av.	s/o Schaefer Av.	Residential	79.2	79.5	0.3	Yes	No
10	Euclid Av.	s/o Edison Av.	Mixed-Use (Res.)	78.7	79.0	0.3	Yes	No
11	Euclid Av.	s/o Eucalyptus Av.	Residential	78.9	79.2	0.3	Yes	No
12	Euclid Av.	s/o Merrill Av.	Urban Reserve (Prison)	78.8	79.1	0.3	Yes	No
13	Euclid Av.	s/o Kimball Av.	Industrial (Res.)	77.5	77.6	0.1	Yes	No
14	Euclid Av.	s/o Bickmore Av.	Commercial (Agr.)	76.8	77.1	0.3	No	No
15	Euclid Av.	s/o Pine Av.	Urban Reserve	79.8	79.9	0.1	Yes	No
16	Flight Av.	n/o Kimball Av.	Industrial	66.4	66.8	0.4	No	No
17	Hellman Av.	s/o Kimball Av.	Residential	72.7	72.7	0.0	Yes	No
18	Edison Av.	w/o Euclid Av.	Business Park (Church)	72.9	72.9	0.0	Yes	No
19	Eucalyptus Av.	w/o Euclid Av.	Residential	67.0	67.0	0.0	Yes	No
20	Chino Hills Pkwy.	w/o SR-71	Residential	76.4	76.4	0.0	Yes	No
21	Chino Hills Pkwy.	e/o SR-71	Commercial	75.6	75.7	0.1	No	No
22	Chino Hills Pkwy.	e/o Ramona Av.	Commercial	75.3	75.4	0.1	No	No
23	Chino Hills Pkwy.	e/o Monte Vista Av.	Industrial	73.8	73.9	0.1	No	No
24	El Prado Rd.	e/o Central Av.	Industrial/Urban Rsrv.	75.6	75.8	0.2	Yes	No
25	Kimball Av.	e/o El Prado Rd.	Industrial/Urban Rsrv.	75.3	75.5	0.2	Yes	No
26	Kimball Av.	e/o Mountain Av.	Industrial/Urban Rsrv.	74.8	75.1	0.3	Yes	No
27	Kimball Av.	e/o San Antonio Av.	Industrial	74.8	75.0	0.2	No	No
28	Kimball Av.	e/o Fern Av.	Industrial	75.0	75.2	0.2	No	No
29	Kimball Av.	e/o Euclid Av.	Commercial/Public	74.7	75.5	0.8	No	No
30	Kimball Av.	w/o Rincon Meadows Av.	Residential	74.9	75.0	0.1	Yes	No
31	Kimball Av.	e/o Rincon Meadows Av.	Residential	74.8	74.9	0.1	Yes	No
32	Kimball Av.	e/o Mill Creek Av.	Residential	74.3	74.3	0.0	Yes	No
33	Kimball Av.	e/o Main St.	Residential	72.9	73.0	0.1	Yes	No
34	Kimball Av.	e/o Flight Av.	Residential	73.8	73.8	0.0	Yes	No
35	Kimball Av.	e/o Meadow Valley Av.	Residential	73.7	73.7	0.0	Yes	No
36	Pine Av.	e/o Euclid Av.	Urban Reserve (Res.)	74.4	74.5	0.1	Yes	No

[1] Sources: City of Chino General Plan, Figure LU-2, The Ontario Plan Land Use Plan, Exhibit LU-01, and the City of Eastvale General Plan Land Use Map.
[2] The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.
[3] Significance Criteria (Section 4).

TABLE 7-16: EXISTING WITH PHASE 1 & 2 PROJECT TRAFFIC NOISE CONTRIBUTIONS

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold Exceeded?[3]
				No Project	With Project	Project Addition		
1	Central Av.	n/o Chino Hills Pkwy.	Urban Reserve (Prison)	75.1	75.1	0.0	Yes	No
2	Central Av.	s/o Chino Hills Pkwy.	Office Commercial	74.8	74.9	0.1	No	No
3	Central Av.	s/o El Prado Rd.	Office Commercial	75.4	75.6	0.2	No	No
4	Euclid Av.	n/o SR-60	Residential	78.0	78.0	0.0	Yes	No
5	Euclid Av.	s/o SR-60	Commercial	78.1	78.6	0.5	No	No
6	Euclid Av.	s/o Walnut St.	Residential	77.5	78.0	0.5	Yes	No
7	Euclid Av.	s/o Riverside Dr.	Residential	79.1	79.6	0.5	Yes	No
8	Euclid Av.	s/o Chino Av.	Residential	79.4	79.9	0.5	Yes	No
9	Euclid Av.	s/o Schaefer Av.	Residential	79.2	79.7	0.5	Yes	No
10	Euclid Av.	s/o Edison Av.	Mixed-Use (Res.)	78.7	79.3	0.6	Yes	No
11	Euclid Av.	s/o Eucalyptus Av.	Residential	78.9	79.5	0.6	Yes	No
12	Euclid Av.	s/o Merrill Av.	Urban Reserve (Prison)	78.8	79.4	0.6	Yes	No
13	Euclid Av.	s/o Kimball Av.	Industrial (Res.)	77.5	77.7	0.2	Yes	No
14	Euclid Av.	s/o Bickmore Av.	Commercial (Agr.)	76.8	77.4	0.6	No	No
15	Euclid Av.	s/o Pine Av.	Urban Reserve	79.8	80.0	0.2	Yes	No
16	Flight Av.	n/o Kimball Av.	Industrial	66.4	67.2	0.8	No	No
17	Hellman Av.	s/o Kimball Av.	Residential	72.7	72.7	0.0	Yes	No
18	Edison Av.	w/o Euclid Av.	Business Park (Church)	72.9	72.9	0.0	Yes	No
19	Eucalyptus Av.	w/o Euclid Av.	Residential	67.0	67.0	0.0	Yes	No
20	Chino Hills Pkwy.	w/o SR-71	Residential	76.4	76.4	0.0	Yes	No
21	Chino Hills Pkwy.	e/o SR-71	Commercial	75.6	75.8	0.2	No	No
22	Chino Hills Pkwy.	e/o Ramona Av.	Commercial	75.3	75.5	0.2	No	No
23	Chino Hills Pkwy.	e/o Monte Vista Av.	Industrial	73.8	74.0	0.2	No	No
24	El Prado Rd.	e/o Central Av.	Industrial/Urban Rsrv.	75.6	76.0	0.4	Yes	No
25	Kimball Av.	e/o El Prado Rd.	Industrial/Urban Rsrv.	75.3	75.8	0.5	Yes	No
26	Kimball Av.	e/o Mountain Av.	Industrial/Urban Rsrv.	74.8	75.4	0.6	Yes	No
27	Kimball Av.	e/o San Antonio Av.	Industrial	74.8	75.3	0.5	No	No
28	Kimball Av.	e/o Fern Av.	Industrial	75.0	75.5	0.5	No	No
29	Kimball Av.	e/o Euclid Av.	Commercial/Public	74.7	76.2	1.5	No	No
30	Kimball Av.	w/o Rincon Meadows Av.	Residential	74.9	75.1	0.2	Yes	No
31	Kimball Av.	e/o Rincon Meadows Av.	Residential	74.8	74.9	0.1	Yes	No
32	Kimball Av.	e/o Mill Creek Av.	Residential	74.3	74.4	0.1	Yes	No
33	Kimball Av.	e/o Main St.	Residential	72.9	73.1	0.2	Yes	No
34	Kimball Av.	e/o Flight Av.	Residential	73.8	73.8	0.0	Yes	No
35	Kimball Av.	e/o Meadow Valley Av.	Residential	73.7	73.7	0.0	Yes	No
36	Pine Av.	e/o Euclid Av.	Urban Reserve (Res.)	74.4	74.5	0.1	Yes	No

[1] Sources: City of Chino General Plan, Figure LU-2, The Ontario Plan Land Use Plan, Exhibit LU-01, and the City of Eastvale General Plan Land Use Map.
[2] The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.
[3] Significance Criteria (Section 4).

TABLE 7-17: EXISTING WITH PROJECT BUILDOUT TRAFFIC NOISE CONTRIBUTIONS

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold Exceeded?[3]
				No Project	With Project	Project Addition		
1	Central Av.	n/o Chino Hills Pkwy.	Urban Reserve (Prison)	75.1	75.1	0.0	Yes	No
2	Central Av.	s/o Chino Hills Pkwy.	Office Commercial	74.8	75.0	0.2	No	No
3	Central Av.	s/o El Prado Rd.	Office Commercial	75.4	75.8	0.4	No	No
4	Euclid Av.	n/o SR-60	Residential	78.0	78.0	0.0	Yes	No
5	Euclid Av.	s/o SR-60	Commercial	78.1	78.9	0.8	No	No
6	Euclid Av.	s/o Walnut St.	Residential	77.5	78.3	0.8	Yes	No
7	Euclid Av.	s/o Riverside Dr.	Residential	79.1	79.9	0.8	Yes	No
8	Euclid Av.	s/o Chino Av.	Residential	79.4	80.2	0.8	Yes	No
9	Euclid Av.	s/o Schaefer Av.	Residential	79.2	80.0	0.8	Yes	No
10	Euclid Av.	s/o Edison Av.	Mixed-Use (Res.)	78.7	79.7	1.0	Yes	No
11	Euclid Av.	s/o Eucalyptus Av.	Residential	78.9	79.8	0.9	Yes	No
12	Euclid Av.	s/o Merrill Av.	Urban Reserve (Prison)	78.8	79.7	0.9	Yes	No
13	Euclid Av.	s/o Kimball Av.	Industrial (Res.)	77.5	77.9	0.4	Yes	No
14	Euclid Av.	s/o Bickmore Av.	Commercial (Agr.)	76.8	77.7	0.9	No	No
15	Euclid Av.	s/o Pine Av.	Urban Reserve	79.8	80.2	0.4	Yes	No
16	Flight Av.	n/o Kimball Av.	Industrial	66.4	67.6	1.2	No	No
17	Hellman Av.	s/o Kimball Av.	Residential	72.7	72.7	0.0	Yes	No
18	Edison Av.	w/o Euclid Av.	Business Park (Church)	72.9	72.9	0.0	Yes	No
19	Eucalyptus Av.	w/o Euclid Av.	Residential	67.0	67.0	0.0	Yes	No
20	Chino Hills Pkwy.	w/o SR-71	Residential	76.4	76.4	0.0	Yes	No
21	Chino Hills Pkwy.	e/o SR-71	Commercial	75.6	75.8	0.2	No	No
22	Chino Hills Pkwy.	e/o Ramona Av.	Commercial	75.3	75.6	0.3	No	No
23	Chino Hills Pkwy.	e/o Monte Vista Av.	Industrial	73.8	74.1	0.3	No	No
24	El Prado Rd.	e/o Central Av.	Industrial/Urban Rsrv.	75.6	76.2	0.6	Yes	No
25	Kimball Av.	e/o El Prado Rd.	Industrial/Urban Rsrv.	75.3	76.1	0.8	Yes	No
26	Kimball Av.	e/o Mountain Av.	Industrial/Urban Rsrv.	74.8	75.7	0.9	Yes	No
27	Kimball Av.	e/o San Antonio Av.	Industrial	74.8	75.6	0.8	No	No
28	Kimball Av.	e/o Fern Av.	Industrial	75.0	75.8	0.8	No	No
29	Kimball Av.	e/o Euclid Av.	Commercial/Public	74.7	76.9	2.2	No	No
30	Kimball Av.	w/o Rincon Meadows Av.	Residential	74.9	75.2	0.3	Yes	No
31	Kimball Av.	e/o Rincon Meadows Av.	Residential	74.8	75.0	0.2	Yes	No
32	Kimball Av.	e/o Mill Creek Av.	Residential	74.3	74.5	0.2	Yes	No
33	Kimball Av.	e/o Main St.	Residential	72.9	73.2	0.3	Yes	No
34	Kimball Av.	e/o Flight Av.	Residential	73.8	73.8	0.0	Yes	No
35	Kimball Av.	e/o Meadow Valley Av.	Residential	73.7	73.7	0.0	Yes	No
36	Pine Av.	e/o Euclid Av.	Urban Reserve (Res.)	74.4	74.6	0.2	Yes	No

[1] Sources: City of Chino General Plan, Figure LU-2, The Ontario Plan Land Use Plan, Exhibit LU-01, and the City of Eastvale General Plan Land Use Map.
[2] The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.
[3] Significance Criteria (Section 4).

7.3 OPENING YEAR 2018 PHASE 1 TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-5 presents the Opening Year 2018 without Project conditions CNEL noise levels. The Opening Year 2018 without Project exterior noise levels are expected to range from 68.3 to 81.1 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-6 shows the unmitigated Opening Year 2018 with Project conditions will range from 68.3 to 81.3 dBA CNEL. As shown on Table 7-18 the Project will generate noise level increases of up to 0.5 dBA CNEL on the study area roadway segments. Based on the significance criteria in Section 4, land uses adjacent to the following roadway segments would experience *less than significant* noise level increases due to unmitigated Project-related traffic under Opening Year 2018 Phase 1 conditions.

7.4 OPENING YEAR 2019 PHASE 1 & 2 TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-7 presents the Opening Year 2019 without Project conditions CNEL noise levels. The Opening Year 2019 without Project exterior noise levels are expected to range from 68.4 to 81.2 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-8 shows the unmitigated Opening Year 2019 with Project conditions will range from 68.4 to 81.5 dBA CNEL. As shown on Table 7-19, the Project will generate noise level increases of up to 1.1 dBA CNEL on the study area roadway segments. Based on the significance criteria in Section 4, land uses adjacent to the following roadway segments would experience *less than significant* noise level increases due to unmitigated Project-related traffic under Opening Year 2019 Phase 1 & 2 conditions.

7.5 OPENING YEAR 2020 PROJECT BUILDOUT TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-9 presents the Opening Year 2020 without Project conditions CNEL noise levels. The Opening Year 2020 without Project exterior noise levels are expected to range from 68.4 to 81.2 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-10 shows the unmitigated Opening Year 2020 with Project conditions will range from 68.5 to 81.8 dBA CNEL. As shown on Table 7-20, the Project will generate noise level increases of up to 1.7 dBA CNEL on the study area roadway segments. Based on the significance criteria in Section 4, land uses adjacent to the following roadway segments would experience *less than significant* noise level increases due to unmitigated Project-related traffic under Opening Year 2020 Project Buildout conditions.

TABLE 7-18: OPENING YEAR 2018 PHASE 1 TRAFFIC NOISE CONTRIBUTIONS

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold Exceeded?[3]
				No Project	With Project	Project Addition		
1	Central Av.	n/o Chino Hills Pkwy.	Urban Reserve (Prison)	75.3	75.3	0.0	Yes	No
2	Central Av.	s/o Chino Hills Pkwy.	Office Commercial	75.3	75.3	0.0	No	No
3	Central Av.	s/o El Prado Rd.	Office Commercial	76.1	76.2	0.1	No	No
4	Euclid Av.	n/o SR-60	Residential	78.3	78.3	0.0	Yes	No
5	Euclid Av.	s/o SR-60	Commercial	79.5	79.6	0.1	No	No
6	Euclid Av.	s/o Walnut St.	Residential	79.0	79.2	0.2	Yes	No
7	Euclid Av.	s/o Riverside Dr.	Residential	80.8	81.0	0.2	Yes	No
8	Euclid Av.	s/o Chino Av.	Residential	81.1	81.2	0.1	Yes	No
9	Euclid Av.	s/o Schaefer Av.	Residential	81.0	81.2	0.2	Yes	No
10	Euclid Av.	s/o Edison Av.	Mixed-Use (Res.)	80.9	81.0	0.1	Yes	No
11	Euclid Av.	s/o Eucalyptus Av.	Residential	81.1	81.3	0.2	Yes	No
12	Euclid Av.	s/o Merrill Av.	Urban Reserve (Prison)	80.3	80.5	0.2	Yes	No
13	Euclid Av.	s/o Kimball Av.	Industrial (Res.)	79.3	79.4	0.1	Yes	No
14	Euclid Av.	s/o Bickmore Av.	Commercial (Agr.)	78.9	79.1	0.2	No	No
15	Euclid Av.	s/o Pine Av.	Urban Reserve	80.9	81.0	0.1	Yes	No
16	Flight Av.	n/o Kimball Av.	Industrial	72.2	72.3	0.1	No	No
17	Hellman Av.	s/o Kimball Av.	Residential	72.3	72.3	0.0	Yes	No
18	Edison Av.	w/o Euclid Av.	Business Park (Church)	73.5	73.5	0.0	Yes	No
19	Eucalyptus Av.	w/o Euclid Av.	Residential	68.3	68.3	0.0	Yes	No
20	Chino Hills Pkwy.	w/o SR-71	Residential	76.6	76.6	0.0	Yes	No
21	Chino Hills Pkwy.	e/o SR-71	Commercial	76.0	76.1	0.1	No	No
22	Chino Hills Pkwy.	e/o Ramona Av.	Commercial	75.8	75.9	0.1	No	No
23	Chino Hills Pkwy.	e/o Monte Vista Av.	Industrial	73.7	73.8	0.1	No	No
24	El Prado Rd.	e/o Central Av.	Industrial/Urban Rsrv.	76.7	76.8	0.1	Yes	No
25	Kimball Av.	e/o El Prado Rd.	Industrial/Urban Rsrv.	76.6	76.8	0.2	Yes	No
26	Kimball Av.	e/o Mountain Av.	Industrial/Urban Rsrv.	76.3	76.5	0.2	Yes	No
27	Kimball Av.	e/o San Antonio Av.	Industrial	76.4	76.6	0.2	No	No
28	Kimball Av.	e/o Fern Av.	Industrial	76.8	77.0	0.2	No	No
29	Kimball Av.	e/o Euclid Av.	Commercial/Public	76.2	76.7	0.5	No	No
30	Kimball Av.	w/o Rincon Meadows Av.	Residential	76.3	76.3	0.0	Yes	No
31	Kimball Av.	e/o Rincon Meadows Av.	Residential	76.1	76.2	0.1	Yes	No
32	Kimball Av.	e/o Mill Creek Av.	Residential	76.1	76.2	0.1	Yes	No
33	Kimball Av.	e/o Main St.	Residential	74.7	74.8	0.1	Yes	No
34	Kimball Av.	e/o Flight Av.	Residential	74.1	74.1	0.0	Yes	No
35	Kimball Av.	e/o Meadow Valley Av.	Residential	73.7	73.7	0.0	Yes	No
36	Pine Av.	e/o Euclid Av.	Urban Reserve (Res.)	74.9	75.0	0.1	Yes	No

[1] Sources: City of Chino General Plan, Figure LU-2, The Ontario Plan Land Use Plan, Exhibit LU-01, and the City of Eastvale General Plan Land Use Map.
[2] The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.
[3] Significance Criteria (Section 4).

TABLE 7-19: OPENING YEAR 2018 PHASE 1 TRAFFIC NOISE CONTRIBUTIONS

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold Exceeded?[3]
				No Project	With Project	Project Addition		
1	Central Av.	n/o Chino Hills Pkwy.	Urban Reserve (Prison)	75.4	75.4	0.0	Yes	No
2	Central Av.	s/o Chino Hills Pkwy.	Office Commercial	75.4	75.5	0.1	No	No
3	Central Av.	s/o El Prado Rd.	Office Commercial	76.2	76.4	0.2	No	No
4	Euclid Av.	n/o SR-60	Residential	78.4	78.4	0.0	Yes	No
5	Euclid Av.	s/o SR-60	Commercial	79.5	79.9	0.4	No	No
6	Euclid Av.	s/o Walnut St.	Residential	79.1	79.5	0.4	Yes	No
7	Euclid Av.	s/o Riverside Dr.	Residential	80.9	81.2	0.3	Yes	No
8	Euclid Av.	s/o Chino Av.	Residential	81.1	81.5	0.4	Yes	No
9	Euclid Av.	s/o Schaefer Av.	Residential	81.1	81.4	0.3	Yes	No
10	Euclid Av.	s/o Edison Av.	Mixed-Use (Res.)	80.9	81.3	0.4	Yes	No
11	Euclid Av.	s/o Eucalyptus Av.	Residential	81.2	81.5	0.3	Yes	No
12	Euclid Av.	s/o Merrill Av.	Urban Reserve (Prison)	80.4	80.8	0.4	Yes	No
13	Euclid Av.	s/o Kimball Av.	Industrial (Res.)	79.3	79.5	0.2	Yes	No
14	Euclid Av.	s/o Bickmore Av.	Commercial (Agr.)	78.9	79.3	0.4	No	No
15	Euclid Av.	s/o Pine Av.	Urban Reserve	81.0	81.2	0.2	Yes	No
16	Flight Av.	n/o Kimball Av.	Industrial	72.2	72.4	0.2	No	No
17	Hellman Av.	s/o Kimball Av.	Residential	72.3	72.4	0.1	Yes	No
18	Edison Av.	w/o Euclid Av.	Business Park (Church)	73.6	73.6	0.0	Yes	No
19	Eucalyptus Av.	w/o Euclid Av.	Residential	68.4	68.4	0.0	Yes	No
20	Chino Hills Pkwy.	w/o SR-71	Residential	76.7	76.7	0.0	Yes	No
21	Chino Hills Pkwy.	e/o SR-71	Commercial	76.1	76.2	0.1	No	No
22	Chino Hills Pkwy.	e/o Ramona Av.	Commercial	75.9	76.0	0.1	No	No
23	Chino Hills Pkwy.	e/o Monte Vista Av.	Industrial	73.7	73.9	0.2	No	No
24	El Prado Rd.	e/o Central Av.	Industrial/Urban Rsrv.	76.7	77.0	0.3	Yes	No
25	Kimball Av.	e/o El Prado Rd.	Industrial/Urban Rsrv.	76.6	77.0	0.4	Yes	No
26	Kimball Av.	e/o Mountain Av.	Industrial/Urban Rsrv.	76.4	76.8	0.4	Yes	No
27	Kimball Av.	e/o San Antonio Av.	Industrial	76.5	76.8	0.3	No	No
28	Kimball Av.	e/o Fern Av.	Industrial	76.9	77.2	0.3	No	No
29	Kimball Av.	e/o Euclid Av.	Commercial/Public	76.2	77.3	1.1	No	No
30	Kimball Av.	w/o Rincon Meadows Av.	Residential	76.3	76.4	0.1	Yes	No
31	Kimball Av.	e/o Rincon Meadows Av.	Residential	76.2	76.3	0.1	Yes	No
32	Kimball Av.	e/o Mill Creek Av.	Residential	76.2	76.3	0.1	Yes	No
33	Kimball Av.	e/o Main St.	Residential	74.8	74.9	0.1	Yes	No
34	Kimball Av.	e/o Flight Av.	Residential	74.1	74.2	0.1	Yes	No
35	Kimball Av.	e/o Meadow Valley Av.	Residential	73.7	73.8	0.1	Yes	No
36	Pine Av.	e/o Euclid Av.	Urban Reserve (Res.)	75.0	75.1	0.1	Yes	No

[1] Sources: City of Chino General Plan, Figure LU-2, The Ontario Plan Land Use Plan, Exhibit LU-01, and the City of Eastvale General Plan Land Use Map.
[2] The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.
[3] Significance Criteria (Section 4).

TABLE 7-20: OPENING YEAR 2020 PROJECT TRAFFIC NOISE CONTRIBUTIONS

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold Exceeded?[3]
				No Project	With Project	Project Addition		
1	Central Av.	n/o Chino Hills Pkwy.	Urban Reserve (Prison)	75.5	75.5	0.0	Yes	No
2	Central Av.	s/o Chino Hills Pkwy.	Office Commercial	75.4	75.7	0.3	No	No
3	Central Av.	s/o El Prado Rd.	Office Commercial	76.3	76.5	0.2	No	No
4	Euclid Av.	n/o SR-60	Residential	78.5	78.5	0.0	Yes	No
5	Euclid Av.	s/o SR-60	Commercial	79.6	80.1	0.5	No	No
6	Euclid Av.	s/o Walnut St.	Residential	79.2	79.8	0.6	Yes	No
7	Euclid Av.	s/o Riverside Dr.	Residential	80.9	81.5	0.6	Yes	No
8	Euclid Av.	s/o Chino Av.	Residential	81.2	81.7	0.5	Yes	No
9	Euclid Av.	s/o Schaefer Av.	Residential	81.1	81.7	0.6	Yes	No
10	Euclid Av.	s/o Edison Av.	Mixed-Use (Res.)	81.0	81.5	0.5	Yes	No
11	Euclid Av.	s/o Eucalyptus Av.	Residential	81.2	81.8	0.6	Yes	No
12	Euclid Av.	s/o Merrill Av.	Urban Reserve (Prison)	80.5	81.1	0.6	Yes	No
13	Euclid Av.	s/o Kimball Av.	Industrial (Res.)	79.4	79.7	0.3	Yes	No
14	Euclid Av.	s/o Bickmore Av.	Commercial (Agr.)	79.0	79.5	0.5	No	No
15	Euclid Av.	s/o Pine Av.	Urban Reserve	81.1	81.3	0.2	Yes	No
16	Flight Av.	n/o Kimball Av.	Industrial	72.2	72.6	0.4	No	No
17	Hellman Av.	s/o Kimball Av.	Residential	72.4	72.4	0.0	Yes	No
18	Edison Av.	w/o Euclid Av.	Business Park (Church)	73.6	73.7	0.1	Yes	No
19	Eucalyptus Av.	w/o Euclid Av.	Residential	68.4	68.5	0.1	Yes	No
20	Chino Hills Pkwy.	w/o SR-71	Residential	76.8	76.8	0.0	Yes	No
21	Chino Hills Pkwy.	e/o SR-71	Commercial	76.2	76.4	0.2	No	No
22	Chino Hills Pkwy.	e/o Ramona Av.	Commercial	76.0	76.2	0.2	No	No
23	Chino Hills Pkwy.	e/o Monte Vista Av.	Industrial	74.4	74.7	0.3	No	No
24	El Prado Rd.	e/o Central Av.	Industrial/Urban Rsrv.	76.8	77.3	0.5	Yes	No
25	Kimball Av.	e/o El Prado Rd.	Industrial/Urban Rsrv.	76.7	77.3	0.6	Yes	No
26	Kimball Av.	e/o Mountain Av.	Industrial/Urban Rsrv.	76.5	77.0	0.5	Yes	No
27	Kimball Av.	e/o San Antonio Av.	Industrial	76.5	77.1	0.6	No	No
28	Kimball Av.	e/o Fern Av.	Industrial	76.9	77.4	0.5	No	No
29	Kimball Av.	e/o Euclid Av.	Commercial/Public	76.2	77.9	1.7	No	No
30	Kimball Av.	w/o Rincon Meadows Av.	Residential	76.4	76.5	0.1	Yes	No
31	Kimball Av.	e/o Rincon Meadows Av.	Residential	76.2	76.4	0.2	Yes	No
32	Kimball Av.	e/o Mill Creek Av.	Residential	76.2	76.4	0.2	Yes	No
33	Kimball Av.	e/o Main St.	Residential	74.8	75.0	0.2	Yes	No
34	Kimball Av.	e/o Flight Av.	Residential	74.2	74.2	0.0	Yes	No
35	Kimball Av.	e/o Meadow Valley Av.	Residential	73.8	73.8	0.0	Yes	No
36	Pine Av.	e/o Euclid Av.	Urban Reserve (Res.)	75.1	75.2	0.1	Yes	No

[1] Sources: City of Chino General Plan, Figure LU-2, The Ontario Plan Land Use Plan, Exhibit LU-01, and the City of Eastvale General Plan Land Use Map.
[2] The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.
[3] Significance Criteria (Section 4).

7.6 HORIZON YEAR 2040 WITHOUT LIMONITE EXT. PROJECT TRAFFIC NOISE LEVELS

Table 7-11 presents the Horizon Year 2040 without Limonite Avenue Extension without Project conditions CNEL noise levels which are expected to range from 64.8 to 82.2 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-12 shows the unmitigated Horizon Year 2040 without Limonite Avenue Extension with Project conditions will range from 66.5 to 82.6 dBA CNEL. As shown on Table 7-21, the Project will generate noise level increases of up to 1.9 dBA CNEL on the study area roadway segments. Based on the significance criteria in Section 4, land uses adjacent to the following roadway segments would experience *less than significant* noise level increases due to unmitigated Project-related traffic under Horizon Year 2040 without Limonite Extension with Project conditions.

7.7 HORIZON YEAR 2040 WITH LIMONITE EXT. PROJECT TRAFFIC NOISE LEVELS

Table 7-11 presents the Horizon Year 2040 with Limonite Avenue Extension without Project conditions CNEL noise levels which are expected to range from 67.6 to 82.2 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-12 shows the unmitigated Horizon Year 2040 with Limonite Avenue Extension with Project conditions will range from 67.7 to 82.6 dBA CNEL. As shown on Table 7-22, the Project will generate noise level increases of up to 1.7 dBA CNEL on the study area roadway segments. Based on the significance criteria in Section 4, land uses adjacent to the following roadway segments would experience *less than significant* noise level increases due to unmitigated Project-related traffic under Horizon Year 2040 with Limonite Extension with Project conditions.

TABLE 7-21: HORIZON YEAR 2040 WITHOUT LIMONITE EXT. PROJECT TRAFFIC NOISE INCREASES

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold Exceeded?[3]
				No Project	With Project	Project Addition		
1	Central Av.	n/o Chino Hills Pkwy.	Urban Reserve (Prison)	76.2	76.2	0.0	Yes	No
2	Central Av.	s/o Chino Hills Pkwy.	Office Commercial	75.3	75.5	0.2	No	No
3	Central Av.	s/o El Prado Rd.	Office Commercial	75.6	75.9	0.3	No	No
4	Euclid Av.	n/o SR-60	Residential	79.9	79.9	0.0	Yes	No
5	Euclid Av.	s/o SR-60	Commercial	79.7	80.2	0.5	No	No
6	Euclid Av.	s/o Walnut St.	Residential	79.6	80.1	0.5	Yes	No
7	Euclid Av.	s/o Riverside Dr.	Residential	81.9	82.4	0.5	Yes	No
8	Euclid Av.	s/o Chino Av.	Residential	82.2	82.6	0.4	Yes	No
9	Euclid Av.	s/o Schaefer Av.	Residential	82.2	82.6	0.4	Yes	No
10	Euclid Av.	s/o Edison Av.	Mixed-Use (Res.)	81.2	81.7	0.5	Yes	No
11	Euclid Av.	s/o Eucalyptus Av.	Residential	81.4	81.9	0.5	Yes	No
12	Euclid Av.	s/o Merrill Av.	Urban Reserve (Prison)	81.6	82.1	0.5	Yes	No
13	Euclid Av.	s/o Kimball Av.	Industrial (Res.)	80.2	80.5	0.3	Yes	No
14	Euclid Av.	s/o Bickmore Av.	Commercial (Agr.)	80.0	80.4	0.4	No	No
15	Euclid Av.	s/o Pine Av.	Urban Reserve	82.1	82.3	0.2	Yes	No
16	Flight Av.	n/o Kimball Av.	Industrial	64.8	66.5	1.7	No	No
17	Hellman Av.	s/o Kimball Av.	Residential	73.6	73.7	0.1	Yes	No
18	Edison Av.	w/o Euclid Av.	Business Park (Church)	75.1	75.1	0.0	Yes	No
19	Eucalyptus Av.	w/o Euclid Av.	Residential	67.6	67.7	0.1	Yes	No
20	Chino Hills Pkwy.	w/o SR-71	Residential	76.6	76.6	0.0	Yes	No
21	Chino Hills Pkwy.	e/o SR-71	Commercial	75.7	75.9	0.2	No	No
22	Chino Hills Pkwy.	e/o Ramona Av.	Commercial	75.7	75.9	0.2	No	No
23	Chino Hills Pkwy.	e/o Monte Vista Av.	Industrial	74.2	74.5	0.3	No	No
24	El Prado Rd.	e/o Central Av.	Industrial/Urban Rsrv.	74.2	75.0	0.8	Yes	No
25	Kimball Av.	e/o El Prado Rd.	Industrial/Urban Rsrv.	75.7	76.4	0.7	Yes	No
26	Kimball Av.	e/o Mountain Av.	Industrial/Urban Rsrv.	75.3	76.0	0.7	Yes	No
27	Kimball Av.	e/o San Antonio Av.	Industrial	75.2	76.0	0.8	No	No
28	Kimball Av.	e/o Fern Av.	Industrial	75.4	76.1	0.7	No	No
29	Kimball Av.	e/o Euclid Av.	Commercial/Public	75.5	77.4	1.9	No	No
30	Kimball Av.	w/o Rincon Meadows Av.	Residential	75.7	75.9	0.2	Yes	No
31	Kimball Av.	e/o Rincon Meadows Av.	Residential	76.3	76.5	0.2	Yes	No
32	Kimball Av.	e/o Mill Creek Av.	Residential	76.6	76.8	0.2	Yes	No
33	Kimball Av.	e/o Main St.	Residential	78.2	78.3	0.1	Yes	No
34	Kimball Av.	e/o Flight Av.	Residential	73.8	73.9	0.1	Yes	No
35	Kimball Av.	e/o Meadow Valley Av.	Residential	73.7	73.8	0.1	Yes	No
36	Pine Av.	e/o Euclid Av.	Urban Reserve (Res.)	76.6	76.7	0.1	Yes	No

[1] Sources: City of Chino General Plan, Figure LU-2, The Ontario Plan Land Use Plan, Exhibit LU-01, and the City of Eastvale General Plan Land Use Map.
[2] The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.
[3] Significance Criteria (Section 4).

TABLE 7-21: HORIZON YEAR 2040 WITH LIMONITE EXT. PROJECT TRAFFIC NOISE INCREASES

ID	Road	Segment	Adjacent Planned (Existing) Land Use[1]	CNEL at Adjacent Land Use (dBA)[2]			Noise-Sensitive Land Use?	Threshold Exceeded?[3]
				No Project	With Project	Project Addition		
1	Central Av.	n/o Chino Hills Pkwy.	Urban Reserve (Prison)	76.2	76.2	0.0	Yes	No
2	Central Av.	s/o Chino Hills Pkwy.	Office Commercial	75.3	75.5	0.2	No	No
3	Central Av.	s/o El Prado Rd.	Office Commercial	75.6	75.9	0.3	No	No
4	Euclid Av.	n/o SR-60	Residential	79.9	79.9	0.0	Yes	No
5	Euclid Av.	s/o SR-60	Commercial	79.7	80.2	0.5	No	No
6	Euclid Av.	s/o Walnut St.	Residential	79.6	80.0	0.4	Yes	No
7	Euclid Av.	s/o Riverside Dr.	Residential	81.9	82.3	0.4	Yes	No
8	Euclid Av.	s/o Chino Av.	Residential	82.2	82.6	0.4	Yes	No
9	Euclid Av.	s/o Schaefer Av.	Residential	82.2	82.6	0.4	Yes	No
10	Euclid Av.	s/o Edison Av.	Mixed-Use (Res.)	81.2	81.7	0.5	Yes	No
11	Euclid Av.	s/o Eucalyptus Av.	Residential	81.4	81.9	0.5	Yes	No
12	Euclid Av.	s/o Merrill Av.	Urban Reserve (Prison)	81.6	82.1	0.5	Yes	No
13	Euclid Av.	s/o Kimball Av.	Industrial (Res.)	80.2	80.4	0.2	Yes	No
14	Euclid Av.	s/o Bickmore Av.	Commercial (Agr.)	80.0	80.3	0.3	No	No
15	Euclid Av.	s/o Pine Av.	Urban Reserve	82.1	82.2	0.1	Yes	No
16	Flight Av.	n/o Kimball Av.	Industrial	70.6	71.1	0.5	No	No
17	Hellman Av.	s/o Kimball Av.	Residential	74.9	74.9	0.0	Yes	No
18	Edison Av.	w/o Euclid Av.	Business Park (Church)	75.1	75.1	0.0	Yes	No
19	Eucalyptus Av.	w/o Euclid Av.	Residential	67.6	67.7	0.1	Yes	No
20	Chino Hills Pkwy.	w/o SR-71	Residential	76.6	76.6	0.0	Yes	No
21	Chino Hills Pkwy.	e/o SR-71	Commercial	75.7	75.9	0.2	No	No
22	Chino Hills Pkwy.	e/o Ramona Av.	Commercial	75.7	75.9	0.2	No	No
23	Chino Hills Pkwy.	e/o Monte Vista Av.	Industrial	74.2	74.5	0.3	No	No
24	El Prado Rd.	e/o Central Av.	Industrial/Urban Rsrv.	74.2	75.0	0.8	Yes	No
25	Kimball Av.	e/o El Prado Rd.	Industrial/Urban Rsrv.	75.7	76.4	0.7	Yes	No
26	Kimball Av.	e/o Mountain Av.	Industrial/Urban Rsrv.	75.3	76.0	0.7	Yes	No
27	Kimball Av.	e/o San Antonio Av.	Industrial	75.2	76.0	0.8	No	No
28	Kimball Av.	e/o Fern Av.	Industrial	75.4	76.1	0.7	No	No
29	Kimball Av.	e/o Euclid Av.	Commercial/Public	75.5	77.2	1.7	No	No
30	Kimball Av.	w/o Rincon Meadows Av.	Residential	75.7	76.1	0.4	Yes	No
31	Kimball Av.	e/o Rincon Meadows Av.	Residential	76.5	76.8	0.3	Yes	No
32	Kimball Av.	e/o Mill Creek Av.	Residential	77.3	77.6	0.3	Yes	No
33	Kimball Av.	e/o Main St.	Residential	78.7	78.9	0.2	Yes	No
34	Kimball Av.	e/o Flight Av.	Residential	76.0	76.3	0.3	Yes	No
35	Kimball Av.	e/o Meadow Valley Av.	Residential	76.0	76.2	0.2	Yes	No
36	Pine Av.	e/o Euclid Av.	Urban Reserve (Res.)	76.6	76.7	0.1	Yes	No
37	Limonite Av.	e/o Hellman Av.	Industrial (Agr.)	72.9	73.1	0.2	Yes	No
38	Limonite Av.	e/o Archibald Av.	Industrial (Agr.)	75.1	75.2	0.1	Yes	No
39	Limonite Av.	e/o Harrison Av.	Residential	75.4	75.5	0.1	Yes	No
40	Limonite Av.	e/o Sumner Av.	Residential	75.3	75.5	0.2	Yes	No
41	Limonite Av.	e/o Scholar Wy.	Residential	75.3	75.5	0.2	Yes	No
42	Limonite Av.	e/o Hamner Av.	Commercial	75.7	75.8	0.1	Yes	No

[1] Sources: City of Chino General Plan, Figure LU-2, The Ontario Plan Land Use Plan, Exhibit LU-01, and the City of Eastvale General Plan Land Use Map.
[2] The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.
[3] Significance Criteria (Section 4).

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8 SENSITIVE RECEIVER LOCATIONS

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

The closest sensitive receiver is represented by location R1 where residential-designated land use is currently under construction at approximately 10 feet east of the Project site boundaries. 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 10 feet east of the Project site, R1 represents future residential homes currently under construction on Rincon Meadows Avenue. A 24-hour noise measurement was taken near this location, L3, to describe the existing ambient noise environment.

R2: Location R2 represents the existing residential homes located east of the Project site at roughly 1,407 feet on Spring Hill Street. A 24-hour noise measurement was taken near this location, L2, to describe the existing ambient noise environment.

R3: Location R3 represents the existing residential homes approximately 45 feet southeast of the Project site on Moonflower Avenue. A 24-hour noise measurement was taken near this location, L3, to describe the existing ambient noise environment.

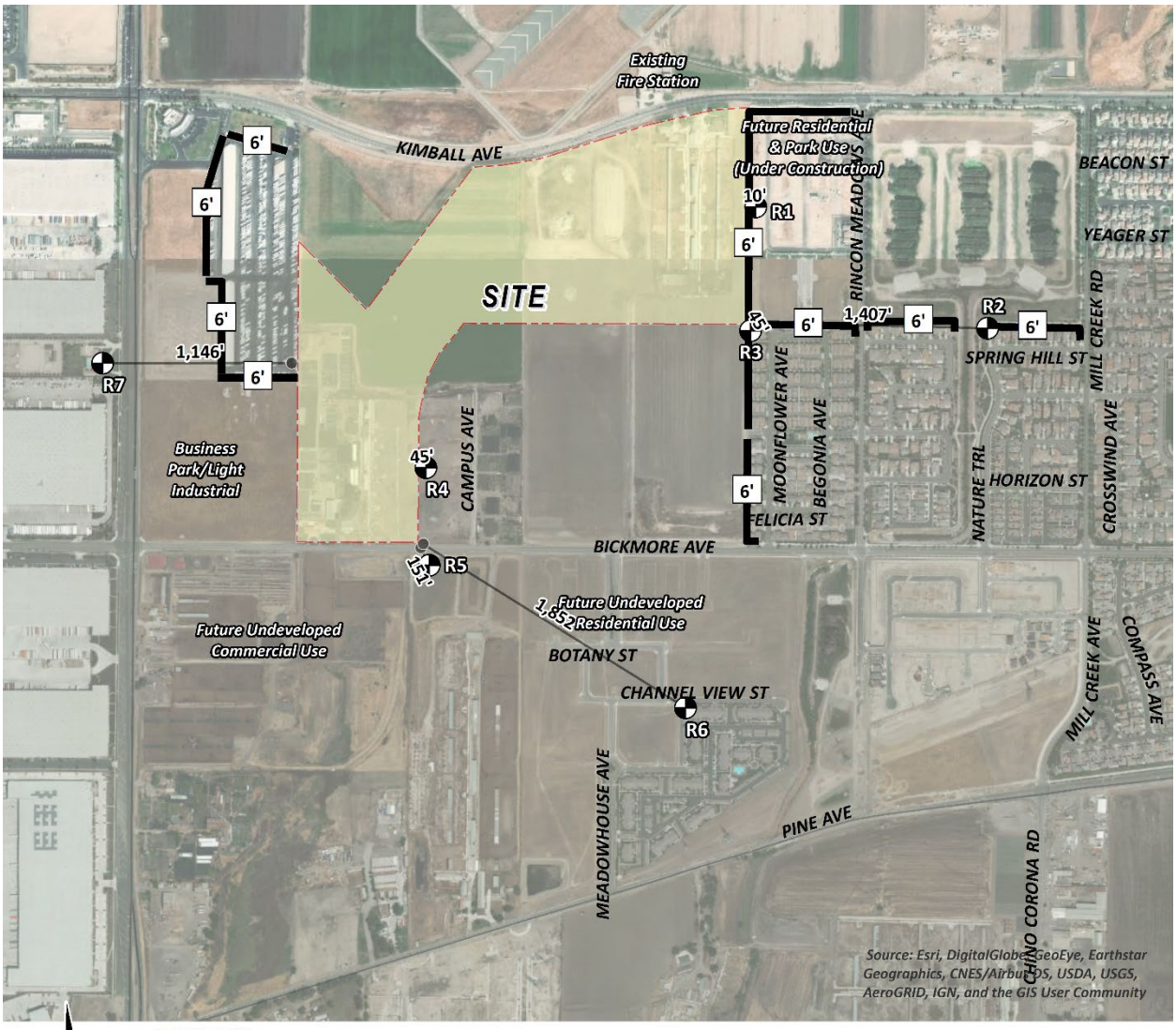
R4: Location R4 represents the future residential-designated land use, currently unoccupied, east of the Project site, across the future location of Mayhew Avenue.

R5: Located approximately 151 feet south of the Project site, R5 represents future residential-designated land use, currently unoccupied, on Bickmore Avenue. A 24-hour noise measurement was taken near this location, L6, to describe the existing ambient noise environment.

R6: Location R6 represents the existing residential homes located south of the Project site at roughly 1,852 feet on Channel View Street. A 24-hour noise measurement was taken near this location, L5, to describe the existing ambient noise environment.

R7: Location R7 represents the existing residential home located at approximately 1,146 feet west of the Project site on Euclid Avenue. A 24-hour noise measurement was taken near this location, L7, to describe the existing ambient noise environment.

EXHIBIT 8-A: SENSITIVE RECEIVER LOCATIONS



9 OPERATIONAL NOISE IMPACTS

This section analyzes the potential stationary-source operational noise impacts at the nearby receiver locations, identified in Section 8, resulting from operation of the proposed Altitude Business Centre Project. Exhibit 9-A identifies the representative receiver locations and noise source locations used to assess the operational noise levels.

9.1 OPERATIONAL NOISE SOURCES

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

9.2 REFERENCE NOISE LEVELS

To estimate the Project operational noise impacts, reference noise level measurements were collected from similar types of activities to represent the noise levels expected with the development of the proposed Project. This section provides a detailed description of the reference noise level measurements shown on Table 9-1 used to estimate the Project operational noise impacts. It is important to note that the following projected noise levels assume the worst-case noise environment with the roof-top air conditioning units, idling trucks, delivery truck activities, backup alarms, as well as loading and unloading of dry goods, parking lot vehicle movements, and self-storage activity all operating simultaneously. These noise level impacts will likely vary throughout the day.

9.2.1 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 at the Santee Walmart on July 27, 2015. Located at 170 Town Center Parkway in the City of Santee, the noise level measurements describe a single mechanical roof-top air conditioning unit on the roof of an existing Walmart store. The reference noise level represents a Lennox SCA120 series 10-ton model packaged air conditioning unit. Using the uniform reference distance of 50 feet, the reference air conditioning unit 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.

9.2.2 TRUCK UNLOADING/DOCKING ACTIVITY

A short-term reference noise level measurement was collected on Wednesday, January 7, 2015, by Urban Crossroads, Inc. at the Motivational Fulfillment & Logistics Services distribution facility located at 6810 Bickmore Avenue in the City of Chino. The noise level measurement represents the typical weekday dry goods logistics warehouse operation in a single building, of roughly 285,000 square feet, with a loading dock area on the western side of the building façade. 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.

9.2.3 PARKING LOT VEHICLE MOVEMENTS

To determine the noise levels associated with parking lot vehicle movements, Urban Crossroads collected reference noise level measurements over a 24-hour period on May 17, 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).

9.2.4 STORAGE (ROLL-UP DOOR) ACTIVITY

To describe the storage (roll-up door) activity at the self-storage use within the Project site, a reference noise level measurement was collected at the Storage Solutions Self Storage in the City of Irvine on October 31st, 2008. The reference noise level for a roll-up door is 52.6 dBA L_{50} at a uniform reference distance of 50 feet. It is expected that roll-up doors would be in the first floor of the Project buildings. Roll-up door activities are expected to occur for 60 minutes during daytime peak hour conditions.

TABLE 9-1: REFERENCE NOISE LEVEL MEASUREMENTS

Noise Source	Duration (h:mm:ss)	Distance From Source (Feet)	Noise Source Height (Feet)	Hourly Activity (Minutes)[5]	Noise Level (dBA L_{50})	
					@ Ref. Distance	@ 50 Feet
Roof-Top Air Conditioning Units[1]	96:00:00	5'	25'	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	38.5
Storage (Roll-Up Doors) Activity[4]	00:00:13	10'	4'	60	66.6	52.6

[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] As measured by Urban Crossroads, Inc. on 10/31/2008 at the Storage Solutions Self Storage in the City of Irvine.
[5] Duration (minutes within the hour) of noise activity during peak hourly conditions.

9.3 PROJECT OPERATIONAL NOISE LEVELS

Using the reference noise levels to represent the proposed Project operations that include roof-top air conditioning units, idling trucks, delivery truck activities, backup alarms, as well as loading and unloading of dry goods, parking lot vehicle movements, and self-storage activity, Urban Crossroads, Inc. calculated the operational source noise levels that are expected to be generated at the Project site and the Project-related noise level increases that would be experienced at each of the sensitive receiver locations. The operational noise level calculations, shown on Table 9-2, account for the distance attenuation provided due to geometric spreading when sound from a localized stationary source (i.e., a point source) propagates uniformly outward in a spherical pattern. Hard site conditions are used in the operational noise analysis which result in noise levels that attenuate (or decrease) at a rate of 6 dBA for each doubling of distance from a point source. The basic noise attenuation equation shown below is used to calculate the distance attenuation based on a reference noise level (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 shows the individual operational noise levels of each noise source at each of the nearby sensitive receiver locations. As indicated on Table 9-2, the Project-only operational noise levels will range from 25.5 to 45.5 dBA L_{50}, 28.4 to 48.2 dBA L_{25}, 32.9 to 52.4 dBA L_8, 36.8 to 56.1 dBA L_2, and 41.8 to 61.1 dBA L_{max} at the sensitive receiver locations.

EXHIBIT 9-A: OPERATIONAL NOISE SOURCE LOCATIONS

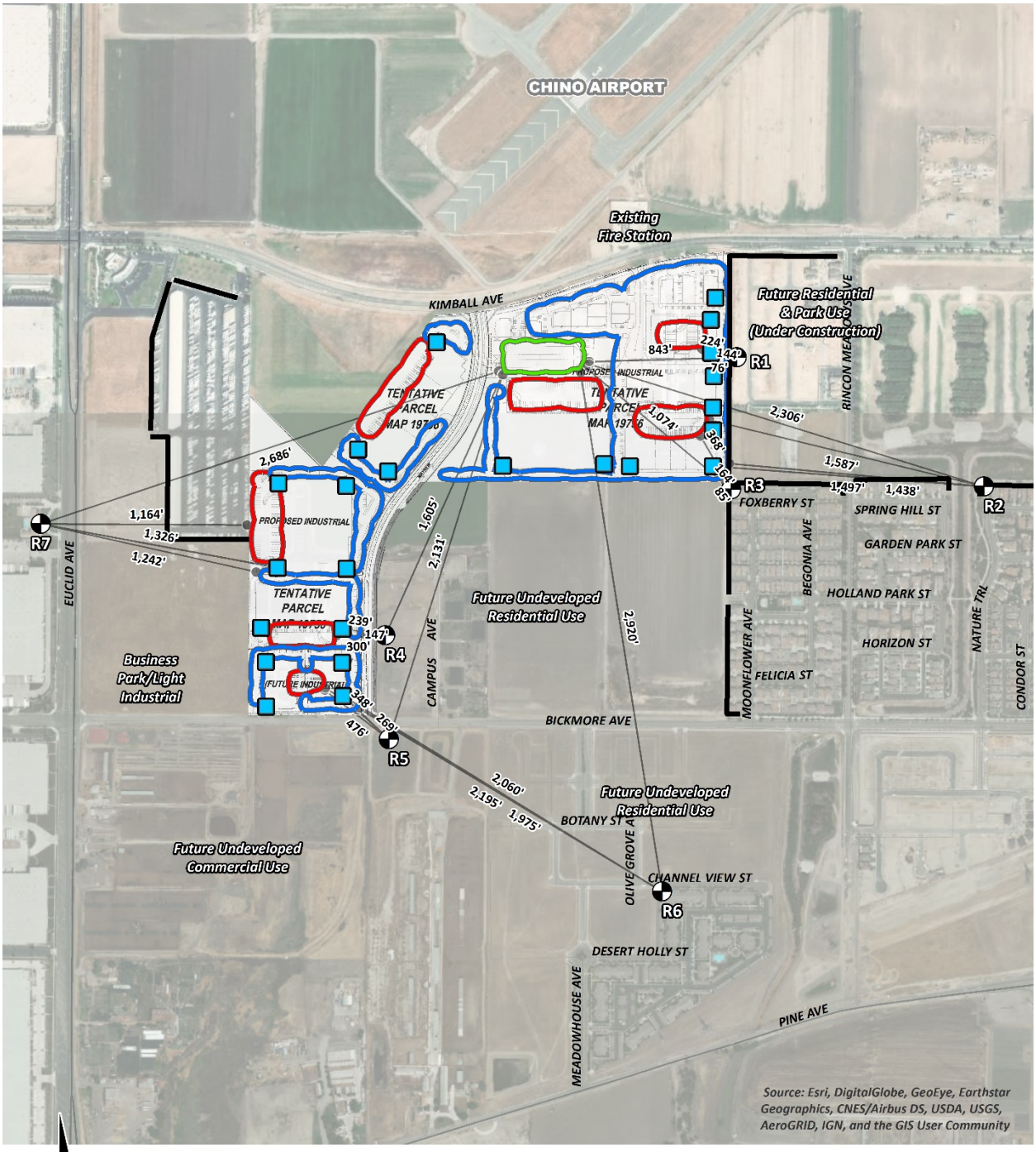


TABLE 9-2: UNMITIGATED PROJECT-ONLY OPERATIONAL NOISE LEVELS

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} (Anytime)
R1	Roof-Top Air Conditioning Units	36.9	38.6	39.9	40.2	40.7
	Truck Unloading/Docking Activity	41.3	44.3	48.9	52.7	57.1
	Parking Lot Vehicle Movements	30.2	31.2	36.2	42.2	53.1
	Storage (Roll-Up Doors) Activity	22.6	26.0	29.0	32.0	33.4
	Combined Noise Level:	42.9	45.5	49.7	53.3	58.6
R2	Roof-Top Air Conditioning Units	7.5	9.2	10.5	10.8	11.3
	Truck Unloading/Docking Activity	25.1	28.1	32.7	36.5	40.9
	Parking Lot Vehicle Movements	11.4	12.4	17.4	23.4	34.3
	Storage (Roll-Up Doors) Activity	9.1	12.5	15.5	18.5	19.9
	Combined Noise Level:	25.5	28.4	32.9	36.8	41.8
R3	Roof-Top Air Conditioning Units	36.9	38.6	39.9	40.2	40.7
	Truck Unloading/Docking Activity	37.0	40.0	44.6	48.4	52.8
	Parking Lot Vehicle Movements	29.5	30.5	35.5	41.5	52.4
	Storage (Roll-Up Doors) Activity	20.5	23.9	26.9	29.9	31.3
	Combined Noise Level:	40.4	42.7	46.3	49.8	55.8
R4	Roof-Top Air Conditioning Units	38.9	40.6	41.9	42.2	42.7
	Truck Unloading/Docking Activity	44.2	47.2	51.8	55.6	60.0
	Parking Lot Vehicle Movements	31.5	32.5	37.5	43.5	54.4
	Storage (Roll-Up Doors) Activity	22.5	25.9	28.9	31.9	33.3
	Combined Noise Level:	45.5	48.2	52.4	56.1	61.1
R5	Roof-Top Air Conditioning Units	35.6	37.3	38.6	38.9	39.4
	Truck Unloading/Docking Activity	40.2	43.2	47.8	51.6	56.0
	Parking Lot Vehicle Movements	27.6	28.6	33.6	39.6	50.5
	Storage (Roll-Up Doors) Activity	20.0	23.4	26.4	29.4	30.8
	Combined Noise Level:	41.7	44.3	48.5	52.1	57.2
R6	Roof-Top Air Conditioning Units	20.2	21.9	23.2	23.5	24.0
	Truck Unloading/Docking Activity	26.9	29.9	34.5	38.3	42.7
	Parking Lot Vehicle Movements	14.6	15.6	20.6	26.6	37.5
	Storage (Roll-Up Doors) Activity	17.3	20.7	23.7	26.7	28.1
	Combined Noise Level:	28.3	31.1	35.3	39.0	44.0
R7	Roof-Top Air Conditioning Units	24.0	25.7	27.0	27.3	27.8
	Truck Unloading/Docking Activity	32.4	35.4	40.0	43.8	48.2
	Parking Lot Vehicle Movements	17.6	18.6	23.6	29.6	40.5
	Storage (Roll-Up Doors) Activity	18.0	21.4	24.4	27.4	28.8
	Combined Noise Level:	33.2	36.1	40.4	44.1	49.0

[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 9.2.

Table 9-3 presents a summary of the combined total Project-only operational noise level projections at the nearby sensitive receiver locations for a comparison with local jurisdiction exterior noise level standards. The Project operational noise levels at the nearby sensitive receiver locations are shown to range from 25.5 to 45.5 dBA L_{50}, 28.4 to 48.2 dBA L_{25}, 32.9 to 52.4 dBA L_8, 36.8 to 56.1 dBA L_2, and 41.8 to 61.1 dBA L_{max}. Based on the results of this analysis, the operational noise levels associated with the Altitude Business Centre will satisfy the operational exterior daytime and nighttime noise level standards at all nearby sensitive receiver locations. The operational noise level calculations are included in Appendix 9.1.

TABLE 9-3: UNMITIGATED OPERATIONAL NOISE LEVEL COMPLIANCE

Receiver Location[1]	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} (Anytime)	Daytime	Nighttime
Residential Standards	**55**	**60**	**65**	**70**	**75**	**Daytime**	
	50	**55**	**60**	**65**	**70**	**Nighttime**	
R1	42.9	45.5	49.7	53.3	58.6	No	No
R2	25.5	28.4	32.9	36.8	41.8	No	No
R3	40.4	42.7	46.3	49.8	55.8	No	No
R4	45.5	48.2	52.4	56.1	61.1	No	No
R5	41.7	44.3	48.5	52.1	57.2	No	No
R6	28.3	31.1	35.3	39.0	44.0	No	No
R7	33.2	36.1	40.4	44.1	49.0	No	No

[1] See Exhibit 9-A for the receiver and noise source locations.
[2] Estimated 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)?
"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

9.4 PROJECT OPERATIONAL NOISE LEVEL CONTRIBUTIONS

To describe the Project operational noise level contributions, the Project operational noise levels are combined with the existing ambient noise levels measurements for the nearby receiver locations potentially impacted by Project operational noise sources. Since the units used to measure noise, decibels (dB), are logarithmic units, the Project-operational and existing ambient noise levels cannot be combined using standard arithmetic equations. (6) Instead, they must be logarithmically added using the following base equation:

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

Where "SPL1," "SPL2," etc. are equal to the sound pressure levels being combined, or in this case, the Project-operational and existing ambient noise levels. The difference between the combined Project and ambient noise levels describe the Project noise level contributions to the existing ambient noise environment. Noise levels that would be experienced at receiver locations when

Project-source noise is added to the daytime and nighttime ambient conditions are presented on Tables 9-4 and 9-5, respectively.

As indicated on Tables 9-4 and 9-5, the Project will generate a daytime operational noise level increase of up to 1.4 dBA L_{50} and a nighttime operational noise level increase of up to 1.8 dBA L_{50} at the nearby receiver locations. Since the Project-related operational noise level contributions will satisfy the significance criteria discussed in Section 4, the increases at the sensitive receiver locations will be *less than significant*. On this basis, Project operational stationary-source noise would not result in a substantial temporary/periodic, or permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project, and impacts in these regards will be *less than significant*.

TABLE 9-4: PROJECT DAYTIME NOISE LEVEL CONTRIBUTIONS

Receiver Location[1]	Total Project Operational Noise Level (dBA L_{50})[2]	Measurement Location[3]	Reference Ambient Noise Levels (dBA L_{50})[4]	Combined Project and Ambient (dBA L_{50})[5]	Project Contribution (dBA L_{50})[6]	Threshold Exceeded?[7]
R1	42.9	L3	47.1	48.5	1.4	No
R2	25.5	L2	49.4	49.4	0.0	No
R3	40.4	L3	47.1	47.9	0.8	No
R4	45.5	L6	52.0	52.9	0.9	No
R5	41.7	L6	52.0	52.4	0.4	No
R6	28.3	L5	47.6	47.7	0.1	No
R7	33.2	L7	58.5	58.5	0.0	No

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

TABLE 9-5: PROJECT NIGHTTIME NOISE LEVEL CONTRIBUTIONS

Receiver Location[1]	Total Project Operational Noise Level (dBA L_{50})[2]	Measurement Location[3]	Reference Ambient Noise Levels (dBA L_{50})[4]	Combined Project and Ambient (dBA L_{50})[5]	Project Contribution (dBA L_{50})[6]	Threshold Exceeded?[7]
R1	42.9	L3	45.9	47.7	1.8	No
R2	25.5	L2	45.3	45.3	0.0	No
R3	40.4	L3	45.9	47.0	1.1	No
R4	45.5	L6	49.1	50.7	1.6	No
R5	41.7	L6	49.1	49.8	0.7	No
R6	28.3	L5	44.7	44.8	0.1	No
R7	33.2	L7	56.0	56.0	0.0	No

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

9.5 OPERATIONAL VIBRATION IMPACTS

To assess the potential vibration impacts from truck haul trips associated with operational activities the City of Chino threshold for vibration of 0.05 in/sec RMS is used, as previously shown on Table 3-2. Truck vibration levels are dependent on vehicle characteristics, load, speed, and pavement conditions. Typical vibration levels for the Altitude Business Centre heavy truck activity at normal traffic speeds will approach 0.004 in/sec PPV and 0.003 in/sec RMS at 25 feet based on the 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 satisfy both the City of Chino vibration thresholds, and therefore, will be *less than significant*.

10 CONSTRUCTION IMPACTS

This section analyzes potential impacts resulting from the short-term daytime and nighttime construction activities associated with the development of the Project. Exhibit 10-A shows the construction noise source locations in relation to the nearby sensitive receiver locations (R1 to R7) previously described in Section 8. However, since Project construction will include potential off-site roadway and utility improvements which extend beyond the Project site boundaries, as shown on Exhibit 10-A, this Section identifies three additional sensitive receiver locations (R8 to R10) for analysis adjacent to the off-site improvement areas of activity. Further, to present all Project-related construction noise and vibration levels, this Section analyzes all construction activity noise and vibration levels at both the previously identified receiver locations (R1 to R7 closest to the site), and the additional receiver locations identified herein (R8 to R10) adjacent to the potential off-site improvements.

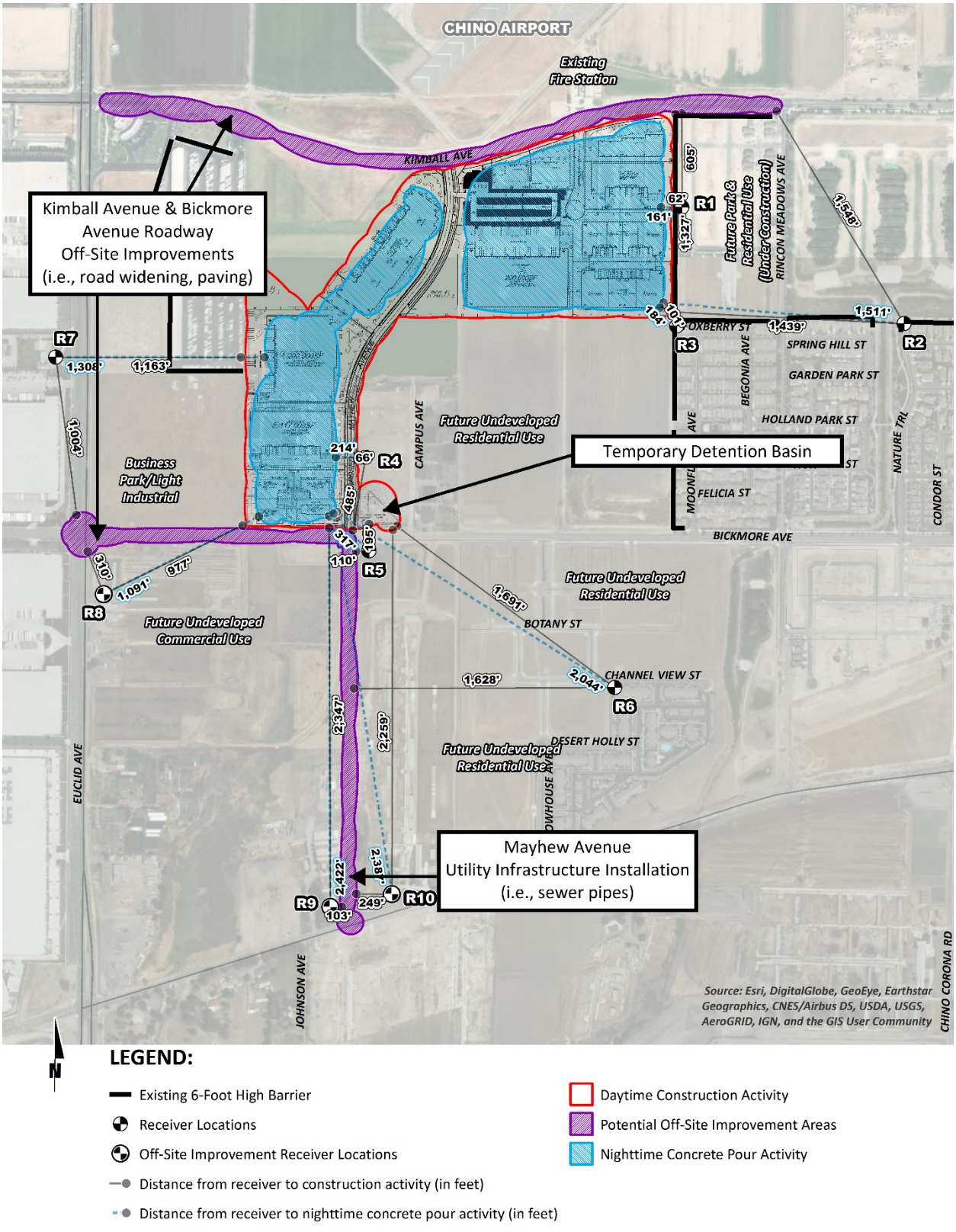
10.1 CONSTRUCTION NOISE LEVELS

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:

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

This construction noise analysis was prepared using reference noise level measurements taken by Urban Crossroads, Inc. to describe the typical construction activity noise levels for each stage of Project construction. The construction reference noise level measurements represent a list of typical construction activity noise levels. Noise levels generated by heavy construction equipment can range from approximately 68 dBA to more than 80 dBA when measured at 50 feet. However, these noise levels diminish with distance from the construction site at a rate of 6 dBA per doubling of distance. For example, a noise level of 80 dBA measured at 50 feet from the noise source to the receiver would be reduced to 74 dBA at 100 feet from the source to the receiver, and would be further reduced to 68 dBA at 200 feet from the source to the receiver. The construction stages used in this analysis are consistent with the *Altitude Business Centre Air Quality Impact Analysis* prepared by Urban Crossroads, Inc. (27)

EXHIBIT 10-A: CONSTRUCTION NOISE SOURCE LOCATIONS



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

TABLE 10-1: CONSTRUCTION REFERENCE NOISE LEVELS

ID	Noise Source	Reference Distance From Source (Feet)	Reference Noise Levels @ Reference Distance (dBA L_{eq})	Reference Noise Levels @ 50 Feet (dBA L_{eq})[7]
1	Truck Pass-Bys & Dozer Activity[1]	30'	63.6	59.2
2	Dozer Activity[1]	30'	68.6	64.2
3	Construction Vehicle Maintenance Activities[2]	30'	71.9	67.5
4	Foundation Trenching[2]	30'	72.6	68.2
5	Rough Grading Activities[2]	30'	77.9	73.5
6	Framing[3]	30'	66.7	62.3
7	Water Truck Pass-By & Backup Alarm[4]	30'	76.3	71.9
8	Dozer Pass-By[4]	30'	84.0	79.6
9	Two Scrapers & Water Truck Pass-By[4]	30'	83.4	79.0
10	Two Scrapers Pass-By[4]	30'	83.7	79.3
11	Scraper, Water Truck, & Dozer Activity[4]	30'	79.7	75.3
12	Concrete Mixer Truck Movements[5]	50'	71.2	71.2
13	Concrete Paver Activities[5]	30'	70.0	65.6
14	Concrete Mixer Pour & Paving Activities[5]	30'	70.3	65.9
15	Concrete Mixer Backup Alarms & Air Brakes[5]	50'	71.6	71.6
16	Concrete Mixer Pour Activities[5]	50'	67.7	67.7
17	Forklift, Jackhammer, & Metal Truck Bed Loading	50'	67.9	67.9

[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 within an industrial construction site located in the City of Ontario.
[5] Reference noise level measurements were collected from a nighttime concrete pour at an industrial construction site, located at 27334 San Bernardino Avenue in the City of Redlands, between 1:00 a.m. to 2:00 a.m. on 7/1/15.
[6] As measured by Urban Crossroads, Inc. on 9/9/16 during the demolition of an existing paved parking lot at 41 Corporate Park in Irvine.
[7] Reference noise levels are calculated at 50 feet using a drop off rate of 6 dBA per doubling of distance (point source).

10.3 DAYTIME CONSTRUCTION NOISE ANALYSIS

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

TABLE 10-2: DEMOLITION EQUIPMENT NOISE LEVELS

Reference Construction Activity[1]	Reference Noise Level @ 50 Feet (dBA L_{eq})
Truck Pass-Bys & Dozer Activity	59.2
Dozer Activity	64.2
Dozer Pass-By	79.6
Forklift, Jackhammer, & Metal Truck Bed Activities	67.9
Highest Reference Noise Level at 50 Feet (dBA L_{eq}):	79.6

Receiver Location	Distance to Construction Activity (Feet)[2]	Distance Attenuation (dBA L_{eq})[3]	Calculated Noise Barrier Attenuation (dBA L_{eq})[4]	Construction Noise Level (dBA L_{eq})
R1	62'	-1.9	-5.2	72.5
R2	1,439'	-29.2	-4.6	45.8
R3	101'	-6.1	-5.3	68.2
R4	66'	-2.4	0.0	77.2
R5	195'	-11.8	0.0	67.7
R6	1,691'	-30.6	0.0	49.0
R7	1,163'	-27.3	0.0	52.2
R8	977'	-25.8	0.0	53.7
R9	2,347'	-33.4	0.0	46.1
R10	2,259'	-33.1	0.0	46.5

[1] Reference construction noise level measurements taken by Urban Crossroads, Inc.
[2] Distance from the nearest point of construction activity to the nearest receiver.
[3] Point (stationary) source drop off rate of 6.0 dBA per doubling of distance.
[4] Calculated barrier attenuation from existing barriers and intervening structures in the Project study area (Appendix 10.1).

TABLE 10-3: GRADING EQUIPMENT NOISE LEVELS

Reference Construction Activity[1]	Reference Noise Level @ 50 Feet (dBA L_{eq})
Truck Pass-Bys & Dozer Activity	59.2
Dozer Activity	64.2
Rough Grading Activities	73.5
Water Truck Pass-By & Backup Alarm	71.9
Dozer Pass-By	79.6
Two Scrapers & Water Truck Pass-By	79.0
Two Scrapers Pass-By	79.3
Highest Reference Noise Level at 50 Feet (dBA L_{eq}):	79.6

Receiver Location	Distance to Construction Activity (Feet)[2]	Distance Attenuation (dBA L_{eq})[3]	Calculated Noise Barrier Attenuation (dBA L_{eq})[4]	Construction Noise Level (dBA L_{eq})
R1	62'	-1.9	-5.2	72.5
R2	1,439'	-29.2	-4.6	45.8
R3	101'	-6.1	-5.3	68.2
R4	66'	-2.4	0.0	77.2
R5	195'	-11.8	0.0	67.7
R6	1,691'	-30.6	0.0	49.0
R7	1,163'	-27.3	-5.0	47.2
R8	977'	-25.8	0.0	53.7
R9	2,347'	-33.4	0.0	46.1
R10	2,259'	-33.1	-5.0	41.5

[1] Reference construction noise level measurements taken by Urban Crossroads, Inc.
[2] Distance from the nearest point of construction activity to the nearest receiver.
[3] Point (stationary) source drop off rate of 6.0 dBA per doubling of distance.
[4] Calculated barrier attenuation from existing barriers and intervening structures in the Project study area (Appendix 10.1).

TABLE 10-4: BUILDING CONSTRUCTION EQUIPMENT NOISE LEVELS

Reference Construction Activity[1]	Reference Noise Level @ 50 Feet (dBA L_{eq})
Construction Vehicle Maintenance Activities	67.5
Foundation Trenching	68.2
Highest Reference Noise Level at 50 Feet (dBA L_{eq}):	68.2

Receiver Location	Distance to Construction Activity (Feet)[2]	Distance Attenuation (dBA L_{eq})[3]	Calculated Noise Barrier Attenuation (dBA L_{eq})[4]	Construction Noise Level (dBA L_{eq})
R1	62'	-1.9	-5.2	61.1
R2	1,439'	-29.2	-4.6	34.4
R3	101'	-6.1	-5.3	56.8
R4	66'	-2.4	0.0	65.8
R5	195'	-11.8	0.0	56.3
R6	1,691'	-30.6	0.0	37.6
R7	1,163'	-27.3	-5.0	35.8
R8	977'	-25.8	0.0	42.3
R9	2,347'	-33.4	0.0	34.7
R10	2,259'	-33.1	-5.0	30.1

[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] Calculated barrier attenuation from existing barriers and intervening structures in the Project study area (Appendix 10.1).

TABLE 10-5: ARCHITECTURAL COATING EQUIPMENT NOISE LEVELS

Reference Construction Activity[1]	Reference Noise Level @ 50 Feet (dBA L_{eq})
Construction Vehicle Maintenance Activities	67.5
Highest Reference Noise Level at 50 Feet (dBA L_{eq}):	67.5

Receiver Location	Distance to Construction Activity (Feet)[2]	Distance Attenuation (dBA L_{eq})[3]	Calculated Noise Barrier Attenuation (dBA L_{eq})[4]	Construction Noise Level (dBA L_{eq})
R1	62'	-1.9	-5.2	60.4
R2	1,439'	-29.2	-4.6	33.7
R3	101'	-6.1	-5.3	56.1
R4	66'	-2.4	0.0	65.1
R5	195'	-11.8	0.0	55.6
R6	1,691'	-30.6	0.0	36.9
R7	1,163'	-27.3	-5.0	35.1
R8	977'	-25.8	0.0	41.6
R9	2,347'	-33.4	0.0	34.0
R10	2,259'	-33.1	-5.0	29.4

[1] Reference construction noise level measurements taken by Urban Crossroads, Inc.
[2] Distance from the nearest point of construction activity to the nearest receiver.
[3] Point (stationary) source drop off rate of 6.0 dBA per doubling of distance.
[4] Calculated barrier attenuation from existing barriers and intervening structures in the Project study area (Appendix 10.1).

TABLE 10-6: PAVING EQUIPMENT NOISE LEVELS

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

Receiver Location	Distance to Construction Activity (Feet)[2]	Distance Attenuation (dBA L_{eq})[3]	Calculated Noise Barrier Attenuation (dBA L_{eq})[4]	Construction Noise Level (dBA L_{eq})
R1	62'	-1.9	-5.2	64.5
R2	1,439'	-29.2	-4.6	37.8
R3	101'	-6.1	-5.3	60.2
R4	66'	-2.4	0.0	69.2
R5	195'	-11.8	0.0	59.8
R6	1,691'	-30.6	0.0	41.0
R7	1,163'	-27.3	-5.0	39.3
R8	977'	-25.8	0.0	45.8
R9	2,347'	-33.4	0.0	38.2
R10	2,259'	-33.1	-5.0	33.5

[1] Reference construction noise level measurements taken by Urban Crossroads, Inc.
[2] Distance from the nearest point of construction activity to the nearest receiver.
[3] Point (stationary) source drop off rate of 6.0 dBA per doubling of distance.
[4] Calculated barrier attenuation from existing barriers and intervening structures in the Project study area (Appendix 10.1).

The daytime construction noise analysis shows that the highest construction noise levels will occur when construction activities take place at the closest point from primary Project construction activity to each of the nearby receiver locations. As shown on Table 10-7, the unmitigated daytime construction noise levels are expected to range from 45.8 to 77.2 dBA L_{eq} at the nearby receiver locations.

TABLE 10-7: UNMITIGATED DAYTIME CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY

Receiver Location	Distance to Receiver (Feet)	Daytime Construction Noise Levels (dBA L_{eq})					
		Demolition	Grading	Building Construction	Architectural Coating	Paving	Highest Levels
R1	62'	72.5	72.5	61.1	60.4	64.5	72.5
R2	1,439'	45.8	45.8	34.4	33.7	37.8	45.8
R3	101'	68.2	68.2	56.8	56.1	60.2	68.2
R4	66'	77.2	77.2	65.8	65.1	69.2	77.2
R5	195'	67.7	67.7	56.3	55.6	59.8	67.7
R6	1,691'	49.0	49.0	37.6	36.9	41.0	49.0
R7	1,163'	52.2	47.2	35.8	35.1	39.3	52.2
R8	977'	53.7	53.7	42.3	41.6	45.8	53.7
R9	2,347'	46.1	46.1	34.7	34.0	38.2	46.1
R10	2,259'	46.5	41.5	30.1	29.4	33.5	46.5

10.4 NIGHTTIME CONCRETE POUR NOISE ANALYSIS

Using the reference concrete pour activity construction equipment noise levels, calculations of the nighttime Project construction noise level impacts at the nearby sensitive receiver locations were completed. Table 10-8 presents the short-term nighttime construction noise levels at the noise receiver locations which are expected to range from 37.4 to 59.0 dBA L_{eq}. To assess the highest nighttime construction noise levels, this analysis shows the highest noise impacts when the equipment with the highest reference noise level is operating at the closest point from primary construction activity to each receiver location. Exhibit 10-A shows the distance from each receiver location to the nighttime concrete pour activity locations.

TABLE 10-8: NIGHTTIME CONCRETE POUR EQUIPMENT NOISE LEVELS

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

Receiver Location	Distance to Construction Activity (Feet)[2]	Distance Attenuation (dBA L_{eq})[3]	Calculated Noise Barrier Attenuation (dBA L_{eq})[4]	Construction Noise Level (dBA L_{eq})
R1	161'	-10.2	-5.2	56.2
R2	1,511'	-29.6	-4.6	37.4
R3	184'	-11.3	-5.3	55.0
R4	214'	-12.6	0.0	59.0
R5	317'	-16.0	0.0	55.6
R6	2,044'	-32.2	0.0	39.4
R7	1,308'	-28.4	-5.0	38.2
R8	1,091'	-26.8	0.0	44.8
R9	2,422'	-33.7	0.0	37.9
R10	2,387'	-33.6	0.0	38.0

[1] Reference construction noise level measurements taken by Urban Crossroads, Inc.
[2] Distance from the nearest point of construction activity to the nearest receiver.
[3] Point (stationary) source drop off rate of 6.0 dBA per doubling of distance.
[4] Calculated barrier attenuation from existing barriers and intervening structures in the Project study area (Appendix 10.1).

10.5 OFF-SITE IMPROVEMENT ACTIVITY NOISE ANALYSIS

Off-site Project-related construction includes roadway improvements on Kimball Avenue and Bickmore Avenue, such as road widening and paving activities, and utility improvements on Mayhew Avenue, such as sewer pipe installation. To present a conservative approach, the reference construction activity noise levels of both road widening and paving, and utility improvement activities are assumed to operate within all off-site improvement areas. Exhibit 10-A shows the potential off-site improvement activity areas and receiver locations. Table 10-9 shows the off-site improvement construction noise levels will range from 37.2 to 65.3 dBA L_{eq} at the nearby sensitive receiver locations.

TABLE 10-9: OFF-SITE IMPROVEMENT EQUIPMENT NOISE LEVELS

Reference Construction Activity[1]	Reference Noise Level @ 50 Feet (dBA L_{eq})
Truck Pass-Bys & Dozer Activity	59.2
Foundation Trenching	68.2
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 Off-Site Improvement Activity (Feet)[2]	Distance Attenuation (dBA L_{eq})[3]	Calculated Noise Barrier Attenuation (dBA L_{eq})[4]	Construction Noise Level (dBA L_{eq})
R1	605'	-21.7	-5.2	44.7
R2	1,548'	-29.8	-4.6	37.2
R3	1,327'	-28.5	-5.3	37.8
R4	485'	-19.7	0.0	51.9
R5	110'	-6.8	0.0	64.8
R6	1,628'	-30.3	0.0	41.3
R7	1,004'	-26.1	-5.0	40.5
R8	310'	-15.8	0.0	55.8
R9	103'	-6.3	0.0	65.3
R10	249'	-13.9	0.0	57.7

[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/berm attenuation from existing barriers/berms in the Project study area.

10.6 CONSTRUCTION NOISE THRESHOLDS OF SIGNIFICANCE

Table 10-10 shows the highest construction noise levels at the potentially impacted receiver locations from daytime, nighttime, and off-site improvement activities, respectively. As shown on Table 10-10, the daytime construction noise levels are expected to approach 77.2 dBA L_{eq} and will exceed the City of Chino 65 dBA L_{eq} significance threshold during temporary Project construction activities at three of the 10 sensitive receiver locations: R1, and R3 to R5. Therefore, the unmitigated noise impact due to daytime Project construction is considered *potentially significant* at receiver locations R1, and R3 to R5 during daytime construction activities. All other

receiver locations will experience unmitigated *less than significant* noise impacts during daytime construction activities.

Nighttime concrete pour activity noise levels are shown to approach 59.0 dBA L_{eq} and will satisfy the City of Chino 65 dBA L_{eq} significance threshold during temporary Project construction activities at all of the sensitive receiver locations. Therefore, the unmitigated noise impact due to nighttime Project construction is considered *less than significant*.

Off-site improvement activity noise levels are shown to approach 65.3 dBA L_{eq} and will exceed the City of Chino 65 dBA L_{eq} significance threshold during temporary Project construction activities at one of the 10 sensitive receiver locations, R9, adjacent to off-site improvements on Mayhew Avenue. Therefore, the unmitigated noise impact due to Project off-site improvement construction activities is considered *potentially significant* at receiver location R9. All other receiver locations will experience unmitigated *less than significant* noise impacts during off-site improvement activities.

TABLE 10-10: UNMITIGATED CONSTRUCTION ACTIVITY NOISE LEVEL COMPLIANCE

Receiver Location[1]	Unmitigated Construction Noise Levels (dBA L_{eq})				Threshold Exceeded?[6]		
	Highest Daytime Activity Noise Levels[2]	Nighttime Concrete Pour Activity Noise Levels	Off-Site Improvement Activity Noise Levels	Threshold[5]	Highest Daytime Activity	Nighttime Concrete Pour Activity	Off-Site Improvement Activity
R1	72.5	56.2	44.7	65	**Yes**	No	No
R2	45.8	37.4	37.2	65	No	No	No
R3	68.2	55.0	37.8	65	**Yes**	No	No
R4	77.2	59.0	51.9	65	**Yes**	No	No
R5	67.7	55.6	64.8	65	**Yes**	No	No
R6	49.0	39.4	41.3	65	No	No	No
R7	52.2	38.2	40.5	65	No	No	No
R8	53.7	44.8	55.8	65	No	No	No
R9	46.1	37.9	65.3	65	No	No	**Yes**
R10	46.5	38.0	57.7	65	No	No	No

[1] Noise receiver locations are shown on Exhibit 10-A.
[2] Estimated daytime construction noise levels during peak operating conditions, as shown on Table 10-7.
[3] Estimated nighttime concrete pour construction noise levels during peak operating conditions, as shown on Table 10-8.
[4] Estimated off-site improvement construction noise levels during peak operating conditions, as shown on Table 10-9.
[5] Construction noise standards as shown on Table 3-2.
[6] Do the estimated Project construction noise levels satisfy the construction noise level threshold?

Therefore, temporary construction noise mitigation measures are required to reduce these impacts at receiver locations R1, and R3 to R5 during the daytime hours, and at R9 during off-site improvements. This includes mitigation in the form of a 150-foot buffer zone for large construction equipment (e.g. dozers, graders, scrapers, etc.) from receiver locations R1 and R3 to R5, if built and occupied at the time of Project construction, and an 8-foot high temporary noise barrier for receiver locations R4 and R5 if built and occupied at the time of Project

construction. Further, the existing residential home represented by receiver location R9 adjacent to off-site improvements shall require either a temporary 8-foot high noise barrier or sound dampening mats for heavy equipment capable of a minimum 5 dBA L_{eq} noise reduction for heavy mobile equipment engine compartments (e.g., cement mixers, dozers), as shown on Exhibit 10-B. The construction noise analysis presents a conservative approach with the highest noise-level-producing equipment for each stage of Project construction operating at the closest point from primary construction activity to the nearby sensitive receiver locations. This scenario is unlikely to occur during typical construction activities and likely overstates the construction noise levels which will be experienced at each receiver location. With the construction noise mitigation measures identified in the Executive Summary, shown on Exhibit 10-B, the worst-case construction noise level increases at the nearby residential receivers would be reduced.

The noise attenuation provided through temporary noise barriers depends on many factors including cost, wind loading, the location of the receiver, and the ability to place barriers such that the line-of-sight of the receiver is blocked to the noise source, among others. This analysis assumes a temporary noise barrier constructed using frame-mounted materials such as vinyl acoustic curtains or quilted blankets attached to the construction site perimeter fence.

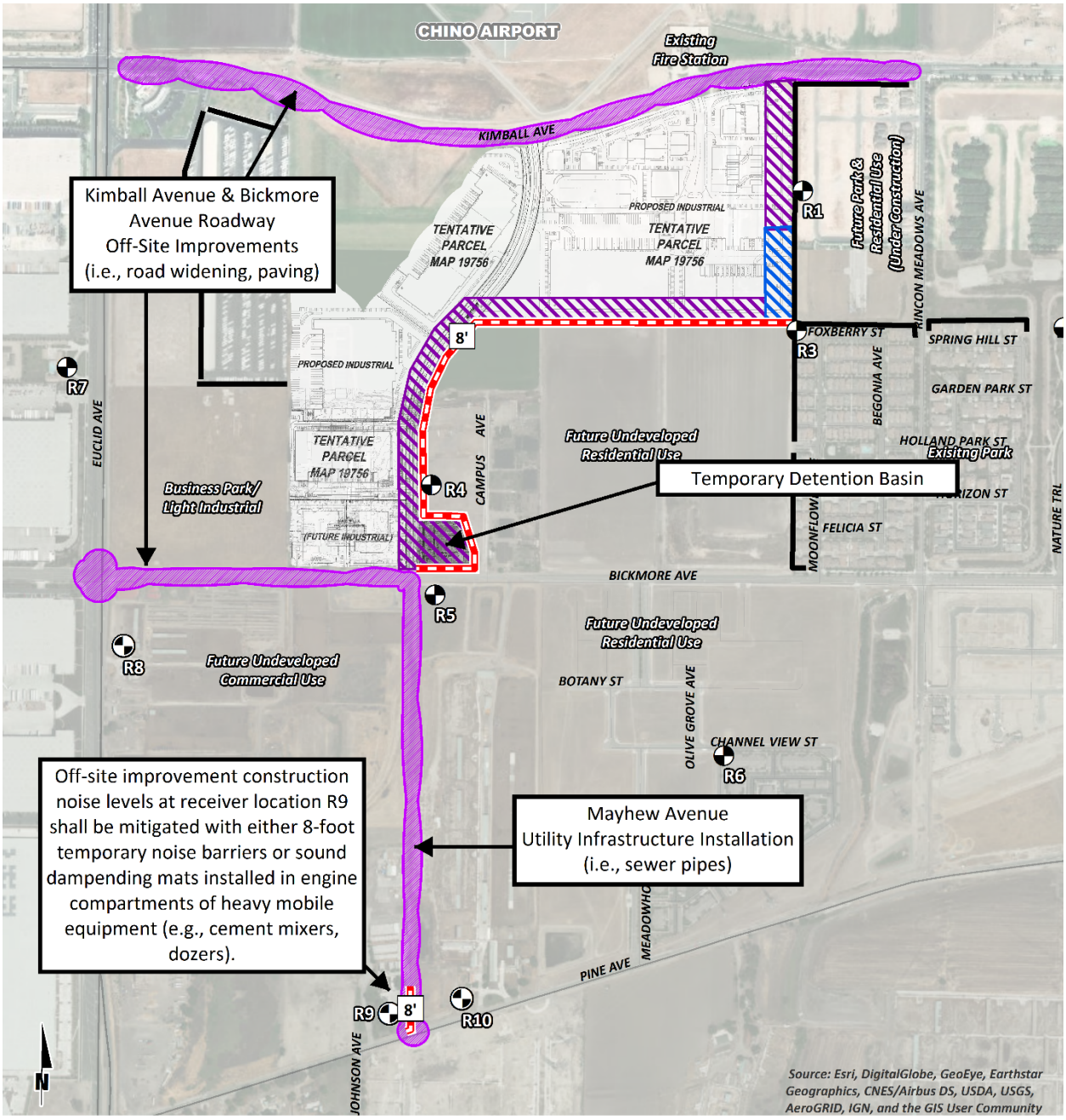
Table 10-11 shows the mitigated construction noise levels at the potentially impacted receiver locations will be reduced to range from 60.4 to 64.9 dBA L_{eq} with the attenuation provided by the 150-foot buffer zone for large construction equipment (e.g., dozers, graders, scrapers, etc.) with sound power level ratings greater than 100 dBA, and the 8-foot high temporary noise barrier. Therefore, since Project construction noise levels will be mitigated to below the 65 dBA L_{eq} City of Chino construction noise level threshold, the noise impact due to Project construction is considered a *less than significant* impact with mitigation. Sample temporary noise barrier photos are provided in Appendix 10.2 for reference.

TABLE 10-11: MITIGATED CONSTRUCTION ACTIVITY NOISE LEVEL COMPLIANCE

Receiver Location[1]	Construction Activity Exceeding Threshold	Construction Noise Levels (dBA L_{eq})[2]					
		Highest Unmitigated Activity[2]	150' Buffer Attenuation	Temporary Noise Barrier Attenuation	Mitigated Peak Activity	Threshold[3]	Threshold Exceeded?[4]
R1	Daytime	72.5	-7.7	0.0	64.8	65	No
R3	Daytime	68.2	-3.4	0.0	64.7	65	No
R4	Daytime	77.2	-7.1	-5.1	64.9	65	No
R5	Daytime	67.7	0.0	-5.1	62.6	65	No
R9	Off-Site Improvements	65.3	0.0	-4.9[5]	60.4	65	No

[1] Noise receiver locations are shown on Exhibit 10-A.
[2] Estimated construction noise levels during peak operating conditions, as shown on Table 10-10.
[3] Construction noise standards as shown on Table 3-2.
[4] Do the estimated Project construction noise levels satisfy the construction noise level threshold?
[5] Or a 5 dBA reduction with sound dampening mats for heavy mobile equipment engine compartments for receiver location R9.

EXHIBIT 10-B: CONSTRUCTION NOISE MITIGATION MEASURES



LEGEND:

- Receiver Locations
- Off-Site Improvement Receiver Locations
- Existing 6-Foot High
- Potential Off-Site Improvement Areas
- Adjacent to existing sensitive receiver locations, a 150-foot buffer for large construction equipment (e.g., dozers, graders, scrapers) with sound power level ratings greater than 100 dBA is required.
- 8-foot high temporary noise barriers required if adjacent residential use is built and
- If adjacent planned residential use is built and occupied, a 150-foot buffer for large construction equipment (e.g., dozers, graders, scrapers) with sound power level ratings greater than 100 dBA is required.

10.7 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 building, the vibration is usually short-term and is not of sufficient magnitude to cause building damage. It is not expected that heavy equipment such as large bulldozers would operate close enough to any residences to cause a vibration impact.
- Trucks: Trucks hauling building materials to construction sites can be sources of vibration intrusion if the haul routes pass through residential neighborhoods on streets with bumps or potholes. Repairing the bumps and potholes generally eliminates the problem.

Ground-borne vibration levels resulting from construction activities occurring within the Project site were estimated by data published by the Federal Transit Administration. Construction activities that would have the potential to generate low levels of ground-borne vibration within the Project site include grading. Using the vibration source level of construction equipment provided on Table 6-15 and the construction vibration assessment methodology published by the FTA, it is possible to estimate the Project vibration impacts. Table 10-12 presents the expected Project related vibration levels at the nearby receiver locations.

Based on the reference vibration levels provided by the FTA, a large bulldozer represents the peak source of vibration with a reference velocity of 0.089 in/sec PPV at 25 feet. At distances ranging from 62 to 1,691 feet from Project construction activities, construction vibration velocity levels are expected to approach 0.023 in/sec PPV, as shown on Table 10-12. To assess the human perception of vibration levels in PPV the velocities are converted to RMS vibration levels based on the Caltrans *Transportation and Construction Vibration Guidance Manual* conversion factor of 0.71. Table 10-12 shows the highest construction vibration levels in RMS are expected to approach 0.016 in/sec RMS at the nearby receiver locations. Based on the City of Chino Municipal Code standard of 0.05 in/sec RMS, the proposed Project construction activities will satisfy the vibration standard of 0.05 in/sec RMS at all receiver locations during Project construction. Therefore, the Project-related vibration impacts will be *less than significant* during the construction activities at the Project site.

Further, the Project-related construction vibration levels do not represent levels capable of causing building damage to nearby residential homes. The FTA identifies construction vibration levels capable of building damage ranging from 0.12 to 0.5 in/sec PPV. (3) The peak Project-construction vibration levels shown on Table 10-12, approaching 0.023 in/sec PPV, will not exceed the FTA vibration levels for building damage at the residential homes near the Project site. Further, the impacts at the site of the closest sensitive receivers are unlikely to be sustained during the entire construction period but will occur rather only during the times that heavy construction equipment is operating adjacent to the Project site perimeter.

TABLE 10-12: PROJECT CONSTRUCTION VIBRATION LEVELS

Receiver Location[1]	Distance to Closest Const. Activity (Feet)	Receiver PPV Levels (in/sec)[2]					RMS Velocity Levels (in/sec)[3]	Threshold Exceeded?[4]
		Small Bulldozer	Jack-hammer	Loaded Trucks	Large Bulldozer	Peak Vibration		
R1	62'	0.001	0.009	0.019	0.023	0.023	0.016	No
R2	1,439'	0.000	0.000	0.000	0.000	0.000	0.000	No
R3	101'	0.000	0.004	0.009	0.011	0.011	0.008	No
R4	66'	0.001	0.008	0.018	0.021	0.021	0.015	No
R5	195'	0.000	0.002	0.003	0.004	0.004	0.003	No
R6	1,691'	0.000	0.000	0.000	0.000	0.000	0.000	No
R7	1,004'	0.000	0.000	0.000	0.000	0.000	0.000	No
R8	310'	0.000	0.001	0.002	0.002	0.002	0.001	No
R9	103'	0.000	0.004	0.009	0.011	0.011	0.008	No
R10	249'	0.000	0.001	0.002	0.003	0.003	0.002	No

[1] Receiver locations are shown on Exhibit 10-A.
[2] Based on the Vibration Source Levels of Construction Equipment included on Table 6-15.
[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?

11 REFERENCES

1. **State of California.** *California Environmental Quality Act, Appendix G.* 2016.
2. **Urban Crossroads, Inc.** *Altitude Business Centre Traffic Impact Analysis.* August 2017.
3. **U.S. Department of Transportation, Federal Transit Administration.** *Transit Noise and Vibration Impact Assessment.* May 2006. FTA-VA-90-1003-06.
4. **U.S. Department of Transportation, Federal Highway Administration.** Construction Noise Special Report. *Federal Highway Administration.* [Online] [Cited: February 8, 2017.] https://www.fhwa.dot.gov/Environment/noise/construction_noise/special_report/hcn04.cfm.
5. **University of Massachusetts Lowell, Department of Work Environment.** *The Use of Noise Dampening Mats to Reduce Heavy-Equipment Noise.* September 2016.
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20. **San Bernardino County Airport Land Use Commission.** *Chino Airport Comprehensive Land Use Plan.* November 1991.
21. **California Court of Appeal.** *Gray v. County of Madera, F053661.* 167 Cal.App.4th 1099; - Cal.Rptr.3d, October 2008.
22. **Federal Interagency Committee on Noise.** *Federal Agency Review of Selected Airport Noise Analysis Issues.* August 1992.

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

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

25. **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.

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

27. **Urban Crossroads, Inc.** *Altitude Business Centre Air Quality Impact Analysis.* January 2018.

12 CERTIFICATION

The contents of this noise study report represent an accurate depiction of the noise environment and impacts associated with the proposed Altitude Business Centre 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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L1_N
33, 58' 7.160000", 117, 38' 12.320000"



L1_S
33, 58' 7.160000", 117, 38' 12.270000"



L1_W
33, 58' 6.020000", 117, 38' 12.080000"



L2_E
33, 57' 55.520000", 117, 37' 55.630000"



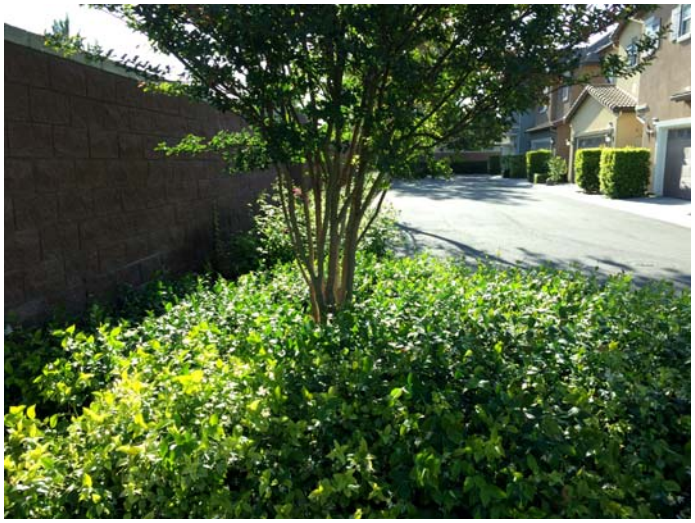
L2_N
33, 57' 55.540000", 117, 37' 55.760000"



L2_S
33, 57' 55.540000", 117, 37' 55.680000"



L2_W
33, 57' 55.540000", 117, 37' 55.870000"



L3_E
33, 57' 54.040000", 117, 38' 13.890000"



L3_S
33, 57' 54.070000", 117, 38' 13.890000"



L3_W
33, 57' 54.060000", 117, 38' 13.920000"



L4_E
33, 57' 41.430000", 117, 38' 19.270000"



L4_SW
33, 57' 41.430000", 117, 38' 19.270000"



L4_W
33, 57' 41.430000", 117, 38' 19.270000"



L5_E
33, 57' 32.650000", 117, 38' 23.530000"



L5_N
33, 57' 32.650000", 117, 38' 23.530000"



L5_S
33, 57' 32.690000", 117, 38' 23.700000"



L5_W
33, 57' 32.690000", 117, 38' 23.670000"



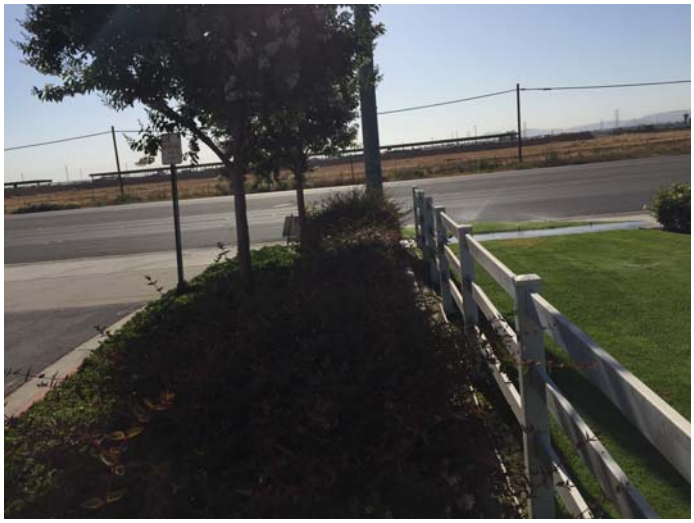
L6_N
33, 57' 41.340000", 117, 38' 50.940000"



L6_S
33, 57' 41.010000", 117, 38' 50.800000"



L6_W
33, 57' 41.000000", 117, 38' 50.780000"



L7_E
33, 57' 52.600000", 117, 39' 3.960000"



L7_N
33, 57' 52.600000", 117, 39' 3.960000"



L7_S
33, 57' 52.600000", 117, 39' 3.960000"



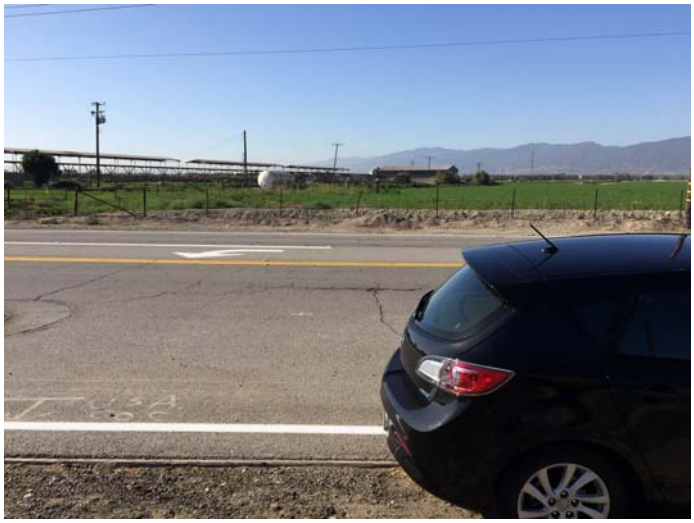
L7_W
33, 57' 52.600000", 117, 39' 3.960000"



L8_E
33, 58' 5.430000", 117, 38' 28.470000"



L8_N
33, 58' 5.430000", 117, 38' 28.470000"



L8_S
33, 58' 5.430000", 117, 38' 28.470000"



L8_W
33, 58' 5.430000", 117, 38' 28.500000"

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APPENDIX 5.2:

NOISE LEVEL MEASUREMENT WORKSHEETS

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24-Hour Noise Level Measurement Summary

Project Name: Chino Business Center

Location: L1 -Located on Rincon Meadows East of the project near existing residential.

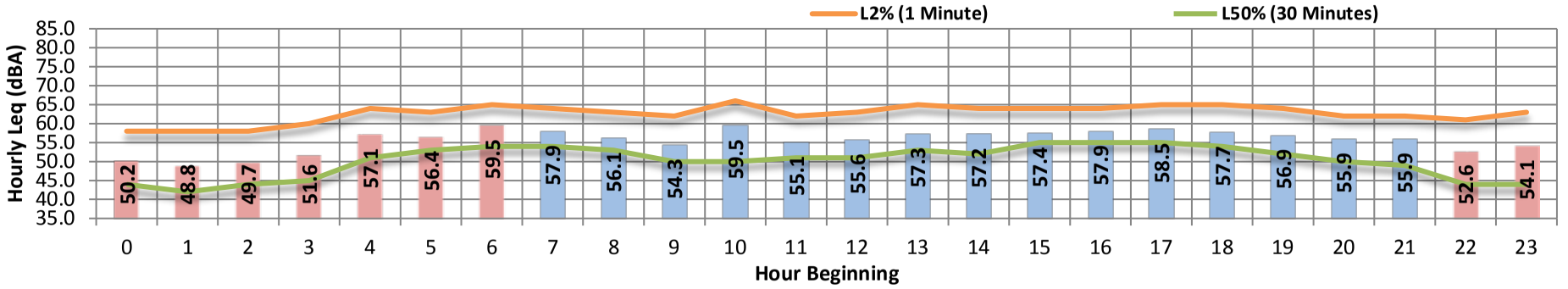
JN: 9776

Analyst: A. Wolfe

Date: 6/14/2017

Energy Average Leq		*24-Hour*
Day	*Night*	*CNEL*
57.1	54.8	61.9

Hourly Leq dBA Readings (unadjusted)



Time Period	*Hour*	*Leq*	*Lmax*	*Lmin*	*L1%*	*L2%*	*L5%*	*L8%*	*L25%*	*L50%*	*L90%*	*L95%*	*L99%*
Day	Min	54.3	70.1	40.3	64.0	62.0	59.0	58.0	54.0	49.0	43.0	42.0	41.0
	Max	59.5	87.8	45.0	69.0	66.0	62.0	61.0	58.0	55.0	49.0	48.0	46.0
Energy Average:		57.1	Average:		65.9	63.7	61.1	59.6	55.9	52.3	46.1	44.8	43.2
Night	Min	48.8	69.1	38.0	60.0	58.0	54.0	51.0	44.0	42.0	39.0	39.0	38.0
	Max	59.5	84.5	44.6	68.0	65.0	62.0	61.0	57.0	54.0	47.0	47.0	45.0
Energy Average:		54.8	Average:		63.3	61.1	57.7	55.9	50.6	46.8	42.3	42.1	41.1
Hourly Summary													
Night	0	50.2	75.6	38.6	60.0	58.0	55.0	52.0	46.0	44.0	41.0	40.0	40.0
	1	48.8	69.6	38.1	60.0	58.0	54.0	51.0	44.0	42.0	40.0	40.0	39.0
	2	49.7	73.0	39.3	60.0	58.0	54.0	52.0	47.0	44.0	41.0	41.0	40.0
	3	51.6	69.1	40.2	62.0	60.0	56.0	55.0	49.0	45.0	42.0	42.0	41.0
	4	57.1	77.3	42.6	68.0	64.0	60.0	59.0	55.0	51.0	45.0	45.0	44.0
	5	56.4	70.7	43.8	65.0	63.0	61.0	60.0	56.0	53.0	47.0	46.0	45.0
	6	59.5	84.5	44.6	68.0	65.0	62.0	61.0	57.0	54.0	47.0	47.0	45.0
Day	7	57.9	76.9	44.1	68.0	64.0	62.0	60.0	57.0	54.0	48.0	46.0	45.0
	8	56.1	75.6	41.8	65.0	63.0	61.0	59.0	56.0	53.0	46.0	45.0	43.0
	9	54.3	70.1	41.1	64.0	62.0	60.0	58.0	54.0	50.0	44.0	43.0	42.0
	10	59.5	87.8	40.3	69.0	66.0	62.0	59.0	55.0	50.0	43.0	42.0	41.0
	11	55.1	74.3	40.8	64.0	62.0	60.0	59.0	55.0	51.0	45.0	43.0	42.0
	12	55.6	73.6	40.8	64.0	63.0	61.0	59.0	55.0	51.0	45.0	44.0	42.0
	13	57.3	75.3	42.1	68.0	65.0	62.0	60.0	56.0	53.0	47.0	46.0	43.0
	14	57.2	80.3	41.8	66.0	64.0	61.0	60.0	56.0	52.0	47.0	45.0	43.0
	15	57.4	71.2	45.0	66.0	64.0	62.0	61.0	57.0	55.0	49.0	47.0	46.0
	16	57.9	78.6	44.0	66.0	64.0	62.0	60.0	57.0	55.0	48.0	47.0	45.0
	17	58.5	79.3	42.4	67.0	65.0	62.0	61.0	58.0	55.0	49.0	48.0	46.0
	18	57.7	76.1	43.3	67.0	65.0	62.0	61.0	57.0	54.0	47.0	46.0	44.0
	19	56.9	77.8	40.3	67.0	64.0	61.0	60.0	56.0	52.0	44.0	43.0	41.0
	20	55.9	79.0	43.3	64.0	62.0	60.0	59.0	55.0	50.0	45.0	44.0	44.0
	21	55.9	80.9	40.4	64.0	62.0	59.0	58.0	54.0	49.0	44.0	43.0	41.0
Night	22	52.6	73.8	38.1	62.0	61.0	58.0	56.0	51.0	44.0	39.0	39.0	38.0
	23	54.1	74.8	38.0	65.0	63.0	59.0	57.0	50.0	44.0	39.0	39.0	38.0

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

Project Name: Chino Business Center

Location: L2 -Located on Mill Creek Avenue East of the project near existing residential.

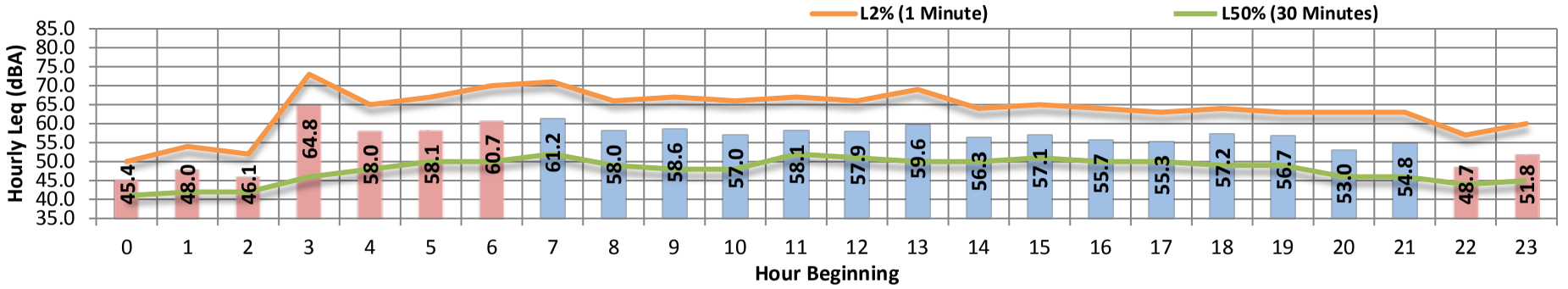
JN: 9776

Analyst: A. Wolfe

Date: 6/14/2017

Energy Average Leq		24-Hour
Day	Night	CNEL
57.5	58.1	64.6

Hourly Leq dBA Readings (unadjusted)



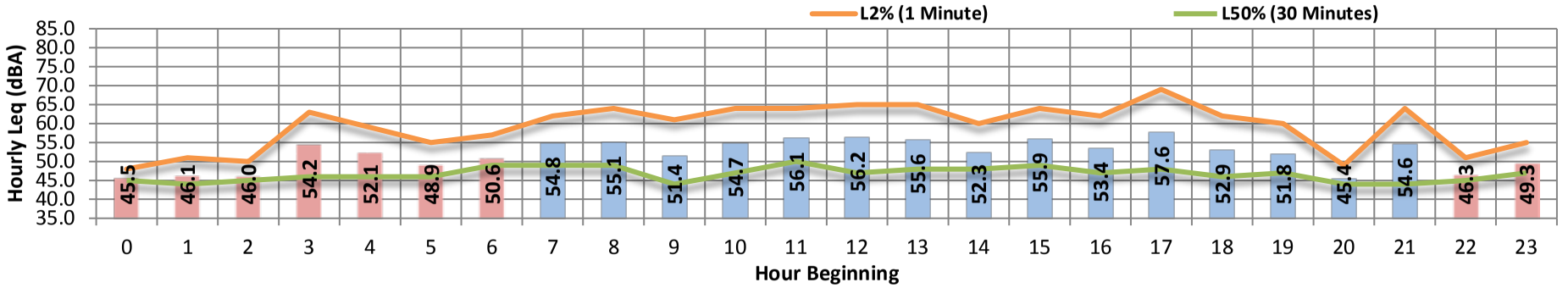
Time Period	Hour	Leq	Lmax	Lmin	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	53.0	72.0	39.5	64.0	63.0	59.0	56.0	48.0	46.0	42.0	41.0	40.0
	Max	61.2	83.6	43.4	74.0	71.0	66.0	64.0	57.0	52.0	47.0	46.0	44.0
Energy Average:		57.5	Average:		67.7	65.4	61.9	59.9	53.7	49.4	44.4	43.6	42.5
Night	Min	45.4	67.3	38.1	55.0	50.0	46.0	45.0	43.0	41.0	39.0	38.0	38.0
	Max	64.8	83.3	45.3	73.0	73.0	73.0	72.0	57.0	50.0	47.0	46.0	46.0
Energy Average:		58.1	Average:		63.7	60.9	57.3	55.6	48.9	45.3	42.6	42.2	41.6
Hourly Summary													
Night	0	45.4	68.3	38.1	55.0	50.0	46.0	45.0	43.0	41.0	39.0	38.0	38.0
	1	48.0	74.3	39.8	58.0	54.0	48.0	47.0	43.0	42.0	40.0	40.0	40.0
	2	46.1	68.4	39.9	55.0	52.0	49.0	48.0	44.0	42.0	41.0	41.0	40.0
	3	64.8	83.3	40.9	73.0	73.0	73.0	72.0	54.0	46.0	42.0	42.0	41.0
	4	58.0	81.5	43.6	68.0	65.0	61.0	57.0	50.0	48.0	46.0	45.0	44.0
	5	58.1	79.6	45.3	69.0	67.0	64.0	62.0	55.0	50.0	47.0	46.0	46.0
	6	60.7	81.1	42.8	72.0	70.0	66.0	64.0	57.0	50.0	45.0	45.0	44.0
Day	7	61.2	80.3	41.1	74.0	71.0	66.0	64.0	57.0	52.0	45.0	44.0	42.0
	8	58.0	78.8	40.0	69.0	66.0	63.0	61.0	55.0	49.0	43.0	42.0	41.0
	9	58.6	80.8	39.5	71.0	67.0	62.0	60.0	54.0	48.0	42.0	41.0	40.0
	10	57.0	79.6	39.9	68.0	66.0	62.0	60.0	53.0	48.0	42.0	41.0	41.0
	11	58.1	76.3	42.8	69.0	67.0	63.0	61.0	56.0	52.0	47.0	46.0	43.0
	12	57.9	79.5	42.9	69.0	66.0	62.0	61.0	55.0	51.0	46.0	45.0	44.0
	13	59.6	80.8	42.1	71.0	69.0	65.0	63.0	56.0	50.0	45.0	44.0	43.0
	14	56.3	78.8	43.0	67.0	64.0	60.0	59.0	53.0	50.0	45.0	44.0	44.0
	15	57.1	77.3	43.4	67.0	65.0	62.0	60.0	55.0	51.0	46.0	45.0	44.0
	16	55.7	72.0	43.1	65.0	64.0	62.0	60.0	55.0	50.0	45.0	44.0	44.0
	17	55.3	72.2	42.0	65.0	63.0	61.0	59.0	54.0	50.0	45.0	45.0	43.0
	18	57.2	83.2	42.3	66.0	64.0	61.0	59.0	53.0	49.0	45.0	44.0	43.0
	19	56.7	83.6	42.2	65.0	63.0	60.0	59.0	53.0	49.0	44.0	44.0	43.0
	20	53.0	77.9	42.0	64.0	63.0	59.0	56.0	48.0	46.0	43.0	43.0	42.0
	21	54.8	83.5	40.5	65.0	63.0	60.0	57.0	49.0	46.0	43.0	42.0	41.0
Night	22	48.7	67.3	39.9	60.0	57.0	53.0	51.0	46.0	44.0	42.0	42.0	41.0
	23	51.8	70.1	39.8	63.0	60.0	56.0	54.0	48.0	45.0	41.0	41.0	40.0

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

Project Name:	Chino Business Center	*JN:*	9776	*Energy Average Leq*	*24-Hour*
		Analyst:	A. Wolfe	*Day* / *Night*	*CNEL*
Location:	L3 -Located onFoxberry Street East of the project near existing residential.	*Date:*	6/14/2017	54.5 / 49.8	57.6

Hourly Leq dBA Readings (unadjusted)



Time Period	*Hour*	*Leq*	*Lmax*	*Lmin*	*L1%*	*L2%*	*L5%*	*L8%*	*L25%*	*L50%*	*L90%*	*L95%*	*L99%*
Day	Min	45.4	61.8	39.1	51.0	49.0	47.0	47.0	45.0	44.0	41.0	39.0	39.0
	Max	57.6	77.0	45.3	70.0	69.0	63.0	63.0	54.0	50.0	46.0	46.0	45.0
Energy Average:		54.5	Average:		64.6	62.3	58.8	57.1	50.6	47.1	43.7	42.9	42.1
Night	Min	45.5	58.7	40.1	51.0	48.0	46.0	46.0	45.0	44.0	42.0	42.0	41.0
	Max	54.2	75.4	44.9	64.0	63.0	63.0	62.0	50.0	49.0	46.0	46.0	45.0
Energy Average:		49.8	Average:		56.4	54.3	51.8	50.8	47.3	45.9	44.0	43.8	43.3
Hourly Summary													
Night	0	45.5	59.1	42.5	51.0	48.0	46.0	46.0	45.0	45.0	43.0	43.0	43.0
	1	46.1	66.1	41.4	55.0	51.0	48.0	47.0	45.0	44.0	42.0	42.0	42.0
	2	46.0	58.7	43.3	51.0	50.0	48.0	47.0	46.0	45.0	44.0	44.0	43.0
	3	54.2	63.8	43.9	63.0	63.0	63.0	62.0	49.0	46.0	45.0	44.0	44.0
	4	52.1	75.4	43.3	64.0	59.0	53.0	51.0	49.0	46.0	44.0	44.0	43.0
	5	48.9	70.4	43.3	56.0	55.0	52.0	51.0	48.0	46.0	45.0	44.0	44.0
	6	50.6	64.2	44.7	58.0	57.0	54.0	53.0	50.0	49.0	46.0	46.0	45.0
Day	7	54.8	76.3	45.3	65.0	62.0	58.0	56.0	52.0	49.0	46.0	46.0	45.0
	8	55.1	72.2	41.3	66.0	64.0	61.0	59.0	53.0	49.0	45.0	43.0	42.0
	9	51.4	74.2	39.1	62.0	61.0	56.0	54.0	48.0	44.0	41.0	39.0	39.0
	10	54.7	71.4	39.4	66.0	64.0	61.0	59.0	52.0	47.0	42.0	41.0	39.0
	11	56.1	75.2	41.3	67.0	64.0	61.0	59.0	54.0	50.0	44.0	43.0	42.0
	12	56.2	77.0	41.3	69.0	65.0	61.0	59.0	52.0	47.0	43.0	43.0	42.0
	13	55.6	75.0	41.5	69.0	65.0	60.0	57.0	51.0	48.0	44.0	43.0	42.0
	14	52.3	70.0	42.5	62.0	60.0	58.0	56.0	50.0	48.0	45.0	44.0	43.0
	15	55.9	73.6	42.6	68.0	64.0	61.0	60.0	53.0	49.0	45.0	44.0	43.0
	16	53.4	72.7	43.4	64.0	62.0	57.0	56.0	50.0	47.0	45.0	44.0	44.0
	17	57.6	76.6	41.3	70.0	69.0	63.0	60.0	51.0	48.0	44.0	43.0	42.0
	18	52.9	74.4	41.8	64.0	62.0	58.0	55.0	49.0	46.0	43.0	43.0	42.0
	19	51.8	68.3	42.5	62.0	60.0	57.0	56.0	50.0	47.0	44.0	44.0	43.0
	20	45.4	61.8	41.7	51.0	49.0	47.0	47.0	45.0	44.0	43.0	42.0	42.0
	21	54.6	65.4	39.6	64.0	64.0	63.0	63.0	49.0	44.0	42.0	42.0	41.0
Night	22	46.3	59.5	40.1	53.0	51.0	49.0	48.0	46.0	45.0	42.0	42.0	41.0
	23	49.3	61.8	44.9	57.0	55.0	53.0	52.0	48.0	47.0	45.0	45.0	45.0

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

Project Name: Chino Business Center

Location: L4 -Located on Bickmore Avenue South of the project near existing residential.

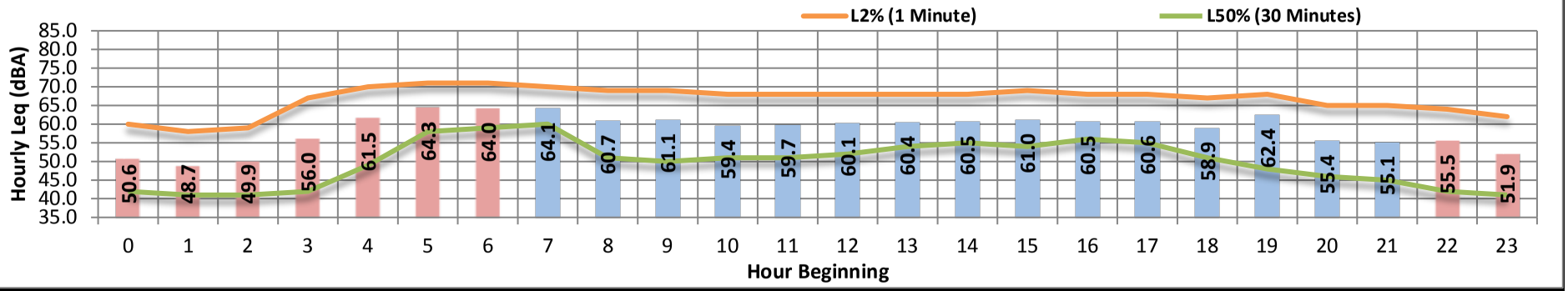
JN: 9776

Analyst: A. Wolfe

Date: 6/14/2017

Energy Average Leq		*24-Hour*
Day	*Night*	*CNEL*
60.5	59.4	66.2

Hourly Leq dBA Readings (unadjusted)



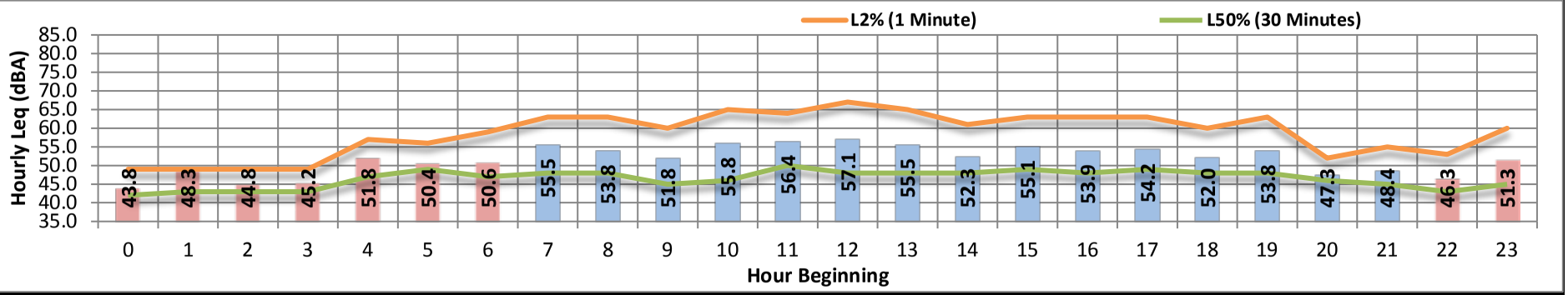
Time Period	*Hour*	*Leq*	*Lmax*	*Lmin*	*L1%*	*L2%*	*L5%*	*L8%*	*L25%*	*L50%*	*L90%*	*L95%*	*L99%*
Day	Min	55.1	70.3	38.3	66.0	65.0	62.0	60.0	49.0	45.0	41.0	40.0	38.0
	Max	64.1	90.2	43.5	72.0	70.0	69.0	68.0	65.0	60.0	48.0	47.0	45.0
Energy Average:		60.5	Average:		69.5	67.9	65.6	64.1	57.8	51.9	44.8	43.5	42.1
Night	Min	48.7	68.7	35.8	60.0	58.0	48.0	46.0	43.0	41.0	38.0	38.0	37.0
	Max	64.3	88.6	45.0	73.0	71.0	69.0	68.0	65.0	59.0	48.0	47.0	46.0
Energy Average:		59.4	Average:		67.0	64.7	60.1	57.7	50.7	46.1	41.2	40.8	40.1
Hourly Summary													
Night	0	50.6	74.6	38.6	63.0	60.0	54.0	51.0	44.0	42.0	39.0	38.0	38.0
	1	48.7	68.7	38.4	60.0	58.0	55.0	51.0	43.0	41.0	38.0	38.0	38.0
	2	49.9	73.0	38.2	64.0	59.0	48.0	46.0	43.0	41.0	39.0	38.0	38.0
	3	56.0	80.2	38.7	68.0	67.0	62.0	59.0	45.0	42.0	40.0	40.0	38.0
	4	61.5	86.2	42.7	71.0	70.0	67.0	66.0	58.0	49.0	44.0	44.0	43.0
	5	64.3	88.6	45.0	72.0	71.0	69.0	68.0	64.0	58.0	48.0	47.0	46.0
	6	64.0	79.9	44.1	73.0	71.0	69.0	68.0	65.0	59.0	47.0	46.0	45.0
Day	7	64.1	87.0	41.6	72.0	70.0	69.0	68.0	65.0	60.0	47.0	45.0	43.0
	8	60.7	77.9	40.2	71.0	69.0	67.0	65.0	60.0	51.0	43.0	42.0	41.0
	9	61.1	86.0	38.3	70.0	69.0	66.0	64.0	57.0	50.0	41.0	40.0	38.0
	10	59.4	79.6	38.6	70.0	68.0	65.0	64.0	57.0	51.0	42.0	40.0	40.0
	11	59.7	80.5	38.7	70.0	68.0	66.0	64.0	57.0	51.0	43.0	42.0	41.0
	12	60.1	79.9	40.0	71.0	68.0	66.0	64.0	58.0	52.0	46.0	44.0	42.0
	13	60.4	80.2	41.6	70.0	68.0	66.0	64.0	59.0	54.0	47.0	46.0	44.0
	14	60.5	81.3	42.6	70.0	68.0	66.0	65.0	60.0	55.0	48.0	46.0	44.0
	15	61.0	78.2	43.5	71.0	69.0	66.0	65.0	60.0	54.0	48.0	47.0	45.0
	16	60.5	77.8	43.4	68.0	68.0	66.0	65.0	61.0	56.0	47.0	46.0	44.0
	17	60.6	79.8	43.0	69.0	68.0	66.0	65.0	60.0	55.0	47.0	46.0	44.0
	18	58.9	77.3	41.7	68.0	67.0	65.0	64.0	57.0	51.0	45.0	43.0	42.0
	19	62.4	90.2	41.6	71.0	68.0	65.0	63.0	56.0	48.0	43.0	43.0	42.0
	20	55.4	70.3	41.6	66.0	65.0	63.0	61.0	51.0	46.0	43.0	42.0	41.0
	21	55.1	74.2	38.8	66.0	65.0	62.0	60.0	49.0	45.0	42.0	41.0	40.0
Night	22	55.5	82.4	35.8	67.0	64.0	60.0	56.0	49.0	42.0	38.0	38.0	38.0
	23	51.9	71.4	35.8	65.0	62.0	57.0	54.0	45.0	41.0	38.0	38.0	37.0

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

			Energy Average Leq		24-Hour
Project Name:	Chino Business Center	*JN:* 9776	*Day*	*Night*	*CNEL*
Location:	L5 -Located on Channel View Street South of the project near existing residential.	*Analyst:* A. Wolfe	54.2	49.0	56.9
		Date: 6/14/2017			

Hourly Leq dBA Readings (unadjusted)



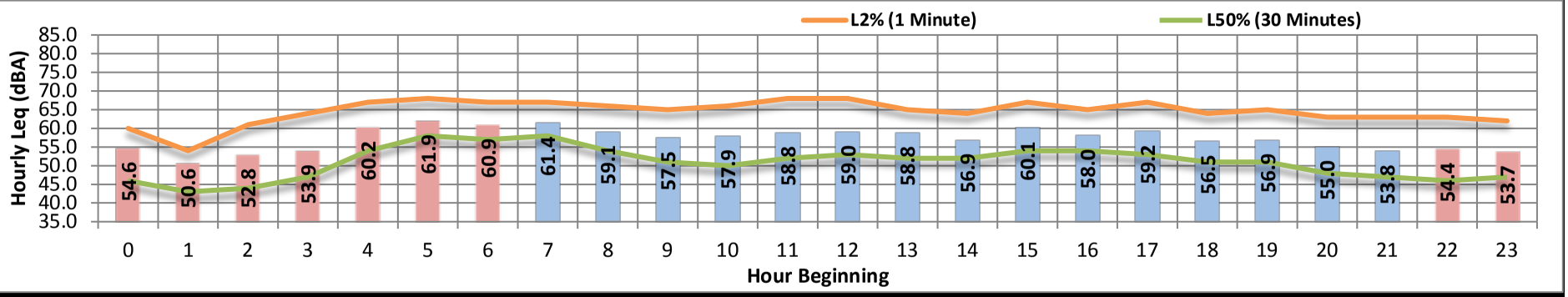
Time Period	*Hour*	*Leq*	*Lmax*	*Lmin*	*L1%*	*L2%*	*L5%*	*L8%*	*L25%*	*L50%*	*L90%*	*L95%*	*L99%*
Day	Min	47.3	59.6	39.2	53.0	52.0	50.0	49.0	46.0	45.0	41.0	40.0	39.0
	Max	57.1	76.6	44.2	70.0	67.0	63.0	60.0	54.0	50.0	46.0	46.0	45.0
Energy Average:		54.2	Average:		64.1	61.8	58.3	56.1	50.7	47.6	44.1	43.6	42.7
Night	Min	43.8	59.2	39.2	51.0	49.0	46.0	45.0	43.0	42.0	41.0	41.0	39.0
	Max	51.8	73.8	45.8	63.0	60.0	56.0	54.0	50.0	49.0	47.0	47.0	46.0
Energy Average:		49.0	Average:		56.1	53.4	51.1	49.6	46.4	44.7	42.8	42.6	41.9
Hourly Summary													
Night	0	43.8	61.3	40.5	51.0	49.0	46.0	45.0	43.0	42.0	41.0	41.0	41.0
	1	48.3	73.8	39.2	52.0	49.0	48.0	46.0	44.0	43.0	41.0	41.0	40.0
	2	44.8	59.2	39.2	51.0	49.0	48.0	47.0	44.0	43.0	41.0	41.0	39.0
	3	45.2	64.4	40.9	55.0	49.0	47.0	46.0	44.0	43.0	42.0	41.0	41.0
	4	51.8	72.9	43.9	59.0	57.0	55.0	54.0	49.0	47.0	45.0	45.0	44.0
	5	50.4	62.8	45.8	58.0	56.0	54.0	52.0	50.0	49.0	47.0	47.0	46.0
	6	50.6	65.2	44.1	60.0	59.0	55.0	53.0	49.0	47.0	45.0	45.0	45.0
Day	7	55.5	75.7	41.5	65.0	63.0	60.0	59.0	53.0	48.0	43.0	43.0	42.0
	8	53.8	71.1	39.2	65.0	63.0	59.0	56.0	52.0	48.0	42.0	41.0	40.0
	9	51.8	69.7	39.2	62.0	60.0	58.0	56.0	49.0	45.0	41.0	40.0	39.0
	10	55.8	75.9	40.0	67.0	65.0	61.0	59.0	51.0	46.0	42.0	41.0	41.0
	11	56.4	75.9	40.9	67.0	64.0	62.0	60.0	54.0	50.0	44.0	43.0	42.0
	12	57.1	76.6	42.1	70.0	67.0	63.0	59.0	51.0	48.0	44.0	43.0	42.0
	13	55.5	71.8	42.9	67.0	65.0	60.0	58.0	53.0	48.0	45.0	45.0	44.0
	14	52.3	69.4	43.2	63.0	61.0	57.0	54.1	50.0	48.0	45.0	45.0	44.0
	15	55.1	75.5	43.9	66.0	63.0	58.0	56.0	52.0	49.0	46.0	45.0	44.0
	16	53.9	73.1	43.8	65.0	63.0	59.0	57.0	51.0	48.0	45.0	45.0	44.0
	17	54.2	71.8	44.0	66.0	63.0	59.0	57.0	51.0	49.0	46.0	46.0	45.0
	18	52.0	73.5	44.0	62.0	60.0	56.0	54.0	50.0	48.0	45.0	45.0	44.0
	19	53.8	73.3	44.2	65.0	63.0	60.0	57.0	51.0	48.0	45.0	45.0	44.0
	20	47.3	59.6	43.8	53.0	52.0	50.0	49.0	47.0	46.0	45.0	44.0	44.0
	21	48.4	66.2	41.0	58.0	55.0	53.0	51.0	46.0	45.0	43.0	43.0	42.0
Night	22	46.3	63.2	39.2	56.0	53.0	51.0	49.0	45.0	43.0	41.0	41.0	40.0
	23	51.3	70.6	40.6	63.0	60.0	56.0	54.0	50.0	45.0	42.0	41.0	41.0

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

Project Name:	Chino Business Center	*JN:*	9776	*Energy Average Leq*	*24-Hour*
Location:	L6 -Located on Bickmore Avenue South of the project on the property line near existing residential.	*Analyst:*	A. Wolfe	*Day* / *Night*	*CNEL*
		Date:	6/14/2017	58.3 / 57.6	64.3

Hourly Leq dBA Readings (unadjusted)



Time Period	*Hour*	*Leq*	*Lmax*	*Lmin*	*L1%*	*L2%*	*L5%*	*L8%*	*L25%*	*L50%*	*L90%*	*L95%*	*L99%*
Day	Min	53.8	70.4	40.6	64.0	63.0	61.0	59.0	51.0	47.0	44.0	43.0	42.0
	Max	61.4	84.4	46.6	71.0	68.0	65.0	65.0	62.0	58.0	51.0	49.0	47.0
Energy Average:		58.3	Average:		67.5	65.5	62.9	61.5	56.5	52.0	47.5	46.5	45.3
Night	Min	50.6	76.2	40.7	59.0	54.0	49.0	47.0	45.0	43.0	42.0	41.0	41.0
	Max	61.9	86.1	49.6	70.0	68.0	66.0	65.0	62.0	58.0	53.0	52.0	50.0
Energy Average:		57.6	Average:		65.4	62.9	58.9	56.7	52.1	49.1	45.4	44.4	43.7
Hourly Summary													
Night	0	54.6	85.1	42.4	63.0	60.0	55.0	51.0	48.0	46.0	44.0	43.0	42.0
	1	50.6	77.9	40.8	59.0	54.0	49.0	47.0	45.0	43.0	42.0	41.0	41.0
	2	52.8	78.7	40.7	64.0	61.0	53.0	50.0	46.0	44.0	42.0	41.0	41.0
	3	53.9	76.2	41.7	65.0	64.0	60.0	56.0	49.0	47.0	44.0	43.0	42.0
	4	60.2	86.1	44.2	69.0	67.0	65.0	64.0	58.0	54.0	47.0	46.0	45.0
	5	61.9	85.2	49.6	70.0	68.0	66.0	65.0	62.0	58.0	53.0	52.0	50.0
	6	60.9	77.5	45.1	69.0	67.0	65.0	64.0	61.0	57.0	51.0	49.0	47.0
Day	7	61.4	80.2	44.4	69.0	67.0	65.0	65.0	62.0	58.0	51.0	49.0	46.0
	8	59.1	74.2	43.2	68.0	66.0	64.0	63.0	59.0	54.0	48.0	47.0	45.0
	9	57.5	77.1	41.4	67.0	65.0	63.0	62.0	56.0	51.0	46.0	45.0	43.0
	10	57.9	79.0	40.6	69.0	66.0	62.0	60.0	54.0	50.0	45.0	43.0	42.0
	11	58.8	81.4	42.5	69.0	68.0	64.0	62.0	57.0	52.0	47.0	46.0	44.0
	12	59.0	76.6	44.2	70.0	68.0	64.0	62.0	57.0	53.0	48.0	47.0	46.0
	13	58.8	82.9	46.6	68.0	65.0	62.0	61.0	56.0	52.0	49.0	48.0	47.0
	14	56.9	76.7	46.3	66.0	64.0	62.0	60.0	56.0	52.0	48.0	48.0	47.0
	15	60.1	84.4	46.5	71.0	67.0	64.0	62.0	58.0	54.0	49.0	48.0	47.0
	16	58.0	71.6	46.1	66.0	65.0	63.0	62.0	58.0	54.0	49.0	48.0	47.0
	17	59.2	81.0	45.5	68.0	67.0	64.0	63.0	59.0	53.0	49.0	48.0	47.0
	18	56.5	72.5	45.4	65.0	64.0	62.0	61.0	56.0	51.0	48.0	47.0	46.0
	19	56.9	76.8	44.9	67.0	65.0	62.0	61.0	56.0	51.0	47.0	46.0	45.0
	20	55.0	74.3	44.3	65.0	63.0	61.0	60.0	52.0	48.0	45.0	45.0	45.0
	21	53.8	70.4	42.3	64.0	63.0	61.0	59.0	51.0	47.0	44.0	43.0	43.0
Night	22	54.4	78.1	41.7	66.0	63.0	59.0	57.0	49.0	46.0	42.0	42.0	42.0
	23	53.7	78.0	42.5	64.0	62.0	58.0	56.0	51.0	47.0	44.0	43.0	43.0

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

Project Name: Chino Business Center

Location: L7 -Located on Euclid Avenue West of the project near existing residential.

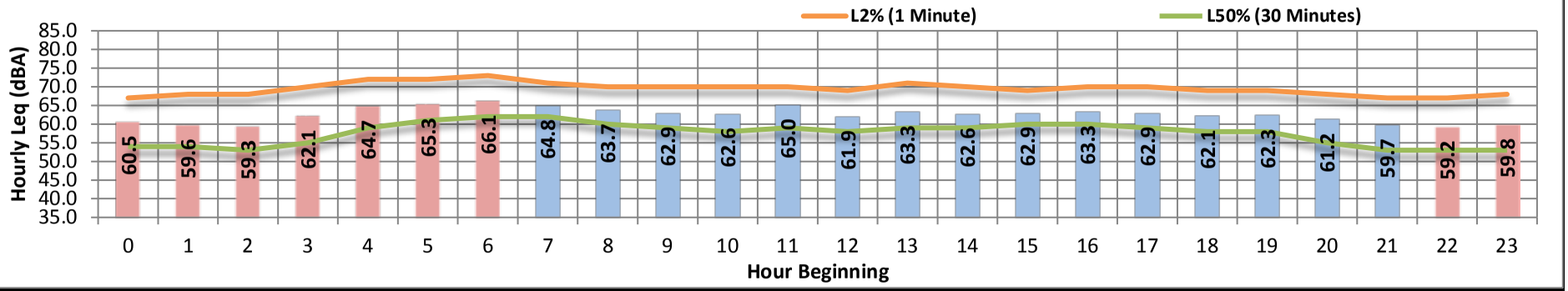
JN: 9776

Analyst: A. Wolfe

Date: 6/14/2017

Energy Average Leq		24-Hour
Day	*Night*	*CNEL*
62.9	62.7	69.3

Hourly Leq dBA Readings (unadjusted)



Time Period	*Hour*	*Leq*	*Lmax*	*Lmin*	*L1%*	*L2%*	*L5%*	*L8%*	*L25%*	*L50%*	*L90%*	*L95%*	*L99%*
Day	Min	59.7	75.8	44.0	69.0	67.0	65.0	64.0	59.0	53.0	49.0	47.0	46.0
	Max	65.0	92.7	50.9	72.0	71.0	69.0	69.0	66.0	62.0	53.0	52.0	51.0
Energy Average:		62.9	Average:		70.9	69.5	67.5	66.5	62.9	58.5	50.9	49.6	48.2
Night	Min	59.2	75.5	46.0	69.0	67.0	64.0	63.0	56.0	53.0	49.0	48.0	46.0
	Max	66.1	86.7	51.4	74.0	73.0	72.0	70.0	67.0	62.0	53.0	53.0	52.0
Energy Average:		62.7	Average:		71.0	69.4	67.3	65.9	61.0	56.0	51.4	50.8	49.8
Hourly Summary													
Night	0	60.5	86.7	49.2	69.0	67.0	64.0	63.0	58.0	54.0	52.0	51.0	50.0
	1	59.6	75.5	49.9	69.0	68.0	65.0	64.0	58.0	54.0	51.0	51.0	50.0
	2	59.3	76.7	48.9	70.0	68.0	66.0	63.0	56.0	53.0	51.0	50.0	50.0
	3	62.1	76.2	50.0	72.0	70.0	68.0	67.0	61.0	55.0	52.0	52.0	51.0
	4	64.7	80.3	51.0	73.0	72.0	70.0	69.0	65.0	59.0	53.0	52.0	51.0
	5	65.3	81.1	51.4	73.0	72.0	71.0	70.0	66.0	61.0	53.0	53.0	52.0
	6	66.1	78.1	47.7	74.0	73.0	72.0	70.0	67.0	62.0	52.0	51.0	50.0
Day	7	64.8	78.0	45.0	72.0	71.0	69.0	69.0	66.0	62.0	52.0	50.0	47.0
	8	63.7	77.3	45.0	72.0	70.0	69.0	68.0	64.0	60.0	50.0	48.0	46.0
	9	62.9	78.8	44.3	71.0	70.0	68.0	67.0	63.0	59.0	49.0	48.0	46.0
	10	62.6	80.0	44.0	71.0	70.0	68.0	67.0	63.0	58.0	49.0	47.0	46.0
	11	65.0	92.7	44.9	72.0	70.0	68.0	67.0	63.0	59.0	50.0	49.0	47.0
	12	61.9	77.4	45.8	71.0	69.0	67.0	66.0	62.0	58.0	50.0	48.0	47.0
	13	63.3	79.8	46.4	72.0	71.0	68.0	67.0	63.0	59.0	52.0	51.0	49.0
	14	62.6	81.3	46.6	71.0	70.0	67.0	66.0	63.0	59.0	51.0	50.0	48.0
	15	62.9	76.0	49.5	70.0	69.0	67.0	66.0	64.0	60.0	53.0	52.0	50.0
	16	63.3	84.8	48.9	71.0	70.0	68.0	67.0	64.0	60.0	52.0	51.0	50.0
	17	62.9	75.8	49.5	71.0	70.0	68.0	67.0	64.0	59.0	53.0	52.0	51.0
	18	62.1	78.6	50.9	70.0	69.0	67.0	66.0	63.0	58.0	53.0	52.0	51.0
	19	62.3	82.4	47.4	70.0	69.0	67.0	66.0	63.0	58.0	51.0	50.0	49.0
	20	61.2	86.6	46.9	70.0	68.0	66.0	65.0	60.0	55.0	49.0	48.0	48.0
	21	59.7	78.4	47.2	69.0	67.0	65.0	64.0	59.0	53.0	49.0	48.0	48.0
Night	22	59.2	77.5	46.0	69.0	67.0	65.0	63.0	59.0	53.0	49.0	48.0	46.0
	23	59.8	80.1	47.9	70.0	68.0	65.0	64.0	59.0	53.0	50.0	49.0	48.0

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

Project Name: Chino Business Center

Location: L8 -Located on Kimball Avenue North of the project near existing Fire Station.

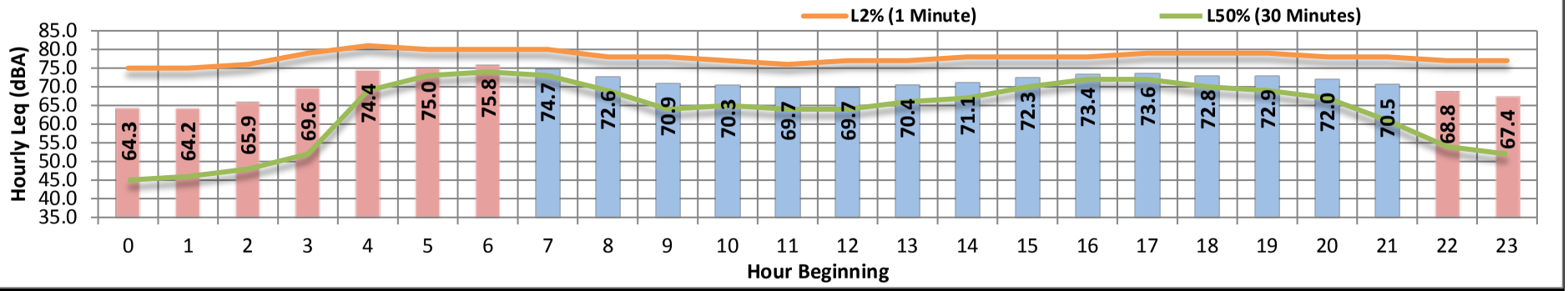
JN: 9776

Analyst: A. Wolfe

Date: 6/14/2017

Energy Average Leq		24-Hour
Day	Night	CNEL
72.1	71.5	78.3

Hourly Leq dBA Readings (unadjusted)



Time Period	Hour	Leq	Lmax	Lmin	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	69.7	84.0	40.5	78.0	76.0	75.0	74.0	70.0	61.0	47.0	44.0	42.0
	Max	74.7	95.3	45.8	81.0	80.0	78.0	78.0	76.0	73.0	59.0	55.0	48.0
Energy Average:		72.1	Average:		79.1	78.0	76.4	76.0	72.7	67.5	51.1	48.7	45.7
Night	Min	64.2	84.8	40.6	76.0	75.0	71.0	68.0	52.0	45.0	42.0	42.0	41.0
	Max	75.8	99.3	50.1	82.0	81.0	79.0	79.0	77.0	74.0	57.0	54.0	51.0
Energy Average:		71.5	Average:		79.1	77.8	75.3	73.7	64.7	57.0	47.6	46.2	44.6
Hourly Summary													
Night	0	64.3	84.9	41.2	77.0	75.0	71.0	68.0	54.0	45.0	42.0	42.0	41.0
	1	64.2	84.8	41.3	76.0	75.0	71.0	68.0	52.0	46.0	43.0	43.0	42.0
	2	65.9	89.9	42.4	78.0	76.0	72.0	69.0	55.0	48.0	44.0	44.0	43.0
	3	69.6	88.4	44.3	80.0	79.0	77.0	75.0	64.0	52.0	46.0	45.0	45.0
	4	74.4	90.1	46.5	82.0	81.0	79.0	79.0	75.0	69.0	52.0	50.0	47.0
	5	75.0	85.8	50.1	81.0	80.0	79.0	79.0	77.0	73.0	57.0	54.0	51.0
	6	75.8	99.3	45.3	82.0	80.0	79.0	78.0	77.0	74.0	57.0	53.0	49.0
Day	7	74.7	87.8	44.3	81.0	80.0	78.0	78.0	76.0	73.0	59.0	55.0	48.0
	8	72.6	87.2	43.7	79.0	78.0	77.0	77.0	74.0	69.0	53.0	50.0	45.0
	9	70.9	85.1	40.5	79.0	78.0	76.0	76.0	72.0	64.0	47.0	44.0	42.0
	10	70.3	87.3	41.4	79.0	77.0	75.0	75.0	71.0	65.0	49.0	47.0	44.0
	11	69.7	90.4	43.4	78.0	76.0	75.0	74.0	70.0	64.0	50.0	48.0	45.0
	12	69.7	86.4	42.8	78.0	77.0	75.0	74.0	70.0	64.0	49.0	47.0	44.0
	13	70.4	88.8	45.1	79.0	77.0	75.0	75.0	71.0	66.0	49.0	48.0	46.0
	14	71.1	84.3	45.6	79.0	78.0	76.0	75.0	72.0	67.0	50.0	48.0	47.0
	15	72.3	90.3	45.1	79.0	78.0	77.0	76.0	73.0	70.0	54.0	51.0	48.0
	16	73.4	95.3	44.6	79.0	78.0	77.0	77.0	74.0	72.0	55.0	51.0	47.0
	17	73.6	86.1	45.8	80.0	79.0	78.0	77.0	75.0	72.0	55.0	52.0	48.0
	18	72.8	88.2	44.8	79.0	79.0	77.0	77.0	74.0	70.0	50.0	48.0	45.0
	19	72.9	94.6	44.7	80.0	79.0	77.0	77.0	74.0	69.0	51.0	49.0	46.0
	20	72.0	89.4	44.5	79.0	78.0	77.0	76.0	73.0	67.0	48.0	47.0	45.0
	21	70.5	84.0	44.1	78.0	78.0	76.0	76.0	72.0	61.0	47.0	46.0	45.0
Night	22	68.8	91.4	41.4	78.0	77.0	75.0	74.0	67.0	54.0	44.0	43.0	42.0
	23	67.4	89.0	40.6	78.0	77.0	75.0	73.0	61.0	52.0	43.0	42.0	41.0

URBAN CROSSROADS

APPENDIX 7.1:

OFF-SITE TRAFFIC NOISE CONTOURS

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Altitude
Road Name: Central Av. | Job Number: 9776
Road Segment: n/o Chino Hills Pkwy.

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	28,614 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	2,861 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	45 mph		
Near/Far Lane Distance:	76 feet		
Site Data		**Vehicle Mix**	
Barrier Height:	**0.0 feet**		
Barrier Type (0-Wall, 1-Berm):	0.0		
Centerline Dist. to Barrier:	60.0 feet		
Centerline Dist. to Observer:	60.0 feet		
Barrier Distance to Observer:	0.0 feet		
Observer Height (Above Pad):	5.0 feet		
Pad Elevation:	0.0 feet		
Road Elevation:	0.0 feet		
Road Grade:	0.0%		
Left View:	-90.0 degrees		
Right View:	90.0 degrees		

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.33	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	-11.59	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:	69.9	67.8	66.2	61.6	69.6	70.1
Medium Trucks:	68.3	66.6	60.9	60.1	68.0	68.2
Heavy Trucks:	71.8	70.2	61.5	64.1	71.8	71.9
Vehicle Noise:	75.0	73.2	68.3	67.0	74.8	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	126	271	583	1,256
CNEL:	131	281	606	1,306

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Altitude
Road Name: Central Av. | Job Number: 9776
Road Segment: s/o Chino Hills Pkwy.

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	26,828 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	2,683 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	45 mph		
Near/Far Lane Distance:	76 feet		
Site Data		**Vehicle Mix**	
Barrier Height:	**0.0 feet**		
Barrier Type (0-Wall, 1-Berm):	0.0		
Centerline Dist. to Barrier:	60.0 feet		
Centerline Dist. to Observer:	60.0 feet		
Barrier Distance to Observer:	0.0 feet		
Observer Height (Above Pad):	5.0 feet		
Pad Elevation:	0.0 feet		
Road Elevation:	0.0 feet		
Road Grade:	0.0%		
Left View:	-90.0 degrees		
Right View:	90.0 degrees		

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.05	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.56	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.87	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	67.6	65.9	61.4	69.3	69.8
Medium Trucks:	68.1	66.4	60.6	59.8	67.7	67.9
Heavy Trucks:	71.5	69.9	61.2	63.8	71.5	71.6
Vehicle Noise:	74.8	73.0	68.0	66.7	74.5	74.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	120	259	558	1,203
CNEL:	125	270	581	1,251

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Altitude
Road Name: Central Av. | Job Number: 9776
Road Segment: s/o El Prado Rd.

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	31,236 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	3,124 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	45 mph		
Near/Far Lane Distance:	76 feet		
Site Data		**Vehicle Mix**	
Barrier Height:	**0.0 feet**		
Barrier Type (0-Wall, 1-Berm):	0.0		
Centerline Dist. to Barrier:	60.0 feet		
Centerline Dist. to Observer:	60.0 feet		
Barrier Distance to Observer:	0.0 feet		
Observer Height (Above Pad):	5.0 feet		
Pad Elevation:	0.0 feet		
Road Elevation:	0.0 feet		
Road Grade:	0.0%		
Left View:	-90.0 degrees		
Right View:	90.0 degrees		

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.71	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.90	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.21	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	68.2	66.6	62.0	69.9	70.4
Medium Trucks:	68.7	67.0	61.3	60.5	68.4	68.6
Heavy Trucks:	72.2	70.6	61.9	64.5	72.1	72.2
Vehicle Noise:	75.4	73.6	68.7	67.4	75.2	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	133	287	618	1,332
CNEL:	138	298	643	1,385

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: n/o SR-60

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	35,044 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	3,504 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	45 mph		
Near/Far Lane Distance:	154 feet		
Site Data		**Vehicle Mix**	
Barrier Height:	**0.0 feet**		
Barrier Type (0-Wall, 1-Berm):	0.0		
Centerline Dist. to Barrier:	84.0 feet		
Centerline Dist. to Observer:	84.0 feet		
Barrier Distance to Observer:	0.0 feet		
Observer Height (Above Pad):	5.0 feet		
Pad Elevation:	0.0 feet		
Road Elevation:	0.0 feet		
Road Grade:	0.0%		
Left View:	-90.0 degrees		
Right View:	90.0 degrees		

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.21	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-9.40	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.71	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.9	70.8	69.1	64.6	72.5	73.0
Medium Trucks:	71.3	69.6	63.9	63.1	71.0	71.2
Heavy Trucks:	74.8	73.2	64.5	67.1	74.7	74.8
Vehicle Noise:	78.0	76.2	71.3	70.0	77.8	78.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	278	598	1,289	2,776
CNEL:	289	622	1,340	2,887

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o SR-60

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,663	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,566	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.29	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-9.33	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.63	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.0	70.9	69.2	64.7	72.6	73.1
Medium Trucks:	71.4	69.7	63.9	63.1	71.0	71.3
Heavy Trucks:	74.9	73.2	64.5	67.1	74.8	74.9
Vehicle Noise:	78.1	76.3	71.3	70.1	77.9	78.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	281	605	1,304	2,809
CNEL:	292	629	1,356	2,921

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Walnut St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,841	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,084	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.66	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-9.96	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.26	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.3	70.2	68.6	64.0	72.0	72.5
Medium Trucks:	70.8	69.1	63.3	62.5	70.4	70.6
Heavy Trucks:	74.3	72.6	63.9	66.5	74.2	74.3
Vehicle Noise:	77.5	75.7	70.7	69.4	77.2	77.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	255	549	1,183	2,549
CNEL:	265	571	1,230	2,651

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Riverside Dr.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,240	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,924	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.56	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-11.06	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.37	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.6	72.5	70.8	66.3	74.2	74.7
Medium Trucks:	72.6	70.9	65.2	64.4	72.3	72.5
Heavy Trucks:	75.3	73.6	64.9	67.5	75.2	75.3
Vehicle Noise:	79.1	77.3	72.6	71.0	78.8	79.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	325	701	1,511	3,255
CNEL:	339	731	1,576	3,395

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Chino Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,485	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,149	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.88	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.74	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.05	2.47	-1.20	-5.21	0.000	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	72.8	71.1	66.6	74.5	75.0
Medium Trucks:	72.9	71.2	65.5	64.7	72.6	72.8
Heavy Trucks:	75.6	74.0	65.3	67.9	75.5	75.7
Vehicle Noise:	79.4	77.6	73.0	71.3	79.1	79.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	342	737	1,587	3,419
CNEL:	357	768	1,655	3,566

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Euclid Av.
Road Segment: s/o Schaefer Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,031	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,003	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.67	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.94	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.25	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	72.6	70.9	66.4	74.3	74.8
Medium Trucks:	72.7	71.0	65.3	64.5	72.4	72.6
Heavy Trucks:	75.4	73.8	65.1	67.7	75.3	75.4
Vehicle Noise:	79.2	77.4	72.8	71.1	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:	346	745	1,604	3,456

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Euclid Av.
Road Segment: s/o Edison Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,892	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,689	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.19	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-11.42	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.73	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.2	72.1	70.4	65.9	73.8	74.3
Medium Trucks:	72.3	70.6	64.8	64.0	71.9	72.1
Heavy Trucks:	74.9	73.3	64.6	67.2	74.9	75.0
Vehicle Noise:	78.7	76.9	72.3	70.7	78.5	78.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	308	663	1,429	3,078
CNEL:	321	692	1,490	3,211

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Euclid Av.
Road Segment: s/o Eucalyptus Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,098	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,810	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.38	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	-12.54	2.47	-1.20	-5.21	0.000	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	72.3	70.6	66.1	74.0	74.5
Medium Trucks:	72.4	70.7	65.0	64.2	72.1	72.3
Heavy Trucks:	75.1	73.5	64.8	67.4	75.0	75.2
Vehicle Noise:	78.9	77.1	72.5	70.8	78.7	78.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	317	683	1,471	3,169
CNEL:	331	712	1,534	3,306

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Euclid Av.
Road Segment: s/o Merrill Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,249	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,725	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.25	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-11.37	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.67	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.3	72.2	70.5	66.0	73.9	74.4
Medium Trucks:	72.3	70.6	64.8	64.1	72.0	72.2
Heavy Trucks:	75.0	73.3	64.6	67.2	74.9	75.0
Vehicle Noise:	78.8	76.9	72.3	70.7	78.5	78.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	311	669	1,441	3,105
CNEL:	324	698	1,503	3,239

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Kimball Av.

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	20,258 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	2,026 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	55 mph		
Near/Far Lane Distance:	154 feet		
Site Data		**Vehicle Mix**	
Barrier Height:	**0.0 feet**		
Barrier Type (0-Wall, 1-Berm):	0.0		
Centerline Dist. to Barrier:	84.0 feet		
Centerline Dist. to Observer:	84.0 feet		
Barrier Distance to Observer:	0.0 feet		
Observer Height (Above Pad):	5.0 feet		
Pad Elevation:	0.0 feet		
Road Elevation:	0.0 feet		
Road Grade:	0.0%		
Left View:	-90.0 degrees		
Right View:	90.0 degrees		

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.04	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-12.65	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-13.96	2.47	-1.20	*-5.21*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.0	70.9	69.2	64.7	72.6	73.1
Medium Trucks:	71.0	69.3	63.6	62.8	70.7	70.9
Heavy Trucks:	73.7	72.1	63.3	66.0	73.6	73.7
Vehicle Noise:	77.5	75.7	71.1	69.4	77.2	77.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	255	549	1,183	2,548
CNEL:	266	573	1,234	2,658

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Bickmore Av.

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	17,382 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	1,738 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	55 mph		
Near/Far Lane Distance:	154 feet		
Site Data		**Vehicle Mix**	
Barrier Height:	**0.0 feet**		
Barrier Type (0-Wall, 1-Berm):	0.0		
Centerline Dist. to Barrier:	84.0 feet		
Centerline Dist. to Observer:	84.0 feet		
Barrier Distance to Observer:	0.0 feet		
Observer Height (Above Pad):	5.0 feet		
Pad Elevation:	0.0 feet		
Road Elevation:	0.0 feet		
Road Grade:	0.0%		
Left View:	-90.0 degrees		
Right View:	90.0 degrees		

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.70	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-13.32	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-14.63	2.47	-1.20	*-5.21*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.3	70.2	68.5	64.0	71.9	72.4
Medium Trucks:	70.4	68.7	62.9	62.1	70.0	70.2
Heavy Trucks:	73.0	71.4	62.7	65.3	73.0	73.1
Vehicle Noise:	76.8	75.0	70.4	68.8	76.6	76.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	230	496	1,068	2,301
CNEL:	240	517	1,114	2,400

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Pine Av.

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	34,368 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	3,437 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	55 mph		
Near/Far Lane Distance:	154 feet		
Site Data		**Vehicle Mix**	
Barrier Height:	**0.0 feet**		
Barrier Type (0-Wall, 1-Berm):	0.0		
Centerline Dist. to Barrier:	84.0 feet		
Centerline Dist. to Observer:	84.0 feet		
Barrier Distance to Observer:	0.0 feet		
Observer Height (Above Pad):	5.0 feet		
Pad Elevation:	0.0 feet		
Road Elevation:	0.0 feet		
Road Grade:	0.0%		
Left View:	-90.0 degrees		
Right View:	90.0 degrees		

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.26	2.42	-1.20	*-4.75*	0.000	0.000
Medium Trucks:	82.40	-10.36	2.47	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-11.67	2.47	-1.20	*-5.21*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	75.3	73.2	71.5	67.0	74.9	75.4
Medium Trucks:	73.3	71.6	65.9	65.1	73.0	73.2
Heavy Trucks:	76.0	74.3	65.6	68.2	75.9	76.0
Vehicle Noise:	79.8	78.0	73.3	71.7	79.5	79.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	362	781	1,683	3,625
CNEL:	378	815	1,755	3,781

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Altitude
Road Name: Flight Av. | Job Number: 9776
Road Segment: n/o Kimball Av.

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	2,494 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	249 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	40 mph		
Near/Far Lane Distance:	12 feet		
Site Data		**Vehicle Mix**	
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		

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-7.75	3.26	-1.20	*-4.49*	0.000	0.000
Medium Trucks:	77.72	-20.37	3.33	-1.20	*-4.86*	0.000	0.000
Heavy Trucks:	82.99	-21.67	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:	60.8	58.7	57.1	52.5	60.4	61.0
Medium Trucks:	59.5	57.8	52.0	51.2	59.1	59.3
Heavy Trucks:	63.4	61.8	53.1	55.7	63.4	63.5
Vehicle Noise:	66.3	64.6	59.4	58.3	66.1	66.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	36	77	165
CNEL:	17	37	80	172

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Altitude
Road Name: Hellman Av. | Job Number: 9776
Road Segment: s/o Kimball Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,192 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,419 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-0.71	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-13.33	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-14.64	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:	67.6	65.5	63.8	59.3	67.2	67.7
Medium Trucks:	66.0	64.3	58.5	57.7	65.6	65.8
Heavy Trucks:	69.5	67.8	59.1	61.7	69.4	69.5
Vehicle Noise:	72.7	70.9	65.9	64.6	72.4	72.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	154	331	713
CNEL:	74	160	344	741

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Altitude
Road Name: Edison Av. | Job Number: 9776
Road Segment: w/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,363 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,736 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.16	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-12.45	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-13.76	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	65.7	64.0	59.5	67.4	67.9
Medium Trucks:	66.2	64.5	58.7	57.9	65.8	66.0
Heavy Trucks:	69.7	68.0	59.3	61.9	69.6	69.7
Vehicle Noise:	72.9	71.1	66.1	64.9	72.6	72.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	194	418	900
CNEL:	94	202	435	936

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Altitude
Road Name: Eucalyptus Av. | Job Number: 9776
Road Segment: w/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,535 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	454 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.16	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-17.77	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-19.08	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.4	59.3	57.7	53.1	61.1	61.6
Medium Trucks:	60.1	58.4	52.6	51.8	59.7	59.9
Heavy Trucks:	64.0	62.4	53.7	56.3	64.0	64.1
Vehicle Noise:	66.9	65.1	60.0	58.9	66.7	67.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	57	123	266
CNEL:	28	59	128	276

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Altitude
Road Name: Chino Hills Pkwy. | Job Number: 9776
Road Segment: w/o SR-71

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	42,469 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,247 vehicles
Vehicle Speed:	40 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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:	66.51	4.56	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	77.72	-8.06	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-9.36	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	68.8	67.1	62.6	70.5	71.0
Medium Trucks:	69.5	67.8	62.0	61.2	69.1	69.4
Heavy Trucks:	73.5	71.8	63.1	65.7	73.4	73.5
Vehicle Noise:	76.4	74.6	69.4	68.4	76.2	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	126	272	586	1,262
CNEL:	131	282	608	1,310

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Chino Hills Pkwy.
Road Segment: e/o SR-71
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,753	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,775	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.20	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-10.41	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.72	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	68.4	66.7	62.2	70.1	70.6
Medium Trucks:	68.9	67.2	61.4	60.6	68.5	68.7
Heavy Trucks:	72.4	70.7	62.0	64.6	72.3	72.4
Vehicle Noise:	75.6	73.8	68.8	67.6	75.4	75.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	111	240	517	1,115
CNEL:	116	250	538	1,159

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Chino Hills Pkwy.
Road Segment: e/o Ramona Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,152	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,615	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.94	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-10.67	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.98	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	68.1	66.5	61.9	69.8	70.3
Medium Trucks:	68.6	66.9	61.2	60.4	68.3	68.5
Heavy Trucks:	72.1	70.5	61.8	64.4	72.0	72.1
Vehicle Noise:	75.3	73.5	68.6	67.3	75.1	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	231	497	1,071
CNEL:	111	240	517	1,114

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Chino Hills Pkwy.
Road Segment: e/o Monte Vista Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,183	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,118	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.03	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-11.59	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-12.90	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	66.5	64.9	60.3	68.3	68.8
Medium Trucks:	67.0	65.3	59.6	58.8	66.7	66.9
Heavy Trucks:	70.5	68.9	60.2	62.8	70.4	70.6
Vehicle Noise:	73.7	71.9	67.0	65.7	73.5	73.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	221	477	1,028
CNEL:	107	230	496	1,069

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: El Prado Rd.
Road Segment: e/o Central Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,101	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.93	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	79.45	-10.68	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.99	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	68.4	66.7	62.2	70.1	70.6
Medium Trucks:	68.9	67.2	61.4	60.6	68.5	68.7
Heavy Trucks:	72.4	70.7	62.0	64.6	72.3	72.4
Vehicle Noise:	75.6	73.8	68.8	67.6	75.4	75.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	465	1,001
CNEL:	104	224	483	1,041

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Kimball Av.
Road Segment: e/o El Prado Rd.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,448 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,945 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	0.20	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.42	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.72	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	68.4	66.7	62.2	70.1	70.6
Medium Trucks:	68.7	67.0	61.2	60.4	68.3	68.6
Heavy Trucks:	71.8	70.1	61.4	64.0	71.7	71.8
Vehicle Noise:	75.3	73.5	68.7	67.2	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	991

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Kimball Av.
Road Segment: e/o Mountain Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,458 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,746 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-0.27	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.89	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.19	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	67.9	66.2	61.7	69.6	70.1
Medium Trucks:	68.2	66.5	60.8	60.0	67.9	68.1
Heavy Trucks:	71.3	69.6	60.9	63.5	71.2	71.3
Vehicle Noise:	74.8	73.0	68.2	66.8	74.6	74.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	191	411	886
CNEL:	92	199	428	922

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Kimball Av.
Road Segment: e/o San Antonio Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,267 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,727 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.32	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.93	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.24	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	67.9	66.2	61.7	69.6	70.1
Medium Trucks:	68.2	66.5	60.7	59.9	67.8	68.0
Heavy Trucks:	71.2	69.6	60.9	63.5	71.2	71.3
Vehicle Noise:	74.7	72.9	68.2	66.7	74.5	74.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	189	408	879
CNEL:	92	197	425	916

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Kimball Av.
Road Segment: e/o Fern Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,064 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,806 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-0.12	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.74	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.04	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	68.1	66.4	61.9	69.8	70.3
Medium Trucks:	68.4	66.7	60.9	60.1	68.0	68.2
Heavy Trucks:	71.4	69.8	61.1	63.7	71.4	71.5
Vehicle Noise:	74.9	73.1	68.4	66.9	74.7	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	195	420	906
CNEL:	94	203	438	943

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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: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,134 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,813 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-0.11	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-12.72	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.03	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	67.8	66.1	61.6	69.5	70.0
Medium Trucks:	68.1	66.4	60.7	59.9	67.8	68.0
Heavy Trucks:	71.2	69.5	60.8	63.4	71.1	71.2
Vehicle Noise:	74.7	72.9	68.1	66.7	74.5	74.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	209	451	971
CNEL:	101	218	469	1,011

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: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,015 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,902 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-12.51	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.82	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	68.0	66.4	61.8	69.7	70.2
Medium Trucks:	68.3	66.6	60.9	60.1	68.0	68.2
Heavy Trucks:	71.4	69.7	61.0	63.6	71.3	71.4
Vehicle Noise:	74.9	73.1	68.3	66.9	74.7	74.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	465	1,002
CNEL:	104	225	484	1,044

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: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,466 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,847 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-0.03	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-12.64	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.95	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	67.9	66.2	61.7	69.6	70.1
Medium Trucks:	68.2	66.5	60.7	59.9	67.8	68.1
Heavy Trucks:	71.3	69.6	60.9	63.5	71.2	71.3
Vehicle Noise:	74.8	73.0	68.2	66.7	74.5	74.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	212	456	983
CNEL:	102	221	475	1,023

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: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,361 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,636 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-0.55	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.17	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.47	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	67.4	65.7	61.2	69.1	69.6
Medium Trucks:	67.7	66.0	60.2	59.4	67.3	67.5
Heavy Trucks:	70.7	69.1	60.4	63.0	70.7	70.8
Vehicle Noise:	74.2	72.4	67.7	66.2	74.0	74.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	195	421	906
CNEL:	94	203	438	944

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Main St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,843	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,184	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-1.96	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-14.57	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.88	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	66.0	64.3	59.8	67.7	68.2
Medium Trucks:	66.3	64.6	58.8	58.0	65.9	66.1
Heavy Trucks:	69.3	67.7	59.0	61.6	69.3	69.4
Vehicle Noise:	72.8	71.0	66.3	64.8	72.6	72.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	339	731
CNEL:	76	164	353	761

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Flight Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,530	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,453	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-1.07	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	-14.99	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:	68.9	66.9	65.2	60.7	68.6	69.1
Medium Trucks:	67.2	65.5	59.7	58.9	66.8	67.0
Heavy Trucks:	70.2	68.6	59.9	62.5	70.2	70.3
Vehicle Noise:	73.7	71.9	67.2	65.7	73.5	73.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	180	389	838
CNEL:	87	188	405	872

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Meadow Valley Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,192	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,419	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-1.17	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.78	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.09	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:	68.8	66.7	65.1	60.6	68.5	69.0
Medium Trucks:	67.1	65.4	59.6	58.8	66.7	66.9
Heavy Trucks:	70.1	68.5	59.8	62.4	70.1	70.2
Vehicle Noise:	73.6	71.8	67.1	65.6	73.4	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	178	383	824
CNEL:	86	185	399	859

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Altitude
Road Name: Pine Av. | Job Number: 9776
Road Segment: e/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,806	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,481	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.71	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.90	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-12.21	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	67.2	65.6	61.0	68.9	69.4
Medium Trucks:	67.7	66.0	60.3	59.5	67.4	67.6
Heavy Trucks:	71.2	69.6	60.9	63.5	71.1	71.2
Vehicle Noise:	74.4	72.6	67.7	66.4	74.2	74.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	246	530	1,142
CNEL:	119	256	551	1,187

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Central Av. | Job Number: 9776
Road Segment: n/o Chino Hills Pkwy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,658	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,866	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.31%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.69%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.34	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	-11.59	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:	69.9	67.8	66.2	61.7	69.6	70.1
Medium Trucks:	68.3	66.6	60.9	60.1	68.0	68.2
Heavy Trucks:	71.8	70.2	61.5	64.1	71.8	71.9
Vehicle Noise:	75.0	73.2	68.3	67.0	74.8	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	126	271	583	1,256
CNEL:	131	281	606	1,307

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Central Av. | Job Number: 9776
Road Segment: s/o Chino Hills Pkwy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,040	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,704	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:	74.1%	12.6%	13.3%	91.23%
Medium Trucks:	81.2%	5.4%	13.4%	4.98%
Heavy Trucks:	82.1%	2.8%	15.1%	3.79%

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	2.08	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.54	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.74	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:	69.7	67.6	65.9	61.4	69.3	69.8
Medium Trucks:	68.1	66.4	60.6	59.8	67.7	67.9
Heavy Trucks:	71.7	70.0	61.3	63.9	71.6	71.7
Vehicle Noise:	74.8	73.0	68.1	66.8	74.6	74.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	122	262	565	1,218
CNEL:	127	273	588	1,266

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Central Av. | Job Number: 9776
Road Segment: s/o El Prado Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,439	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,144	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:	74.1%	12.6%	13.3%	91.17%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.83%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.74	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.87	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.04	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	68.2	66.6	62.0	70.0	70.5
Medium Trucks:	68.7	67.0	61.3	60.5	68.4	68.6
Heavy Trucks:	72.4	70.7	62.0	64.6	72.3	72.4
Vehicle Noise:	75.5	73.7	68.7	67.5	75.3	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	135	291	627	1,352
CNEL:	141	303	652	1,405

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: n/o SR-60

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,088	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,509	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.31%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.22	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-9.40	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.71	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.9	70.8	69.1	64.6	72.5	73.0
Medium Trucks:	71.3	69.6	63.9	63.1	71.0	71.2
Heavy Trucks:	74.8	73.2	64.5	67.1	74.7	74.8
Vehicle Noise:	78.0	76.2	71.3	70.0	77.8	78.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	278	598	1,289	2,777
CNEL:	289	622	1,340	2,887

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o SR-60

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,978	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,598	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	90.91%
Medium Trucks:	81.2%	5.4%	13.4%	5.04%
Heavy Trucks:	82.1%	2.8%	15.1%	4.06%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.31	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-9.26	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.20	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:	73.0	70.9	69.2	64.7	72.6	73.1
Medium Trucks:	71.5	69.8	64.0	63.2	71.1	71.3
Heavy Trucks:	75.3	73.7	65.0	67.6	75.2	75.4
Vehicle Noise:	78.3	76.5	71.5	70.3	78.1	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	291	628	1,353	2,915
CNEL:	303	652	1,405	3,028

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Walnut St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,200	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,120	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	90.86%
Medium Trucks:	81.2%	5.4%	13.4%	5.04%
Heavy Trucks:	82.1%	2.8%	15.1%	4.11%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.69	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-9.88	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.76	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.4	70.3	68.6	64.1	72.0	72.5
Medium Trucks:	70.8	69.1	63.4	62.6	70.5	70.7
Heavy Trucks:	74.8	73.1	64.4	67.0	74.7	74.8
Vehicle Noise:	77.7	75.9	70.9	69.7	77.5	77.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	266	573	1,235	2,662
CNEL:	276	596	1,283	2,764

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Riverside Dr.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,642	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,964	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:	74.1%	12.6%	13.3%	90.85%
Medium Trucks:	81.2%	5.4%	13.4%	5.03%
Heavy Trucks:	82.1%	2.8%	15.1%	4.12%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium 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	1.59	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.97	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.84	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.6	72.5	70.8	66.3	74.2	74.7
Medium Trucks:	72.7	71.0	65.2	64.4	72.3	72.6
Heavy Trucks:	75.8	74.2	65.5	68.1	75.7	75.9
Vehicle Noise:	79.3	77.5	72.8	71.3	79.1	79.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	339	731	1,574	3,392
CNEL:	353	761	1,640	3,533

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Chino Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,931	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,193	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:	74.1%	12.6%	13.3%	90.89%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	4.09%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.92	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.66	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.55	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:	74.9	72.8	71.2	66.6	74.5	75.0
Medium Trucks:	73.0	71.3	65.6	64.8	72.7	72.9
Heavy Trucks:	76.1	74.5	65.8	68.4	76.0	76.1
Vehicle Noise:	79.6	77.8	73.1	71.6	79.4	79.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	355	766	1,650	3,554
CNEL:	370	798	1,719	3,703

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Schaefer Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,521	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,052	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:	74.1%	12.6%	13.3%	90.89%
Medium Trucks:	81.2%	5.4%	13.4%	5.01%
Heavy Trucks:	82.1%	2.8%	15.1%	4.10%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.72	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	-11.74	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:	74.7	72.6	71.0	66.4	74.3	74.9
Medium Trucks:	72.8	71.1	65.4	64.6	72.5	72.7
Heavy Trucks:	75.9	74.3	65.6	68.2	75.9	76.0
Vehicle Noise:	79.4	77.6	72.9	71.4	79.2	79.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	345	744	1,602	3,451
CNEL:	360	775	1,669	3,596

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Edison Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,484	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,748	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:	74.1%	12.6%	13.3%	90.87%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	4.13%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.27	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-11.33	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.16	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:	74.3	72.2	70.5	66.0	73.9	74.4
Medium Trucks:	72.3	70.6	64.9	64.1	72.0	72.2
Heavy Trucks:	75.5	73.9	65.2	67.8	75.4	75.5
Vehicle Noise:	79.0	77.2	72.5	71.0	78.8	79.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	322	695	1,497	3,224
CNEL:	336	724	1,559	3,359

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Eucalyptus Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,792	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,879	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:	74.1%	12.6%	13.3%	90.92%
Medium Trucks:	81.2%	5.4%	13.4%	4.98%
Heavy Trucks:	82.1%	2.8%	15.1%	4.10%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.47	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-11.14	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:	74.5	72.4	70.7	66.2	74.1	74.6
Medium Trucks:	72.5	70.8	65.1	64.3	72.2	72.4
Heavy Trucks:	75.7	74.0	65.3	67.9	75.6	75.7
Vehicle Noise:	79.2	77.4	72.6	71.1	78.9	79.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	332	714	1,539	3,316
CNEL:	346	744	1,604	3,455

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Merrill Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,943	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,794	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:	74.1%	12.6%	13.3%	90.91%
Medium Trucks:	81.2%	5.4%	13.4%	4.98%
Heavy Trucks:	82.1%	2.8%	15.1%	4.11%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium 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	1.34	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-11.27	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.11	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:	74.3	72.2	70.6	66.0	74.0	74.5
Medium Trucks:	72.4	70.7	64.9	64.1	72.0	72.3
Heavy Trucks:	75.6	73.9	65.2	67.8	75.5	75.6
Vehicle Noise:	79.1	77.3	72.5	71.0	78.8	79.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	325	701	1,510	3,254
CNEL:	339	730	1,573	3,390

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Kimball Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,315	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,032	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:	74.1%	12.6%	13.3%	91.04%
Medium Trucks:	81.2%	5.4%	13.4%	5.04%
Heavy Trucks:	82.1%	2.8%	15.1%	3.92%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.04	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-12.61	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.70	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:	73.0	70.9	69.2	64.7	72.6	73.1
Medium Trucks:	71.1	69.4	63.6	62.8	70.7	70.9
Heavy Trucks:	74.0	72.3	63.6	66.2	73.9	74.0
Vehicle Noise:	77.6	75.8	71.1	69.6	77.4	77.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	260	560	1,206	2,598
CNEL:	271	583	1,257	2,708

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Bickmore Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,782	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,778	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:	74.1%	12.6%	13.3%	90.97%
Medium Trucks:	81.2%	5.4%	13.4%	4.98%
Heavy Trucks:	82.1%	2.8%	15.1%	4.06%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium 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	-0.62	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-13.24	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-14.13	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.4	70.3	68.6	64.1	72.0	72.5
Medium Trucks:	70.4	68.7	63.0	62.2	70.1	70.3
Heavy Trucks:	73.5	71.9	63.2	65.8	73.5	73.6
Vehicle Noise:	77.1	75.3	70.5	69.0	76.8	77.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	240	517	1,113	2,398
CNEL:	250	538	1,160	2,498

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Pine Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,676	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,468	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:	74.1%	12.6%	13.3%	91.16%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.85%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.29	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.33	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.46	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	75.3	73.2	71.5	67.0	74.9	75.4
Medium Trucks:	73.3	71.7	65.9	65.1	73.0	73.2
Heavy Trucks:	76.2	74.6	65.9	68.5	76.1	76.2
Vehicle Noise:	79.9	78.1	73.4	71.8	79.6	79.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	369	794	1,711	3,686
CNEL:	384	828	1,784	3,843

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Flight Av. | Job Number: 9776
Road Segment: n/o Kimball Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,586	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	259	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:	74.1%	12.6%	13.3%	90.87%
Medium Trucks:	81.2%	5.4%	13.4%	4.94%
Heavy Trucks:	82.1%	2.8%	15.1%	4.19%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-7.62	3.26	-1.20	-4.49	0.000	0.000
Medium Trucks:	77.72	-20.26	3.33	-1.20	-4.86	0.000	0.000
Heavy Trucks:	82.99	-20.98	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:	61.0	58.9	57.2	52.7	60.6	61.1
Medium Trucks:	59.6	57.9	52.1	51.3	59.2	59.4
Heavy Trucks:	64.1	62.5	53.8	56.4	64.1	64.2
Vehicle Noise:	66.8	65.0	59.7	58.8	66.6	66.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	38	82	177
CNEL:	18	40	85	183

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Hellman Av. | Job Number: 9776
Road Segment: s/o Kimball Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,265 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,426 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:	74.1%	12.6%	13.3%	91.34%
Medium Trucks:	81.2%	5.4%	13.4%	4.97%
Heavy Trucks:	82.1%	2.8%	15.1%	3.68%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-0.69	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-13.33	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-14.64	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:	67.6	65.5	63.8	59.3	67.2	67.7
Medium Trucks:	66.0	64.3	58.5	57.7	65.6	65.8
Heavy Trucks:	69.5	67.8	59.1	61.7	69.4	69.5
Vehicle Noise:	72.7	70.9	65.9	64.7	72.4	72.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	154	331	713
CNEL:	74	160	344	742

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Edison Av. | Job Number: 9776
Road Segment: w/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,451 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,745 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:	74.1%	12.6%	13.3%	91.34%
Medium Trucks:	81.2%	5.4%	13.4%	4.97%
Heavy Trucks:	82.1%	2.8%	15.1%	3.68%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	0.19	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-12.45	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-13.76	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	65.7	64.0	59.5	67.4	67.9
Medium Trucks:	66.2	64.5	58.7	57.9	65.8	66.0
Heavy Trucks:	69.7	68.0	59.3	61.9	69.6	69.7
Vehicle Noise:	72.9	71.1	66.1	64.9	72.7	72.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	194	418	901
CNEL:	94	202	435	937

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Eucalyptus Av. | Job Number: 9776
Road Segment: w/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,593 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	459 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.41%
Medium Trucks:	81.2%	5.4%	13.4%	4.94%
Heavy Trucks:	82.1%	2.8%	15.1%	3.65%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.09	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-17.77	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-19.08	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.5	59.4	57.7	53.2	61.1	61.6
Medium Trucks:	60.1	58.4	52.6	51.8	59.7	59.9
Heavy Trucks:	64.0	62.4	53.7	56.3	64.0	64.1
Vehicle Noise:	66.9	65.2	60.0	58.9	66.7	67.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	57	124	266
CNEL:	28	60	128	276

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Chino Hills Pkwy. | Job Number: 9776
Road Segment: w/o SR-71

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	42,498 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,250 vehicles
Vehicle Speed:	40 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:	74.1%	12.6%	13.3%	91.31%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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:	66.51	4.56	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	77.72	-8.06	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-9.36	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	68.8	67.1	62.6	70.5	71.0
Medium Trucks:	69.5	67.8	62.0	61.2	69.1	69.4
Heavy Trucks:	73.5	71.8	63.1	65.7	73.4	73.5
Vehicle Noise:	76.4	74.6	69.4	68.4	76.2	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	126	272	586	1,262
CNEL:	131	282	608	1,310

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Chino Hills Pkwy. | Job Number: 9776
Road Segment: e/o SR-71

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,892 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,789 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:	74.1%	12.6%	13.3%	91.21%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.79%

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:	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	2.22	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-10.40	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.59	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	68.4	66.7	62.2	70.1	70.6
Medium Trucks:	68.9	67.2	61.4	60.6	68.5	68.8
Heavy Trucks:	72.5	70.9	62.1	64.7	72.4	72.5
Vehicle Noise:	75.7	73.9	68.9	67.6	75.4	75.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	243	523	1,127
CNEL:	117	252	544	1,172

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Chino Hills Pkwy. | Job Number: 9776
Road Segment: e/o Ramona Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,320 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,632 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:	74.1%	12.6%	13.3%	91.22%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.79%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.97	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-10.65	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.84	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	68.1	66.5	61.9	69.9	70.4
Medium Trucks:	68.6	66.9	61.2	60.4	68.3	68.5
Heavy Trucks:	72.2	70.6	61.9	64.5	72.2	72.3
Vehicle Noise:	75.4	73.6	68.6	67.4	75.2	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	234	503	1,084
CNEL:	113	243	523	1,127

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Chino Hills Pkwy. | Job Number: 9776
Road Segment: e/o Monte Vista Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,351 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,135 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:	74.1%	12.6%	13.3%	91.20%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.82%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.06	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-11.56	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-12.73	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	66.6	64.9	60.4	68.3	68.8
Medium Trucks:	67.1	65.4	59.6	58.8	66.7	66.9
Heavy Trucks:	70.7	69.0	60.3	62.9	70.6	70.7
Vehicle Noise:	73.8	72.0	67.1	65.8	73.6	73.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	104	225	484	1,043
CNEL:	108	234	503	1,085

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: El Prado Rd. | Job Number: 9776
Road Segment: e/o Central Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,516 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,652 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:	74.1%	12.6%	13.3%	91.08%
Medium Trucks:	81.2%	5.4%	13.4%	4.98%
Heavy Trucks:	82.1%	2.8%	15.1%	3.94%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.99	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	79.45	-10.63	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.65	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	68.4	66.8	62.2	70.2	70.7
Medium Trucks:	68.9	67.2	61.5	60.7	68.6	68.8
Heavy Trucks:	72.7	71.1	62.4	65.0	72.6	72.7
Vehicle Noise:	75.8	74.0	69.0	67.8	75.6	75.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	222	479	1,032
CNEL:	107	231	498	1,072

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o El Prado Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,863 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,986 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:	74.1%	12.6%	13.3%	91.01%
Medium Trucks:	81.2%	5.4%	13.4%	4.98%
Heavy Trucks:	82.1%	2.8%	15.1%	4.02%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.28	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.35	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.28	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	68.5	66.8	62.3	70.2	70.7
Medium Trucks:	68.8	67.1	61.3	60.5	68.4	68.6
Heavy Trucks:	72.2	70.6	61.9	64.5	72.1	72.2
Vehicle Noise:	75.5	73.7	68.8	67.5	75.3	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	213	459	989
CNEL:	103	222	478	1,029

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Mountain Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,873 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,787 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:	74.1%	12.6%	13.3%	90.98%
Medium Trucks:	81.2%	5.4%	13.4%	4.97%
Heavy Trucks:	82.1%	2.8%	15.1%	4.05%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.18	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.81	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.70	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:	70.1	68.0	66.3	61.8	69.7	70.2
Medium Trucks:	68.3	66.6	60.8	60.0	67.9	68.2
Heavy Trucks:	71.8	70.1	61.4	64.0	71.7	71.8
Vehicle Noise:	75.1	73.3	68.4	67.0	74.8	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	199	429	924
CNEL:	96	207	446	962

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o San Antonio Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,682 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,768 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:	74.1%	12.6%	13.3%	90.97%
Medium Trucks:	81.2%	5.4%	13.4%	4.97%
Heavy Trucks:	82.1%	2.8%	15.1%	4.05%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.23	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.85	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.74	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	68.0	66.3	61.8	69.7	70.2
Medium Trucks:	68.3	66.6	60.8	60.0	67.9	68.1
Heavy Trucks:	71.7	70.1	61.4	64.0	71.7	71.8
Vehicle Noise:	75.0	73.2	68.3	67.0	74.8	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	426	918
CNEL:	96	206	443	955

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Fern Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,479 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,848 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:	74.1%	12.6%	13.3%	90.99%
Medium Trucks:	81.2%	5.4%	13.4%	4.97%
Heavy Trucks:	82.1%	2.8%	15.1%	4.04%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.04	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.66	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.57	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	68.1	66.5	61.9	69.9	70.4
Medium Trucks:	68.5	66.8	61.0	60.2	68.1	68.3
Heavy Trucks:	71.9	70.3	61.6	64.2	71.8	72.0
Vehicle Noise:	75.2	73.4	68.5	67.2	75.0	75.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	94	203	438	944
CNEL:	98	212	456	982

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,280 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,928 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:	74.1%	12.6%	13.3%	90.26%
Medium Trucks:	81.2%	5.4%	13.4%	4.97%
Heavy Trucks:	82.1%	2.8%	15.1%	4.77%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	0.11	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	-12.66	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	68.0	66.4	61.8	69.7	70.3
Medium Trucks:	68.4	66.7	60.9	60.1	68.0	68.2
Heavy Trucks:	72.6	70.9	62.2	64.8	72.5	72.6
Vehicle Noise:	75.5	73.7	68.6	67.5	75.2	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	236	509	1,097
CNEL:	114	245	529	1,139

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: w/o Rincon Meadows Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,253 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,925 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:	74.1%	12.6%	13.3%	91.31%
Medium Trucks:	81.2%	5.4%	13.4%	4.95%
Heavy Trucks:	82.1%	2.8%	15.1%	3.74%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-12.50	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.72	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	68.1	66.4	61.9	69.8	70.3
Medium Trucks:	68.3	66.6	60.9	60.1	68.0	68.2
Heavy Trucks:	71.5	69.8	61.1	63.7	71.4	71.5
Vehicle Noise:	75.0	73.2	68.4	66.9	74.7	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	218	470	1,012
CNEL:	105	227	489	1,054

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Rincon Meadows Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,689 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,869 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	4.96%
Heavy Trucks:	82.1%	2.8%	15.1%	3.74%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	0.03	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-12.63	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.85	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	67.9	66.3	61.7	69.7	70.2
Medium Trucks:	68.2	66.5	60.8	60.0	67.9	68.1
Heavy Trucks:	71.4	69.7	61.0	63.6	71.3	71.4
Vehicle Noise:	74.8	73.0	68.3	66.8	74.6	74.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	214	461	993
CNEL:	103	223	480	1,034

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Mill Creek Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,570 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,657 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:	74.1%	12.6%	13.3%	91.29%
Medium Trucks:	81.2%	5.4%	13.4%	4.96%
Heavy Trucks:	82.1%	2.8%	15.1%	3.75%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-0.50	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	-14.36	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	67.4	65.8	61.2	69.1	69.6
Medium Trucks:	67.7	66.0	60.2	59.4	67.3	67.6
Heavy Trucks:	70.9	69.2	60.5	63.1	70.8	70.9
Vehicle Noise:	74.3	72.5	67.7	66.3	74.1	74.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	426	917
CNEL:	95	206	443	955

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | *Project Name:* Altitude
Road Name: Kimball Av. | *Job Number:* 9776
Road Segment: e/o Main St.

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		***Site Conditions (Hard = 10, Soft = 15)***	
Average Daily Traffic (Adt):	12,022 vehicles	*Autos:*	15
Peak Hour Percentage:	10%	*Medium Trucks (2 Axles):*	15
Peak Hour Volume:	1,202 vehicles	*Heavy Trucks (3+ Axles):*	15
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		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.27%
Medium Trucks:	81.2%	5.4%	13.4%	4.95%
Heavy Trucks:	82.1%	2.8%	15.1%	3.78%

Noise Source 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	-1.89	1.01	-1.20	*-4.64*	0.000	0.000
Medium Trucks:	81.00	-14.55	1.04	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-15.72	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:	68.1	66.0	64.4	59.8	67.7	68.3
Medium Trucks:	66.3	64.6	58.8	58.0	65.9	66.2
Heavy Trucks:	69.5	67.8	59.1	61.7	69.4	69.5
Vehicle Noise:	72.9	71.1	66.3	64.9	72.7	73.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	344	742
CNEL:	77	166	359	773

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | *Project Name:* Altitude
Road Name: Kimball Av. | *Job Number:* 9776
Road Segment: e/o Flight Av.

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		***Site Conditions (Hard = 10, Soft = 15)***	
Average Daily Traffic (Adt):	14,618 vehicles	*Autos:*	15
Peak Hour Percentage:	10%	*Medium Trucks (2 Axles):*	15
Peak Hour Volume:	1,462 vehicles	*Heavy Trucks (3+ Axles):*	15
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		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.35%
Medium Trucks:	81.2%	5.4%	13.4%	4.97%
Heavy Trucks:	82.1%	2.8%	15.1%	3.68%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos: 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	-1.04	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	-14.99	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:	69.0	66.9	65.2	60.7	68.6	69.1
Medium Trucks:	67.2	65.5	59.7	58.9	66.8	67.0
Heavy Trucks:	70.2	68.6	59.9	62.5	70.2	70.3
Vehicle Noise:	73.7	71.9	67.2	65.7	73.5	73.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	389	839
CNEL:	87	188	405	874

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | *Project Name:* Altitude
Road Name: Kimball Av. | *Job Number:* 9776
Road Segment: e/o Meadow Valley Av.

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		***Site Conditions (Hard = 10, Soft = 15)***	
Average Daily Traffic (Adt):	14,265 vehicles	*Autos:*	15
Peak Hour Percentage:	10%	*Medium Trucks (2 Axles):*	15
Peak Hour Volume:	1,426 vehicles	*Heavy Trucks (3+ Axles):*	15
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		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.34%
Medium Trucks:	81.2%	5.4%	13.4%	4.97%
Heavy Trucks:	82.1%	2.8%	15.1%	3.68%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos: 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	-1.15	1.01	-1.20	*-4.64*	0.000	0.000
Medium Trucks:	81.00	-13.78	1.04	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-15.09	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:	68.9	66.8	65.1	60.6	68.5	69.0
Medium Trucks:	67.1	65.4	59.6	58.8	66.7	66.9
Heavy Trucks:	70.1	68.5	59.8	62.4	70.1	70.2
Vehicle Noise:	73.6	71.8	67.1	65.6	73.4	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	178	383	825
CNEL:	86	185	399	860

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1 | *Project Name:* Altitude
Road Name: Pine Av. | *Job Number:* 9776
Road Segment: e/o Euclid Av.

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		***Site Conditions (Hard = 10, Soft = 15)***	
Average Daily Traffic (Adt):	24,898 vehicles	*Autos:*	15
Peak Hour Percentage:	10%	*Medium Trucks (2 Axles):*	15
Peak Hour Volume:	2,490 vehicles	*Heavy Trucks (3+ Axles):*	15
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		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.26%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.75%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos: 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	1.73	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	-12.13	0.37	-1.20	*-5.34*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	67.2	65.6	61.0	69.0	69.5
Medium Trucks:	67.7	66.0	60.3	59.5	67.4	67.6
Heavy Trucks:	71.3	69.6	60.9	63.5	71.2	71.3
Vehicle Noise:	74.5	72.7	67.7	66.4	74.2	74.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	248	534	1,150
CNEL:	120	258	555	1,195

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Central Av. | Job Number: 9776
Road Segment: n/o Chino Hills Pkwy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,707	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,871	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:	74.1%	12.6%	13.3%	91.33%
Medium Trucks:	81.2%	5.4%	13.4%	4.98%
Heavy Trucks:	82.1%	2.8%	15.1%	3.69%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.35	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	-11.59	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:	70.0	67.9	66.2	61.7	69.6	70.1
Medium Trucks:	68.3	66.6	60.9	60.1	68.0	68.2
Heavy Trucks:	71.8	70.2	61.5	64.1	71.8	71.9
Vehicle Noise:	75.0	73.3	68.3	67.0	74.8	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	126	271	583	1,257
CNEL:	131	282	607	1,307

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Central Av. | Job Number: 9776
Road Segment: s/o Chino Hills Pkwy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,280	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,728	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:	74.1%	12.6%	13.3%	91.15%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.86%

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:	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	2.12	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.50	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.61	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:	69.7	67.6	66.0	61.4	69.3	69.9
Medium Trucks:	68.1	66.4	60.7	59.9	67.8	68.0
Heavy Trucks:	71.8	70.2	61.5	64.1	71.7	71.8
Vehicle Noise:	74.9	73.1	68.1	66.9	74.7	74.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	266	573	1,233
CNEL:	128	276	595	1,282

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Central Av. | Job Number: 9776
Road Segment: s/o El Prado Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,667	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,167	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:	74.1%	12.6%	13.3%	91.03%
Medium Trucks:	81.2%	5.4%	13.4%	5.03%
Heavy Trucks:	82.1%	2.8%	15.1%	3.94%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.76	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.82	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.88	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:	70.4	68.3	66.6	62.1	70.0	70.5
Medium Trucks:	68.8	67.1	61.3	60.5	68.4	68.7
Heavy Trucks:	72.5	70.9	62.2	64.8	72.5	72.6
Vehicle Noise:	75.6	73.8	68.8	67.6	75.4	75.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	137	296	637	1,373
CNEL:	143	307	662	1,426

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: n/o SR-60

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,137	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,514	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.32%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.69%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.23	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-9.40	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.71	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.9	70.8	69.1	64.6	72.5	73.0
Medium Trucks:	71.3	69.6	63.9	63.1	71.0	71.2
Heavy Trucks:	74.8	73.2	64.5	67.1	74.7	74.8
Vehicle Noise:	78.0	76.2	71.3	70.0	77.8	78.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	278	598	1,289	2,778
CNEL:	289	622	1,341	2,888

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o SR-60

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,337	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,634	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	90.46%
Medium Trucks:	81.2%	5.4%	13.4%	5.15%
Heavy Trucks:	82.1%	2.8%	15.1%	4.39%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.33	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-9.11	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.81	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.0	70.9	69.2	64.7	72.6	73.1
Medium Trucks:	71.6	69.9	64.1	63.4	71.2	71.5
Heavy Trucks:	75.7	74.1	65.4	68.0	75.6	75.7
Vehicle Noise:	78.6	76.8	71.6	70.6	78.3	78.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	302	651	1,403	3,023
CNEL:	314	676	1,456	3,137

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Walnut St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,608	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,161	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	90.36%
Medium Trucks:	81.2%	5.4%	13.4%	5.16%
Heavy Trucks:	82.1%	2.8%	15.1%	4.48%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.72	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-9.71	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.32	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:	72.4	70.3	68.6	64.1	72.0	72.5
Medium Trucks:	71.0	69.3	63.5	62.8	70.6	70.9
Heavy Trucks:	75.2	73.5	64.8	67.4	75.1	75.2
Vehicle Noise:	78.0	76.2	71.0	70.0	77.8	78.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	278	598	1,288	2,776
CNEL:	288	620	1,337	2,880

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Riverside Dr.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,099	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,010	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:	74.1%	12.6%	13.3%	90.34%
Medium Trucks:	81.2%	5.4%	13.4%	5.15%
Heavy Trucks:	82.1%	2.8%	15.1%	4.51%

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	1.64	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.80	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.38	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.6	72.5	70.9	66.3	74.3	74.8
Medium Trucks:	72.9	71.2	65.4	64.6	72.5	72.7
Heavy Trucks:	76.3	74.6	65.9	68.5	76.2	76.3
Vehicle Noise:	79.6	77.8	72.9	71.6	79.4	79.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	353	761	1,640	3,533
CNEL:	368	792	1,707	3,677

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Chino Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,437	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,244	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:	74.1%	12.6%	13.3%	90.43%
Medium Trucks:	81.2%	5.4%	13.4%	5.13%
Heavy Trucks:	82.1%	2.8%	15.1%	4.44%

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	-10.50	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.12	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	75.0	72.9	71.2	66.7	74.6	75.1
Medium Trucks:	73.2	71.5	65.7	64.9	72.8	73.0
Heavy Trucks:	76.5	74.9	66.2	68.8	76.5	76.6
Vehicle Noise:	79.9	78.1	73.2	71.9	79.6	79.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	369	796	1,715	3,694
CNEL:	384	828	1,784	3,844

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Schaefer Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,076	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,108	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:	74.1%	12.6%	13.3%	90.42%
Medium Trucks:	81.2%	5.4%	13.4%	5.12%
Heavy Trucks:	82.1%	2.8%	15.1%	4.46%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.78	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.69	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.29	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:	74.8	72.7	71.0	66.5	74.4	74.9
Medium Trucks:	73.0	71.3	65.5	64.7	72.6	72.8
Heavy Trucks:	76.4	74.7	66.0	68.6	76.3	76.4
Vehicle Noise:	79.7	77.9	73.1	71.7	79.5	79.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	359	774	1,668	3,594
CNEL:	374	806	1,736	3,741

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Edison Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,153	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,815	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:	74.1%	12.6%	13.3%	90.39%
Medium Trucks:	81.2%	5.4%	13.4%	5.09%
Heavy Trucks:	82.1%	2.8%	15.1%	4.51%

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	1.35	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-11.14	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.67	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.3	72.3	70.6	66.1	74.0	74.5
Medium Trucks:	72.5	70.8	65.1	64.3	72.2	72.4
Heavy Trucks:	76.0	74.3	65.6	68.2	75.9	76.0
Vehicle Noise:	79.3	77.5	72.6	71.3	79.1	79.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	338	727	1,567	3,375
CNEL:	351	757	1,630	3,512

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Eucalyptus Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,575	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,958	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:	74.1%	12.6%	13.3%	90.50%
Medium Trucks:	81.2%	5.4%	13.4%	5.05%
Heavy Trucks:	82.1%	2.8%	15.1%	4.45%

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	1.57	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.97	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.52	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.6	72.5	70.8	66.3	74.2	74.7
Medium Trucks:	72.7	71.0	65.2	64.5	72.4	72.6
Heavy Trucks:	76.1	74.5	65.8	68.4	76.1	76.2
Vehicle Noise:	79.5	77.7	72.8	71.4	79.2	79.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	347	747	1,610	3,468
CNEL:	361	778	1,675	3,610

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Merrill Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,726	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,873	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:	74.1%	12.6%	13.3%	90.48%
Medium Trucks:	81.2%	5.4%	13.4%	5.05%
Heavy Trucks:	82.1%	2.8%	15.1%	4.47%

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	1.44	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-11.09	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.62	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.4	72.3	70.7	66.1	74.1	74.6
Medium Trucks:	72.6	70.9	65.1	64.3	72.2	72.4
Heavy Trucks:	76.0	74.4	65.7	68.3	76.0	76.1
Vehicle Noise:	79.4	77.6	72.7	71.3	79.1	79.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	341	734	1,581	3,407
CNEL:	355	764	1,646	3,546

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Kimball Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,380	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,038	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	90.75%
Medium Trucks:	81.2%	5.4%	13.4%	5.12%
Heavy Trucks:	82.1%	2.8%	15.1%	4.13%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.04	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-12.53	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.46	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.0	70.9	69.2	64.7	72.6	73.1
Medium Trucks:	71.1	69.4	63.7	62.9	70.8	71.0
Heavy Trucks:	74.2	72.6	63.9	66.5	74.1	74.2
Vehicle Noise:	77.7	75.9	71.2	69.7	77.5	77.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	265	571	1,230	2,649
CNEL:	276	595	1,281	2,760

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Bickmore Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,234	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,823	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:	74.1%	12.6%	13.3%	90.59%
Medium Trucks:	81.2%	5.4%	13.4%	5.04%
Heavy Trucks:	82.1%	2.8%	15.1%	4.37%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium 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	-0.53	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-13.08	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:	72.5	70.4	68.7	64.2	72.1	72.6
Medium Trucks:	70.6	68.9	63.1	62.3	70.2	70.5
Heavy Trucks:	74.0	72.3	63.6	66.2	73.9	74.0
Vehicle Noise:	77.3	75.5	70.7	69.3	77.1	77.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	250	538	1,159	2,498
CNEL:	260	560	1,207	2,600

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Pine Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,024	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,502	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:	74.1%	12.6%	13.3%	91.00%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	3.98%

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:	33.941
Medium 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	2.33	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.26	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.26	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	75.3	73.2	71.6	67.0	74.9	75.5
Medium Trucks:	73.4	71.7	66.0	65.2	73.1	73.3
Heavy Trucks:	76.4	74.8	66.0	68.6	76.3	76.4
Vehicle Noise:	80.0	78.2	73.5	71.9	79.7	80.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	375	808	1,741	3,751
CNEL:	391	842	1,814	3,909

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Flight Av. | Job Number: 9776
Road Segment: n/o Kimball Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,689	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	269	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:	74.1%	12.6%	13.3%	90.41%
Medium Trucks:	81.2%	5.4%	13.4%	5.01%
Heavy Trucks:	82.1%	2.8%	15.1%	4.58%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-7.47	3.26	-1.20	-4.49	0.000	0.000
Medium Trucks:	77.72	-20.03	3.33	-1.20	-4.86	0.000	0.000
Heavy Trucks:	82.99	-20.42	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:	61.1	59.0	57.3	52.8	60.7	61.2
Medium Trucks:	59.8	58.1	52.3	51.6	59.5	59.7
Heavy Trucks:	64.7	63.1	54.3	56.9	64.6	64.7
Vehicle Noise:	67.2	65.4	59.9	59.2	67.0	67.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	87	188
CNEL:	19	42	90	195

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Hellman Av. | Job Number: 9776
Road Segment: s/o Kimball Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,346	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,435	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:	74.1%	12.6%	13.3%	91.39%
Medium Trucks:	81.2%	5.4%	13.4%	4.95%
Heavy Trucks:	82.1%	2.8%	15.1%	3.66%

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:	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	-0.66	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-13.33	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-14.64	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:	67.6	65.5	63.8	59.3	67.2	67.7
Medium Trucks:	66.0	64.3	58.5	57.7	65.6	65.8
Heavy Trucks:	69.5	67.8	59.1	61.7	69.4	69.5
Vehicle Noise:	72.7	70.9	66.0	64.7	72.5	72.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	154	332	714
CNEL:	74	160	345	743

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Edison Av. | Job Number: 9776
Road Segment: w/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,548	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,755	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:	74.1%	12.6%	13.3%	91.39%
Medium Trucks:	81.2%	5.4%	13.4%	4.95%
Heavy Trucks:	82.1%	2.8%	15.1%	3.66%

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	0.21	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-12.45	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-13.76	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	65.7	64.1	59.5	67.4	67.9
Medium Trucks:	66.2	64.5	58.7	57.9	65.8	66.0
Heavy Trucks:	69.7	68.0	59.3	61.9	69.6	69.7
Vehicle Noise:	72.9	71.1	66.2	64.9	72.7	72.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	194	419	902
CNEL:	94	202	436	938

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Eucalyptus Av. | Job Number: 9776
Road Segment: w/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,659	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	466	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	44.0	feet
Centerline Dist. to Observer:	44.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.53%
Medium Trucks:	81.2%	5.4%	13.4%	4.87%
Heavy Trucks:	82.1%	2.8%	15.1%	3.60%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.03	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-17.77	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-19.08	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.6	59.5	57.8	53.3	61.2	61.7
Medium Trucks:	60.1	58.4	52.6	51.8	59.7	59.9
Heavy Trucks:	64.0	62.4	53.7	56.3	64.0	64.1
Vehicle Noise:	67.0	65.2	60.1	59.0	66.7	67.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	124	267
CNEL:	28	60	129	277

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Chino Hills Pkwy. | Job Number: 9776
Road Segment: w/o SR-71

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	42,531	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,253	vehicles
Vehicle Speed:	40	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:	74.1%	12.6%	13.3%	91.31%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.69%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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:	66.51	4.57	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	77.72	-8.06	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-9.36	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	68.8	67.1	62.6	70.5	71.0
Medium Trucks:	69.5	67.8	62.0	61.2	69.1	69.4
Heavy Trucks:	73.5	71.8	63.1	65.7	73.4	73.5
Vehicle Noise:	76.4	74.6	69.4	68.4	76.2	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	126	272	586	1,262
CNEL:	131	282	608	1,310

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Chino Hills Pkwy. | Job Number: 9776
Road Segment: e/o SR-71

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,050	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,805	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:	74.1%	12.6%	13.3%	91.10%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	3.88%

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:	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	2.24	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-10.35	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.47	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	68.4	66.7	62.2	70.1	70.6
Medium Trucks:	68.9	67.2	61.5	60.7	68.6	68.8
Heavy Trucks:	72.6	71.0	62.3	64.9	72.5	72.7
Vehicle Noise:	75.7	73.9	68.9	67.7	75.5	75.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	246	529	1,140
CNEL:	119	255	550	1,185

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Chino Hills Pkwy. | Job Number: 9776
Road Segment: e/o Ramona Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,511	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,651	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:	74.1%	12.6%	13.3%	91.11%
Medium Trucks:	81.2%	5.4%	13.4%	5.01%
Heavy Trucks:	82.1%	2.8%	15.1%	3.88%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.99	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-10.61	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.71	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:	70.3	68.2	66.5	62.0	69.9	70.4
Medium Trucks:	68.7	67.0	61.2	60.4	68.3	68.6
Heavy Trucks:	72.4	70.7	62.0	64.6	72.3	72.4
Vehicle Noise:	75.5	73.7	68.7	67.5	75.3	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	237	510	1,098
CNEL:	114	246	530	1,141

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Chino Hills Pkwy. | Job Number: 9776
Road Segment: e/o Monte Vista Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,542	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,154	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:	74.1%	12.6%	13.3%	91.07%
Medium Trucks:	81.2%	5.4%	13.4%	5.01%
Heavy Trucks:	82.1%	2.8%	15.1%	3.92%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.09	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-11.51	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-12.57	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	66.6	64.9	60.4	68.3	68.8
Medium Trucks:	67.1	65.4	59.6	58.9	66.8	67.0
Heavy Trucks:	70.8	69.2	60.5	63.1	70.8	70.9
Vehicle Noise:	73.9	72.1	67.1	65.9	73.7	74.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	228	492	1,060
CNEL:	110	237	511	1,101

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: El Prado Rd. | Job Number: 9776
Road Segment: e/o Central Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,984	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,698	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:	74.1%	12.6%	13.3%	90.83%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	4.15%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.06	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	79.45	-10.52	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.35	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	68.5	66.8	62.3	70.2	70.7
Medium Trucks:	69.0	67.3	61.6	60.8	68.7	68.9
Heavy Trucks:	73.0	71.4	62.7	65.3	72.9	73.0
Vehicle Noise:	76.0	74.2	69.1	68.0	75.7	76.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	229	494	1,063
CNEL:	110	238	513	1,104

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o El Prado Rd.

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	20,331 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	2,033 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	50 mph		
Near/Far Lane Distance:	36 feet		
Site Data		**Vehicle Mix**	
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		

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	90.68%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	4.30%

Noise Source 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	0.36	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.20	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.88	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	68.5	66.9	62.3	70.3	70.8
Medium Trucks:	68.9	67.2	61.4	60.7	68.6	68.8
Heavy Trucks:	72.6	71.0	62.3	64.9	72.5	72.6
Vehicle Noise:	75.7	74.0	69.0	67.7	75.5	75.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	221	477	1,028
CNEL:	107	230	496	1,069

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Mountain Av.

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	18,341 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	1,834 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	50 mph		
Near/Far Lane Distance:	36 feet		
Site Data		**Vehicle Mix**	
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		

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	90.61%
Medium Trucks:	81.2%	5.4%	13.4%	5.03%
Heavy Trucks:	82.1%	2.8%	15.1%	4.36%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.09	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.65	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.26	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	68.1	66.4	61.9	69.8	70.3
Medium Trucks:	68.5	66.8	61.0	60.2	68.1	68.3
Heavy Trucks:	72.2	70.6	61.9	64.5	72.1	72.3
Vehicle Noise:	75.3	73.5	68.6	67.3	75.1	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	208	448	964
CNEL:	100	216	465	1,002

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o San Antonio Av.

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	18,150 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	1,815 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	50 mph		
Near/Far Lane Distance:	36 feet		
Site Data		**Vehicle Mix**	
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		

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	90.60%
Medium Trucks:	81.2%	5.4%	13.4%	5.03%
Heavy Trucks:	82.1%	2.8%	15.1%	4.37%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-0.13	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	-13.30	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:	70.1	68.0	66.4	61.9	69.8	70.3
Medium Trucks:	68.4	66.7	61.0	60.2	68.1	68.3
Heavy Trucks:	72.2	70.5	61.8	64.4	72.1	72.2
Vehicle Noise:	75.3	73.5	68.5	67.3	75.1	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	206	445	958
CNEL:	100	215	462	996

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Fern Av.

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	18,947 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	1,895 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	50 mph		
Near/Far Lane Distance:	36 feet		
Site Data		**Vehicle Mix**	
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		

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	90.63%
Medium Trucks:	81.2%	5.4%	13.4%	5.03%
Heavy Trucks:	82.1%	2.8%	15.1%	4.34%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.05	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.51	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.14	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	68.2	66.6	62.0	70.0	70.5
Medium Trucks:	68.6	66.9	61.1	60.3	68.2	68.5
Heavy Trucks:	72.3	70.7	62.0	64.6	72.3	72.4
Vehicle Noise:	75.5	73.7	68.7	67.5	75.2	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	212	457	984
CNEL:	102	220	475	1,023

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,575 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,057 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:	74.1%	12.6%	13.3%	89.18%
Medium Trucks:	81.2%	5.4%	13.4%	5.17%
Heavy Trucks:	82.1%	2.8%	15.1%	5.65%

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:	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	0.34	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-12.02	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-11.64	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:	70.4	68.3	66.6	62.1	70.0	70.5
Medium Trucks:	68.8	67.1	61.4	60.6	68.5	68.7
Heavy Trucks:	73.6	71.9	63.2	65.8	73.5	73.6
Vehicle Noise:	76.2	74.4	69.0	68.2	76.0	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	122	263	567	1,222
CNEL:	127	273	588	1,266

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: w/o Rincon Meadows Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,519 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:	74.1%	12.6%	13.3%	91.31%
Medium Trucks:	81.2%	5.4%	13.4%	4.92%
Heavy Trucks:	82.1%	2.8%	15.1%	3.76%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	0.21	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	-13.63	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	68.1	66.5	61.9	69.9	70.4
Medium Trucks:	68.4	66.7	60.9	60.1	68.0	68.2
Heavy Trucks:	71.6	69.9	61.2	63.8	71.5	71.6
Vehicle Noise:	75.0	73.2	68.4	67.0	74.8	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	102	220	475	1,023
CNEL:	107	229	494	1,065

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Rincon Meadows Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,939 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,894 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	4.93%
Heavy Trucks:	82.1%	2.8%	15.1%	3.77%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	0.08	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	-13.76	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	68.0	66.3	61.8	69.7	70.2
Medium Trucks:	68.2	66.6	60.8	60.0	67.9	68.1
Heavy Trucks:	71.5	69.8	61.1	63.7	71.4	71.5
Vehicle Noise:	74.9	73.1	68.3	66.9	74.7	74.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	466	1,003
CNEL:	104	225	485	1,045

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Mill Creek Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,804 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,680 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:	74.1%	12.6%	13.3%	91.29%
Medium Trucks:	81.2%	5.4%	13.4%	4.93%
Heavy Trucks:	82.1%	2.8%	15.1%	3.79%

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:	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	-0.44	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.11	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.26	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:	69.6	67.5	65.8	61.3	69.2	69.7
Medium Trucks:	67.7	66.0	60.3	59.5	67.4	67.6
Heavy Trucks:	71.0	69.3	60.6	63.2	70.9	71.0
Vehicle Noise:	74.4	72.6	67.8	66.4	74.2	74.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	200	431	928
CNEL:	97	208	448	966

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Main St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,224 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,222 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:	74.1%	12.6%	13.3%	91.24%
Medium Trucks:	81.2%	5.4%	13.4%	4.93%
Heavy Trucks:	82.1%	2.8%	15.1%	3.84%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-1.82	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-14.50	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.58	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:	68.2	66.1	64.4	59.9	67.8	68.3
Medium Trucks:	66.3	64.6	58.9	58.1	66.0	66.2
Heavy Trucks:	69.6	68.0	59.3	61.9	69.6	69.7
Vehicle Noise:	73.0	71.2	66.4	65.0	72.8	73.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	350	753
CNEL:	78	169	364	784

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Flight Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,715 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,472 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:	74.1%	12.6%	13.3%	91.41%
Medium Trucks:	81.2%	5.4%	13.4%	4.94%
Heavy Trucks:	82.1%	2.8%	15.1%	3.65%

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:	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	-1.01	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	-14.99	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:	69.0	66.9	65.2	60.7	68.6	69.1
Medium Trucks:	67.2	65.5	59.7	58.9	66.8	67.0
Heavy Trucks:	70.2	68.6	59.9	62.5	70.2	70.3
Vehicle Noise:	73.7	71.9	67.2	65.7	73.5	73.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	390	840
CNEL:	88	189	406	875

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Meadow Valley Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,346 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,435 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:	74.1%	12.6%	13.3%	91.39%
Medium Trucks:	81.2%	5.4%	13.4%	4.95%
Heavy Trucks:	82.1%	2.8%	15.1%	3.66%

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:	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	-1.12	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.78	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.09	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:	68.9	66.8	65.1	60.6	68.5	69.0
Medium Trucks:	67.1	65.4	59.6	58.8	66.7	66.9
Heavy Trucks:	70.1	68.5	59.8	62.4	70.1	70.2
Vehicle Noise:	73.6	71.8	67.1	65.6	73.4	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	178	384	827
CNEL:	86	186	400	861

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Phase 1+2 | Project Name: Altitude
Road Name: Pine Av. | Job Number: 9776
Road Segment: e/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,001 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,500 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:	74.1%	12.6%	13.3%	91.20%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.80%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.74	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.87	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-12.07	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:	69.3	67.2	65.6	61.1	69.0	69.5
Medium Trucks:	67.7	66.1	60.3	59.5	67.4	67.6
Heavy Trucks:	71.4	69.7	61.0	63.6	71.3	71.4
Vehicle Noise:	74.5	72.7	67.7	66.5	74.3	74.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	249	537	1,157
CNEL:	120	259	558	1,203

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Central Av.
Road Segment: n/o Chino Hills Pkwy.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,799	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,880	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:	74.1%	12.6%	13.3%	91.36%
Medium Trucks:	81.2%	5.4%	13.4%	4.97%
Heavy Trucks:	82.1%	2.8%	15.1%	3.68%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.36	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	-11.59	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:	70.0	67.9	66.2	61.7	69.6	70.1
Medium Trucks:	68.3	66.6	60.9	60.1	68.0	68.2
Heavy Trucks:	71.8	70.2	61.5	64.1	71.8	71.9
Vehicle Noise:	75.0	73.3	68.3	67.0	74.8	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	126	271	584	1,258
CNEL:	131	282	607	1,308

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Central Av.
Road Segment: s/o Chino Hills Pkwy.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,578	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,758	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:	74.1%	12.6%	13.3%	91.06%
Medium Trucks:	81.2%	5.4%	13.4%	4.98%
Heavy Trucks:	82.1%	2.8%	15.1%	3.96%

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	2.16	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.46	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.46	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	67.7	66.0	61.5	69.4	69.9
Medium Trucks:	68.2	66.5	60.7	59.9	67.8	68.0
Heavy Trucks:	72.0	70.3	61.6	64.2	71.9	72.0
Vehicle Noise:	75.0	73.2	68.2	67.0	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:	130	280	604	1,301

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Central Av.
Road Segment: s/o El Prado Rd.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,867	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,187	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:	74.1%	12.6%	13.3%	90.85%
Medium Trucks:	81.2%	5.4%	13.4%	5.06%
Heavy Trucks:	82.1%	2.8%	15.1%	4.09%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-9.76	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.69	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	68.3	66.6	62.1	70.0	70.5
Medium Trucks:	68.9	67.2	61.4	60.6	68.5	68.7
Heavy Trucks:	72.7	71.1	62.4	65.0	72.7	72.8
Vehicle Noise:	75.7	73.9	68.9	67.7	75.5	75.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	140	301	648	1,397
CNEL:	145	313	673	1,451

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Euclid Av.
Road Segment: n/o SR-60
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,229	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,523	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.35%
Medium Trucks:	81.2%	5.4%	13.4%	4.97%
Heavy Trucks:	82.1%	2.8%	15.1%	3.68%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.24	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-9.40	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.71	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.9	70.8	69.2	64.6	72.5	73.0
Medium Trucks:	71.3	69.6	63.9	63.1	71.0	71.2
Heavy Trucks:	74.8	73.2	64.5	67.1	74.7	74.8
Vehicle Noise:	78.0	76.2	71.3	70.0	77.8	78.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	278	599	1,290	2,779
CNEL:	289	623	1,341	2,890

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Euclid Av.
Road Segment: s/o SR-60
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,875 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,687 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	89.98%
Medium Trucks:	81.2%	5.4%	13.4%	5.24%
Heavy Trucks:	82.1%	2.8%	15.1%	4.78%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.37	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-8.97	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.37	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.1	71.0	69.3	64.8	72.7	73.2
Medium Trucks:	71.7	70.0	64.3	63.5	71.4	71.6
Heavy Trucks:	76.1	74.5	65.8	68.4	76.1	76.2
Vehicle Noise:	78.8	77.1	71.8	70.8	78.6	78.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	315	679	1,464	3,154
CNEL:	327	704	1,518	3,269

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Euclid Av.
Road Segment: s/o Walnut St.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,238 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,224 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	89.83%
Medium Trucks:	81.2%	5.4%	13.4%	5.25%
Heavy Trucks:	82.1%	2.8%	15.1%	4.92%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.78	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-9.55	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.84	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	70.4	68.7	64.2	72.1	72.6
Medium Trucks:	71.2	69.5	63.7	62.9	70.8	71.0
Heavy Trucks:	75.7	74.0	65.3	67.9	75.6	75.7
Vehicle Noise:	78.3	76.5	71.2	70.3	78.1	78.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	291	628	1,352	2,913
CNEL:	302	650	1,401	3,019

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Euclid Av.
Road Segment: s/o Riverside Dr.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,823 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,082 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:	74.1%	12.6%	13.3%	89.82%
Medium Trucks:	81.2%	5.4%	13.4%	5.23%
Heavy Trucks:	82.1%	2.8%	15.1%	4.95%

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:	33.941
Medium 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	1.71	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.64	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.87	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.7	72.6	71.0	66.4	74.3	74.8
Medium Trucks:	73.0	71.3	65.6	64.8	72.7	72.9
Heavy Trucks:	76.8	75.1	66.4	69.0	76.7	76.8
Vehicle Noise:	79.9	78.1	73.1	71.9	79.7	79.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	370	798	1,720	3,705
CNEL:	385	830	1,787	3,851

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Euclid Av.
Road Segment: s/o Chino Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,253 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,325 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:	74.1%	12.6%	13.3%	89.98%
Medium Trucks:	81.2%	5.4%	13.4%	5.19%
Heavy Trucks:	82.1%	2.8%	15.1%	4.84%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.05	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.34	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.64	2.47	-1.20	-5.21	0.000	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	73.0	71.3	66.8	74.7	75.2
Medium Trucks:	73.3	71.6	65.9	65.1	73.0	73.2
Heavy Trucks:	77.0	75.4	66.7	69.3	76.9	77.1
Vehicle Noise:	80.2	78.4	73.4	72.2	79.9	80.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	386	832	1,794	3,864
CNEL:	402	866	1,865	4,017

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Euclid Av.
Road Segment: s/o Schaefer Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,984 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,198 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:	74.1%	12.6%	13.3%	89.97%
Medium Trucks:	81.2%	5.4%	13.4%	5.16%
Heavy Trucks:	82.1%	2.8%	15.1%	4.86%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.88	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.53	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.79	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.9	72.8	71.1	66.6	74.5	75.0
Medium Trucks:	73.1	71.4	65.7	64.9	72.8	73.0
Heavy Trucks:	76.9	75.2	66.5	69.1	76.8	76.9
Vehicle Noise:	80.0	78.2	73.2	72.0	79.8	80.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	377	812	1,749	3,769
CNEL:	392	844	1,819	3,919

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Euclid Av.
Road Segment: s/o Edison Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,278 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,928 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:	74.1%	12.6%	13.3%	89.98%
Medium Trucks:	81.2%	5.4%	13.4%	5.10%
Heavy Trucks:	82.1%	2.8%	15.1%	4.91%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.50	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.96	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.13	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.5	72.4	70.7	66.2	74.1	74.6
Medium Trucks:	72.7	71.0	65.2	64.5	72.4	72.6
Heavy Trucks:	76.5	74.9	66.2	68.8	76.5	76.6
Vehicle Noise:	79.6	77.8	72.9	71.6	79.4	79.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	356	767	1,653	3,561
CNEL:	370	798	1,718	3,702

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Euclid Av.
Road Segment: s/o Eucalyptus Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,916 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,092 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:	74.1%	12.6%	13.3%	90.17%
Medium Trucks:	81.2%	5.4%	13.4%	5.03%
Heavy Trucks:	82.1%	2.8%	15.1%	4.80%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.74	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	-11.00	2.47	-1.20	-5.21	0.000	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	72.6	71.0	66.5	74.4	74.9
Medium Trucks:	72.9	71.2	65.4	64.6	72.5	72.7
Heavy Trucks:	76.7	75.0	66.3	68.9	76.6	76.7
Vehicle Noise:	79.8	78.0	73.1	71.8	79.6	79.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	366	788	1,698	3,657
CNEL:	380	819	1,765	3,803

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Euclid Av.
Road Segment: s/o Merrill Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,067 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,007 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:	74.1%	12.6%	13.3%	90.14%
Medium Trucks:	81.2%	5.4%	13.4%	5.03%
Heavy Trucks:	82.1%	2.8%	15.1%	4.83%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.62	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.91	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.09	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.6	72.5	70.9	66.3	74.2	74.8
Medium Trucks:	72.8	71.1	65.3	64.5	72.4	72.6
Heavy Trucks:	76.6	74.9	66.2	68.8	76.5	76.6
Vehicle Noise:	79.7	77.9	73.0	71.7	79.5	79.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	360	775	1,670	3,598
CNEL:	374	806	1,736	3,741

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Euclid Av.
Road Segment: s/o Kimball Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,765	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,076	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:	74.1%	12.6%	13.3%	90.56%
Medium Trucks:	81.2%	5.4%	13.4%	5.12%
Heavy Trucks:	82.1%	2.8%	15.1%	4.32%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.03	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-12.44	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.18	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:	73.0	70.9	69.3	64.7	72.7	73.2
Medium Trucks:	71.2	69.5	63.8	63.0	70.9	71.1
Heavy Trucks:	74.5	72.8	64.1	66.7	74.4	74.5
Vehicle Noise:	77.9	76.1	71.3	69.9	77.7	77.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	272	586	1,263	2,720
CNEL:	283	610	1,314	2,832

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Euclid Av.
Road Segment: s/o Bickmore Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,011	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,901	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:	74.1%	12.6%	13.3%	90.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.01%
Heavy Trucks:	82.1%	2.8%	15.1%	4.68%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.36	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-12.92	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.21	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.6	70.5	68.9	64.3	72.3	72.8
Medium Trucks:	70.8	69.1	63.3	62.5	70.4	70.6
Heavy Trucks:	74.4	72.8	64.1	66.7	74.4	74.5
Vehicle Noise:	77.6	75.8	70.9	69.6	77.4	77.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	262	565	1,217	2,623
CNEL:	273	588	1,266	2,728

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Euclid Av.
Road Segment: s/o Pine Av.
Project Name: Altitude
Job Number: 9776

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:	74.1%	12.6%	13.3%	90.86%
Medium Trucks:	81.2%	5.4%	13.4%	5.01%
Heavy Trucks:	82.1%	2.8%	15.1%	4.12%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium 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	2.39	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.19	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.04	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	75.4	73.3	71.6	67.1	75.0	75.5
Medium Trucks:	73.5	71.8	66.0	65.2	73.1	73.3
Heavy Trucks:	76.6	75.0	66.3	68.9	76.5	76.7
Vehicle Noise:	80.1	78.3	73.6	72.1	79.9	80.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	383	826	1,779	3,832
CNEL:	399	860	1,853	3,992

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Flight Av.
Road Segment: n/o Kimball Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,869	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	287	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:	74.1%	12.6%	13.3%	90.14%
Medium Trucks:	81.2%	5.4%	13.4%	4.94%
Heavy Trucks:	82.1%	2.8%	15.1%	4.92%

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:	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	-7.20	3.26	-1.20	-4.49	0.000	0.000
Medium Trucks:	77.72	-19.81	3.33	-1.20	-4.86	0.000	0.000
Heavy Trucks:	82.99	-19.83	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:	61.4	59.3	57.6	53.1	61.0	61.5
Medium Trucks:	60.0	58.3	52.6	51.8	59.7	59.9
Heavy Trucks:	65.3	63.6	54.9	57.5	65.2	65.3
Vehicle Noise:	67.6	65.8	60.3	59.6	67.4	67.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	43	94	202
CNEL:	21	45	97	209

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Hellman Av.
Road Segment: s/o Kimball Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,501 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,450 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:	74.1%	12.6%	13.3%	91.49%
Medium Trucks:	81.2%	5.4%	13.4%	4.89%
Heavy Trucks:	82.1%	2.8%	15.1%	3.62%

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:	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	-0.61	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-13.33	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-14.64	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:	67.7	65.6	63.9	59.4	67.3	67.8
Medium Trucks:	66.0	64.3	58.5	57.7	65.6	65.8
Heavy Trucks:	69.5	67.8	59.1	61.7	69.4	69.5
Vehicle Noise:	72.7	70.9	66.0	64.7	72.5	72.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	154	332	716
CNEL:	74	160	346	745

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Edison Av.
Road Segment: w/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,734 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,773 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:	74.1%	12.6%	13.3%	91.48%
Medium Trucks:	81.2%	5.4%	13.4%	4.90%
Heavy Trucks:	82.1%	2.8%	15.1%	3.62%

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	0.26	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-12.45	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-13.76	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	65.8	64.1	59.6	67.5	68.0
Medium Trucks:	66.2	64.5	58.7	57.9	65.8	66.0
Heavy Trucks:	69.7	68.0	59.3	61.9	69.6	69.7
Vehicle Noise:	72.9	71.1	66.2	64.9	72.7	72.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	195	420	904
CNEL:	94	203	437	941

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Eucalyptus Av.
Road Segment: w/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,782 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	478 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.75%
Medium Trucks:	81.2%	5.4%	13.4%	4.74%
Heavy Trucks:	82.1%	2.8%	15.1%	3.51%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.90	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-17.77	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-19.08	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.7	59.6	57.9	53.4	61.3	61.8
Medium Trucks:	60.1	58.4	52.6	51.8	59.7	59.9
Heavy Trucks:	64.0	62.4	53.7	56.3	64.0	64.1
Vehicle Noise:	67.0	65.2	60.1	59.0	66.8	67.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	125	269
CNEL:	28	60	129	279

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Chino Hills Pkwy.
Road Segment: w/o SR-71
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	42,593 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,259 vehicles
Vehicle Speed:	40 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:	74.1%	12.6%	13.3%	91.33%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.69%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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:	66.51	4.57	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	77.72	-8.06	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-9.36	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	68.8	67.1	62.6	70.5	71.0
Medium Trucks:	69.5	67.8	62.0	61.2	69.1	69.4
Heavy Trucks:	73.5	71.8	63.1	65.7	73.4	73.5
Vehicle Noise:	76.4	74.6	69.5	68.4	76.2	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	126	272	586	1,262
CNEL:	131	282	608	1,310

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Chino Hills Pkwy.
Road Segment: e/o SR-71
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,194	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,819	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:	74.1%	12.6%	13.3%	90.97%
Medium Trucks:	81.2%	5.4%	13.4%	5.04%
Heavy Trucks:	82.1%	2.8%	15.1%	3.99%

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:	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	2.25	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-10.31	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.32	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:	70.5	68.4	66.8	62.2	70.1	70.7
Medium Trucks:	69.0	67.3	61.5	60.7	68.6	68.8
Heavy Trucks:	72.8	71.1	62.4	65.0	72.7	72.8
Vehicle Noise:	75.8	74.0	69.0	67.8	75.6	75.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	249	537	1,156
CNEL:	120	259	557	1,201

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Chino Hills Pkwy.
Road Segment: e/o Ramona Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,717	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,672	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:	74.1%	12.6%	13.3%	90.99%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	3.99%

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:	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	2.02	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-10.56	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.56	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	68.2	66.5	62.0	69.9	70.4
Medium Trucks:	68.7	67.0	61.3	60.5	68.4	68.6
Heavy Trucks:	72.5	70.9	62.2	64.8	72.5	72.6
Vehicle Noise:	75.6	73.8	68.7	67.6	75.4	75.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	111	240	517	1,115
CNEL:	116	249	537	1,158

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Chino Hills Pkwy.
Road Segment: e/o Monte Vista Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,748	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,175	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:	74.1%	12.6%	13.3%	90.92%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	4.06%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.12	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-11.45	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-12.38	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	66.6	65.0	60.4	68.3	68.9
Medium Trucks:	67.2	65.5	59.7	58.9	66.8	67.0
Heavy Trucks:	71.0	69.4	60.7	63.3	71.0	71.1
Vehicle Noise:	74.0	72.3	67.2	66.0	73.8	74.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	232	501	1,079
CNEL:	112	241	520	1,121

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: El Prado Rd.
Road Segment: e/o Central Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,482	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,748	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:	74.1%	12.6%	13.3%	90.53%
Medium Trucks:	81.2%	5.4%	13.4%	5.05%
Heavy Trucks:	82.1%	2.8%	15.1%	4.41%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.12	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	79.45	-10.41	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.00	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:	70.7	68.6	66.9	62.4	70.3	70.8
Medium Trucks:	69.2	67.5	61.7	60.9	68.8	69.0
Heavy Trucks:	73.4	71.7	63.0	65.6	73.3	73.4
Vehicle Noise:	76.2	74.4	69.2	68.2	76.0	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	237	511	1,100
CNEL:	114	246	530	1,142

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Kimball Av.
Road Segment: e/o El Prado Rd.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,829 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,083 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:	74.1%	12.6%	13.3%	90.29%
Medium Trucks:	81.2%	5.4%	13.4%	5.07%
Heavy Trucks:	82.1%	2.8%	15.1%	4.64%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.45	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.06	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.44	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	68.6	67.0	62.4	70.4	70.9
Medium Trucks:	69.1	67.4	61.6	60.8	68.7	68.9
Heavy Trucks:	73.0	71.4	62.7	65.3	73.0	73.1
Vehicle Noise:	76.0	74.2	69.2	68.0	75.8	76.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	231	498	1,073
CNEL:	111	240	517	1,114

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Kimball Av.
Road Segment: e/o Mountain Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,839 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,884 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:	74.1%	12.6%	13.3%	90.18%
Medium Trucks:	81.2%	5.4%	13.4%	5.08%
Heavy Trucks:	82.1%	2.8%	15.1%	4.74%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.01	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.49	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.79	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	68.2	66.5	62.0	69.9	70.4
Medium Trucks:	68.6	66.9	61.2	60.4	68.3	68.5
Heavy Trucks:	72.7	71.1	62.3	64.9	72.6	72.7
Vehicle Noise:	75.6	73.8	68.8	67.6	75.4	75.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	218	469	1,011
CNEL:	105	226	487	1,050

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Kimball Av.
Road Segment: e/o San Antonio Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,648 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,865 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:	74.1%	12.6%	13.3%	90.17%
Medium Trucks:	81.2%	5.4%	13.4%	5.08%
Heavy Trucks:	82.1%	2.8%	15.1%	4.75%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.04	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.53	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.82	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	68.1	66.5	61.9	69.9	70.4
Medium Trucks:	68.6	66.9	61.1	60.3	68.2	68.4
Heavy Trucks:	72.7	71.0	62.3	64.9	72.6	72.7
Vehicle Noise:	75.6	73.8	68.7	67.6	75.4	75.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	466	1,005
CNEL:	104	225	484	1,043

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Kimball Av.
Road Segment: e/o Fern Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,445 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,945 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:	74.1%	12.6%	13.3%	90.22%
Medium Trucks:	81.2%	5.4%	13.4%	5.08%
Heavy Trucks:	82.1%	2.8%	15.1%	4.71%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.15	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.35	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.68	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	68.3	66.7	62.1	70.0	70.6
Medium Trucks:	68.8	67.1	61.3	60.5	68.4	68.6
Heavy Trucks:	72.8	71.2	62.5	65.1	72.7	72.8
Vehicle Noise:	75.8	74.0	68.9	67.8	75.5	75.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	222	478	1,030
CNEL:	107	230	496	1,069

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Kimball Av.
Road Segment: e/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,774 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,277 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:	74.1%	12.6%	13.3%	88.44%
Medium Trucks:	81.2%	5.4%	13.4%	5.15%
Heavy Trucks:	82.1%	2.8%	15.1%	6.41%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	0.75	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.60	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-10.65	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	68.7	67.0	62.5	70.4	70.9
Medium Trucks:	69.2	67.5	61.8	61.0	68.9	69.1
Heavy Trucks:	74.6	72.9	64.2	66.8	74.5	74.6
Vehicle Noise:	76.9	75.1	69.6	68.9	76.7	76.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	137	295	636	1,371
CNEL:	142	306	659	1,419

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Kimball Av.
Road Segment: w/o Rincon Meadows Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,008 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,001 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:	74.1%	12.6%	13.3%	91.40%
Medium Trucks:	81.2%	5.4%	13.4%	4.84%
Heavy Trucks:	82.1%	2.8%	15.1%	3.76%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	0.33	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-12.44	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.53	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	68.2	66.6	62.0	70.0	70.5
Medium Trucks:	68.4	66.7	60.9	60.2	68.0	68.3
Heavy Trucks:	71.7	70.0	61.3	63.9	71.6	71.7
Vehicle Noise:	75.1	73.3	68.5	67.1	74.9	75.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	104	223	481	1,037
CNEL:	108	233	501	1,080

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Kimball Av.
Road Segment: e/o Rincon Meadows Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,397 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,940 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:	74.1%	12.6%	13.3%	91.38%
Medium Trucks:	81.2%	5.4%	13.4%	4.85%
Heavy Trucks:	82.1%	2.8%	15.1%	3.78%

Noise Source 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	0.19	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-12.56	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.65	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	68.1	66.4	61.9	69.8	70.3
Medium Trucks:	68.3	66.6	60.8	60.0	67.9	68.1
Heavy Trucks:	71.6	69.9	61.2	63.8	71.5	71.6
Vehicle Noise:	75.0	73.2	68.4	67.0	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	228	492	1,060

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Kimball Av.
Road Segment: e/o Mill Creek Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,230 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,723 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:	74.1%	12.6%	13.3%	91.36%
Medium Trucks:	81.2%	5.4%	13.4%	4.85%
Heavy Trucks:	82.1%	2.8%	15.1%	3.80%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-0.32	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.08	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.14	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:	69.7	67.6	65.9	61.4	69.3	69.8
Medium Trucks:	67.8	66.1	60.3	59.5	67.4	67.6
Heavy Trucks:	71.1	69.4	60.7	63.3	71.0	71.1
Vehicle Noise:	74.5	72.7	67.9	66.5	74.3	74.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	94	203	437	942
CNEL:	98	211	455	981

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Kimball Av.
Road Segment: e/o Main St.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,589	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,259	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:	74.1%	12.6%	13.3%	91.29%
Medium Trucks:	81.2%	5.4%	13.4%	4.84%
Heavy Trucks:	82.1%	2.8%	15.1%	3.87%

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:	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	-1.69	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-14.45	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:	68.3	66.2	64.6	60.0	67.9	68.5
Medium Trucks:	66.4	64.7	58.9	58.1	66.0	66.3
Heavy Trucks:	69.8	68.2	59.4	62.0	69.7	69.8
Vehicle Noise:	73.2	71.4	66.6	65.1	72.9	73.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	357	768
CNEL:	80	172	371	800

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Kimball Av.
Road Segment: e/o Flight Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,901	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,490	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:	74.1%	12.6%	13.3%	91.52%
Medium Trucks:	81.2%	5.4%	13.4%	4.88%
Heavy Trucks:	82.1%	2.8%	15.1%	3.61%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-0.95	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	-14.99	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	67.0	65.3	60.8	68.7	69.2
Medium Trucks:	67.2	65.5	59.7	58.9	66.8	67.0
Heavy Trucks:	70.2	68.6	59.9	62.5	70.2	70.3
Vehicle Noise:	73.8	72.0	67.2	65.7	73.5	73.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	182	391	843
CNEL:	88	189	407	878

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Kimball Av.
Road Segment: e/o Meadow Valley Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,501	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,450	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:	74.1%	12.6%	13.3%	91.49%
Medium Trucks:	81.2%	5.4%	13.4%	4.89%
Heavy Trucks:	82.1%	2.8%	15.1%	3.62%

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:	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	-1.07	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.78	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.09	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:	68.9	66.9	65.2	60.7	68.6	69.1
Medium Trucks:	67.1	65.4	59.6	58.8	66.7	66.9
Heavy Trucks:	70.1	68.5	59.8	62.4	70.1	70.2
Vehicle Noise:	73.7	71.9	67.1	65.6	73.4	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	385	829
CNEL:	86	186	401	863

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project Buildout
Road Name: Pine Av.
Road Segment: e/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,181	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,518	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:	74.1%	12.6%	13.3%	91.17%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.84%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.77	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.84	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.98	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	67.3	65.6	61.1	69.0	69.5
Medium Trucks:	67.8	66.1	60.3	59.5	67.4	67.6
Heavy Trucks:	71.4	69.8	61.1	63.7	71.4	71.5
Vehicle Noise:	74.6	72.8	67.8	66.5	74.3	74.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	117	251	542	1,167
CNEL:	121	261	563	1,213

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Central Av.
Road Segment: n/o Chino Hills Pkwy.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,114	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,011	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-10.06	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.37	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	68.1	66.4	61.9	69.8	70.3
Medium Trucks:	68.6	66.9	61.1	60.3	68.2	68.4
Heavy Trucks:	72.0	70.4	61.7	64.3	72.0	72.1
Vehicle Noise:	75.3	73.5	68.5	67.2	75.0	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	130	280	603	1,299
CNEL:	135	291	627	1,351

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Central Av.
Road Segment: s/o Chino Hills Pkwy.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,034	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,003	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.54	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.07	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.38	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	68.0	66.4	61.9	69.8	70.3
Medium Trucks:	68.5	66.8	61.1	60.3	68.2	68.4
Heavy Trucks:	72.0	70.4	61.7	64.3	72.0	72.1
Vehicle Noise:	75.2	73.5	68.5	67.2	75.0	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	130	279	602	1,297
CNEL:	135	291	626	1,349

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Central Av.
Road Segment: s/o El Prado Rd.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,429	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,643	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	3.38	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.23	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.54	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:	71.0	68.9	67.2	62.7	70.6	71.1
Medium Trucks:	69.4	67.7	61.9	61.1	69.0	69.2
Heavy Trucks:	72.9	71.2	62.5	65.1	72.8	72.9
Vehicle Noise:	76.1	74.3	69.4	68.1	75.9	76.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	148	318	685	1,475
CNEL:	153	331	712	1,534

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Euclid Av.
Road Segment: n/o SR-60
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,406	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,741	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.50	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-9.12	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.43	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:	73.2	71.1	69.4	64.9	72.8	73.3
Medium Trucks:	71.6	69.9	64.1	63.3	71.2	71.5
Heavy Trucks:	75.1	73.4	64.7	67.3	75.0	75.1
Vehicle Noise:	78.3	76.5	71.6	70.3	78.1	78.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	290	625	1,346	2,900
CNEL:	301	650	1,399	3,015

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Euclid Av.
Road Segment: s/o SR-60
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	48,744	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,874	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.65	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-7.97	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.28	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.3	72.2	70.6	66.0	74.0	74.5
Medium Trucks:	72.8	71.1	65.3	64.5	72.4	72.6
Heavy Trucks:	76.2	74.6	65.9	68.5	76.2	76.3
Vehicle Noise:	79.4	77.7	72.7	71.4	79.2	79.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	346	745	1,606	3,459
CNEL:	360	775	1,670	3,597

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Euclid Av.
Road Segment: s/o Walnut St.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,163	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,416	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.22	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-8.40	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.70	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:	73.9	71.8	70.1	65.6	73.5	74.0
Medium Trucks:	72.3	70.6	64.9	64.1	72.0	72.2
Heavy Trucks:	75.8	74.2	65.5	68.1	75.7	75.8
Vehicle Noise:	79.0	77.2	72.3	71.0	78.8	79.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	324	698	1,503	3,239
CNEL:	337	726	1,563	3,368

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Euclid Av.
Road Segment: s/o Riverside Dr.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	43,269	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,327	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.26	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.36	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.67	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.3	74.2	72.5	68.0	75.9	76.4
Medium Trucks:	74.3	72.6	66.9	66.1	74.0	74.2
Heavy Trucks:	77.0	75.4	66.6	69.2	76.9	77.0
Vehicle Noise:	80.8	79.0	74.3	72.7	80.5	80.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	423	911	1,962	4,227
CNEL:	441	950	2,046	4,408

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Euclid Av.
Road Segment: s/o Chino Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,985	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,599	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.52	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.09	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.40	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.5	74.4	72.8	68.2	76.1	76.7
Medium Trucks:	74.6	72.9	67.1	66.3	74.2	74.4
Heavy Trucks:	77.3	75.6	66.9	69.5	77.2	77.3
Vehicle Noise:	81.0	79.2	74.6	73.0	80.8	81.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	440	948	2,043	4,402
CNEL:	459	989	2,131	4,591

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Euclid Av.
Road Segment: s/o Schaefer Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,327	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,533	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.46	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.16	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.46	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.5	74.4	72.7	68.2	76.1	76.6
Medium Trucks:	74.5	72.8	67.1	66.3	74.2	74.4
Heavy Trucks:	77.2	75.6	66.8	69.4	77.1	77.2
Vehicle Noise:	81.0	79.2	74.6	72.9	80.7	81.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	436	939	2,024	4,360
CNEL:	455	980	2,111	4,547

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Euclid Av.
Road Segment: s/o Edison Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	43,891	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,389	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.32	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.30	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.60	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.3	74.2	72.6	68.0	75.9	76.5
Medium Trucks:	74.4	72.7	66.9	66.1	74.0	74.2
Heavy Trucks:	77.1	75.4	66.7	69.3	77.0	77.1
Vehicle Noise:	80.8	79.0	74.4	72.8	80.6	80.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	427	919	1,981	4,267
CNEL:	445	959	2,066	4,450

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Euclid Av.
Road Segment: s/o Eucalyptus Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	46,731	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,673	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.59	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.02	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.33	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	74.5	72.8	68.3	76.2	76.7
Medium Trucks:	74.7	73.0	67.2	66.4	74.3	74.5
Heavy Trucks:	77.3	75.7	67.0	69.6	77.3	77.4
Vehicle Noise:	81.1	79.3	74.7	73.1	80.9	81.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	445	959	2,065	4,449
CNEL:	464	1,000	2,154	4,640

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Euclid Av.
Road Segment: s/o Merrill Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,854	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,885	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.79	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.82	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.13	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	75.8	73.7	72.0	67.5	75.4	75.9
Medium Trucks:	73.8	72.2	66.4	65.6	73.5	73.7
Heavy Trucks:	76.5	74.9	66.2	68.8	76.5	76.6
Vehicle Noise:	80.3	78.5	73.9	72.3	80.1	80.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	393	848	1,826	3,934
CNEL:	410	884	1,905	4,103

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Euclid Av.
Road Segment: s/o Kimball Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,502	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,050	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.74	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.88	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:	74.7	72.6	71.0	66.4	74.4	74.9
Medium Trucks:	72.8	71.1	65.3	64.5	72.4	72.7
Heavy Trucks:	75.5	73.8	65.1	67.7	75.4	75.5
Vehicle Noise:	79.3	77.4	72.8	71.2	79.0	79.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	335	721	1,554	3,348
CNEL:	349	752	1,621	3,492

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Euclid Av.
Road Segment: s/o Bickmore Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,881	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,788	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.35	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-11.27	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.57	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.4	72.3	70.6	66.1	74.0	74.5
Medium Trucks:	72.4	70.7	64.9	64.2	72.1	72.3
Heavy Trucks:	75.1	73.4	64.7	67.3	75.0	75.1
Vehicle Noise:	78.9	77.0	72.4	70.8	78.6	78.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	315	679	1,464	3,153
CNEL:	329	709	1,527	3,289

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Euclid Av.
Road Segment: s/o Pine Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,720	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,472	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.40	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.21	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.52	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.4	74.3	72.6	68.1	76.0	76.5
Medium Trucks:	74.5	72.8	67.0	66.2	74.1	74.3
Heavy Trucks:	77.1	75.5	66.8	69.4	77.1	77.2
Vehicle Noise:	80.9	79.1	74.5	72.9	80.7	80.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	432	931	2,005	4,321
CNEL:	451	971	2,092	4,506

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Flight Av.
Road Segment: n/o Kimball Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,509	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	951	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-1.94	3.26	-1.20	-4.49	0.000	0.000
Medium Trucks:	77.72	-14.55	3.33	-1.20	-4.86	0.000	0.000
Heavy Trucks:	82.99	-15.86	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:	66.6	64.5	62.9	58.3	66.3	66.8
Medium Trucks:	65.3	63.6	57.8	57.0	64.9	65.2
Heavy Trucks:	69.3	67.6	58.9	61.5	69.2	69.3
Vehicle Noise:	72.2	70.4	65.2	64.2	71.9	72.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	87	187	404
CNEL:	42	90	195	419

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Hellman Av.
Road Segment: s/o Kimball Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,877 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,288 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.13	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-13.75	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-15.06	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:	67.1	65.0	63.4	58.8	66.8	67.3
Medium Trucks:	65.5	63.8	58.1	57.3	65.2	65.4
Heavy Trucks:	69.0	67.4	58.7	61.3	69.0	69.1
Vehicle Noise:	72.2	70.5	65.5	64.2	72.0	72.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	310	668
CNEL:	69	150	322	695

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Edison Av.
Road Segment: w/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,838 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,984 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	0.74	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-11.87	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-13.18	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	66.2	64.6	60.1	68.0	68.5
Medium Trucks:	66.7	65.0	59.3	58.5	66.4	66.6
Heavy Trucks:	70.2	68.6	59.9	62.5	70.2	70.3
Vehicle Noise:	73.4	71.7	66.7	65.4	73.2	73.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	212	457	984
CNEL:	102	220	475	1,023

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Eucalyptus Av.
Road Segment: w/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,198 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	620 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.80	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-16.41	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-17.72	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.8	60.7	59.0	54.5	62.4	62.9
Medium Trucks:	61.4	59.7	53.9	53.2	61.1	61.3
Heavy Trucks:	65.4	63.7	55.0	57.6	65.3	65.4
Vehicle Noise:	68.3	66.5	61.4	60.3	68.1	68.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	70	152	327
CNEL:	34	73	158	340

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Chino Hills Pkwy.
Road Segment: w/o SR-71
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,611 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,461 vehicles
Vehicle Speed:	40 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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:	66.51	4.77	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	77.72	-7.84	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-9.15	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	69.0	67.3	62.8	70.7	71.2
Medium Trucks:	69.7	68.0	62.3	61.5	69.4	69.6
Heavy Trucks:	73.7	72.0	63.3	65.9	73.6	73.7
Vehicle Noise:	76.6	74.8	69.7	68.6	76.4	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	130	281	605	1,304
CNEL:	135	292	628	1,353

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Chino Hills Pkwy.
Road Segment: e/o SR-71
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,485	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,049	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.61	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-10.01	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.31	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	68.8	67.1	62.6	70.5	71.0
Medium Trucks:	69.3	67.6	61.8	61.0	68.9	69.2
Heavy Trucks:	72.8	71.1	62.4	65.0	72.7	72.8
Vehicle Noise:	76.0	74.2	69.3	68.0	75.8	76.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	256	551	1,186
CNEL:	123	266	573	1,234

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Chino Hills Pkwy.
Road Segment: e/o Ramona Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,987	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,899	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.39	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-10.23	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.53	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	68.6	66.9	62.4	70.3	70.8
Medium Trucks:	69.1	67.4	61.6	60.8	68.7	68.9
Heavy Trucks:	72.6	70.9	62.2	64.8	72.5	72.6
Vehicle Noise:	75.8	74.0	69.0	67.8	75.5	75.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	247	533	1,147
CNEL:	119	257	554	1,193

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Chino Hills Pkwy.
Road Segment: e/o Monte Vista Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,725	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,073	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	0.93	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-11.68	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:	68.5	66.4	64.8	60.2	68.2	68.7
Medium Trucks:	66.9	65.2	59.5	58.7	66.6	66.8
Heavy Trucks:	70.4	68.8	60.1	62.7	70.4	70.5
Vehicle Noise:	73.6	71.8	66.9	65.6	73.4	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	218	470	1,013
CNEL:	105	227	489	1,053

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: El Prado Rd.
Road Segment: e/o Central Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,209	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,321	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.98	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	79.45	-9.64	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-10.94	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:	71.5	69.4	67.8	63.2	71.1	71.6
Medium Trucks:	69.9	68.2	62.5	61.7	69.6	69.8
Heavy Trucks:	73.4	71.8	63.1	65.7	73.3	73.5
Vehicle Noise:	76.6	74.8	69.9	68.6	76.4	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	118	253	545	1,175
CNEL:	122	263	567	1,222

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Kimball Av.
Road Segment: e/o El Prado Rd.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,169 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,617 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.49	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.13	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.44	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	69.7	68.0	63.5	71.4	71.9
Medium Trucks:	70.0	68.3	62.5	61.7	69.6	69.8
Heavy Trucks:	73.1	71.4	62.7	65.3	73.0	73.1
Vehicle Noise:	76.5	74.7	70.0	68.5	76.3	76.6

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: OYC 2018 Without Project
Road Name: Kimball Av.
Road Segment: e/o Mountain Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,679 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,468 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.23	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.38	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.69	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	69.4	67.7	63.2	71.1	71.6
Medium Trucks:	69.7	68.0	62.3	61.5	69.4	69.6
Heavy Trucks:	72.8	71.1	62.4	65.0	72.7	72.8
Vehicle Noise:	76.3	74.5	69.7	68.3	76.1	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	240	518	1,115
CNEL:	116	250	539	1,162

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Kimball Av.
Road Segment: e/o San Antonio Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,154 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,515 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.32	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.30	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.61	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	69.5	67.8	63.3	71.2	71.7
Medium Trucks:	69.8	68.1	62.3	61.6	69.5	69.7
Heavy Trucks:	72.9	71.2	62.5	65.1	72.8	72.9
Vehicle Noise:	76.4	74.6	69.8	68.3	76.1	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	243	524	1,130
CNEL:	118	253	546	1,177

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Kimball Av.
Road Segment: e/o Fern Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,482 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,748 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.70	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.91	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.22	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:	72.0	69.9	68.2	63.7	71.6	72.1
Medium Trucks:	70.2	68.5	62.7	61.9	69.8	70.1
Heavy Trucks:	73.3	71.6	62.9	65.5	73.2	73.3
Vehicle Noise:	76.8	75.0	70.2	68.7	76.5	76.8

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: OYC 2018 Without Project
Road Name: Kimball Av.
Road Segment: e/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,213	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,521	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.33	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.29	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.60	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:	71.3	69.2	67.6	63.0	71.0	71.5
Medium Trucks:	69.6	67.9	62.1	61.3	69.2	69.4
Heavy Trucks:	72.6	71.0	62.3	64.9	72.5	72.7
Vehicle Noise:	76.1	74.3	69.6	68.1	75.9	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	261	561	1,209
CNEL:	126	271	585	1,260

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Kimball Av.
Road Segment: w/o Rincon Meadows Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,920	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,592	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.45	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.17	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.48	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:	71.5	69.4	67.7	63.2	71.1	71.6
Medium Trucks:	69.7	68.0	62.2	61.4	69.3	69.5
Heavy Trucks:	72.7	71.1	62.4	65.0	72.7	72.8
Vehicle Noise:	76.2	74.4	69.7	68.2	76.0	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	265	572	1,232
CNEL:	128	276	596	1,283

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Kimball Av.
Road Segment: e/o Rincon Meadows Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,966	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,497	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.28	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.33	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.64	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	69.2	67.5	63.0	70.9	71.4
Medium Trucks:	69.5	67.8	62.0	61.3	69.2	69.4
Heavy Trucks:	72.6	70.9	62.2	64.8	72.5	72.6
Vehicle Noise:	76.1	74.3	69.5	68.0	75.8	76.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	120	259	558	1,201
CNEL:	125	270	581	1,251

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Kimball Av.
Road Segment: e/o Mill Creek Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,168	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,517	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.32	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.30	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.60	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:	71.3	69.2	67.6	63.0	71.0	71.5
Medium Trucks:	69.5	67.8	62.1	61.3	69.2	69.4
Heavy Trucks:	72.6	71.0	62.3	64.9	72.5	72.6
Vehicle Noise:	76.1	74.3	69.5	68.1	75.9	76.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	260	561	1,208
CNEL:	126	271	584	1,258

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Kimball Av.
Road Segment: e/o Main St.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,203	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,820	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-0.09	1.01	-1.20	*-4.64*	0.000	0.000
Medium Trucks:	81.00	-12.70	1.04	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-14.01	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:	69.9	67.8	66.2	61.6	69.5	70.1
Medium Trucks:	68.1	66.4	60.7	59.9	67.8	68.0
Heavy Trucks:	71.2	69.6	60.9	63.5	71.1	71.2
Vehicle Noise:	74.7	72.9	68.1	66.7	74.5	74.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	210	452	973
CNEL:	101	218	471	1,014

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Kimball Av.
Road Segment: e/o Flight Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,667	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,567	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-0.74	1.01	-1.20	*-4.64*	0.000	0.000
Medium Trucks:	81.00	-13.36	1.04	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-14.66	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	67.2	65.5	61.0	68.9	69.4
Medium Trucks:	67.5	65.8	60.0	59.2	67.1	67.4
Heavy Trucks:	70.6	68.9	60.2	62.8	70.5	70.6
Vehicle Noise:	74.1	72.3	67.5	66.0	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	426	917

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Kimball Av.
Road Segment: e/o Meadow Valley Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,314	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,431	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-1.13	1.01	-1.20	*-4.64*	0.000	0.000
Medium Trucks:	81.00	-13.75	1.04	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-15.06	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:	68.9	66.8	65.1	60.6	68.5	69.0
Medium Trucks:	67.1	65.4	59.6	58.8	66.7	67.0
Heavy Trucks:	70.2	68.5	59.8	62.4	70.1	70.2
Vehicle Noise:	73.7	71.9	67.1	65.6	73.4	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	385	829
CNEL:	86	186	401	864

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 Without Project
Road Name: Pine Av.
Road Segment: e/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,703	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,770	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.19	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-10.42	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-11.73	0.37	-1.20	*-5.34*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	67.7	66.0	61.5	69.4	69.9
Medium Trucks:	68.2	66.5	60.7	59.9	67.8	68.1
Heavy Trucks:	71.7	70.0	61.3	63.9	71.6	71.7
Vehicle Noise:	74.9	73.1	68.2	66.9	74.7	74.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	265	571	1,229
CNEL:	128	275	593	1,278

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Central Av. | Job Number: 9776
Road Segment: n/o Chino Hills Pkwy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,158	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,016	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:	74.1%	12.6%	13.3%	91.31%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.69%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-10.06	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.37	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	68.1	66.4	61.9	69.8	70.3
Medium Trucks:	68.6	66.9	61.1	60.3	68.2	68.4
Heavy Trucks:	72.0	70.4	61.7	64.3	72.0	72.1
Vehicle Noise:	75.3	73.5	68.5	67.2	75.0	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	130	280	603	1,300
CNEL:	135	291	627	1,352

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Central Av. | Job Number: 9776
Road Segment: s/o Chino Hills Pkwy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,246	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,025	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:	74.1%	12.6%	13.3%	91.24%
Medium Trucks:	81.2%	5.4%	13.4%	4.98%
Heavy Trucks:	82.1%	2.8%	15.1%	3.78%

Noise Source 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	2.57	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.05	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.26	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	68.1	66.4	61.9	69.8	70.3
Medium Trucks:	68.6	66.9	61.1	60.3	68.2	68.4
Heavy Trucks:	72.2	70.5	61.8	64.4	72.1	72.2
Vehicle Noise:	75.3	73.5	68.6	67.3	75.1	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	283	609	1,311
CNEL:	136	294	633	1,363

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Central Av. | Job Number: 9776
Road Segment: s/o El Prado Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,632	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,663	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:	74.1%	12.6%	13.3%	91.19%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.81%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	3.40	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.21	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.39	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:	71.0	68.9	67.2	62.7	70.6	71.1
Medium Trucks:	69.4	67.7	61.9	61.2	69.1	69.3
Heavy Trucks:	73.0	71.4	62.7	65.3	73.0	73.1
Vehicle Noise:	76.2	74.4	69.4	68.2	75.9	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	149	322	694	1,495
CNEL:	155	335	721	1,554

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: n/o SR-60

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,450	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,745	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.31%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.50	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-9.12	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.43	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:	73.2	71.1	69.4	64.9	72.8	73.3
Medium Trucks:	71.6	69.9	64.1	63.3	71.2	71.5
Heavy Trucks:	75.1	73.4	64.7	67.3	75.0	75.1
Vehicle Noise:	78.3	76.5	71.6	70.3	78.1	78.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	290	625	1,346	2,900
CNEL:	302	650	1,400	3,016

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o SR-60

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	49,059	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,906	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.01%
Medium Trucks:	81.2%	5.4%	13.4%	5.03%
Heavy Trucks:	82.1%	2.8%	15.1%	3.96%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.66	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-7.92	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.95	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.3	72.2	70.6	66.0	74.0	74.5
Medium Trucks:	72.8	71.1	65.3	64.5	72.4	72.7
Heavy Trucks:	76.6	74.9	66.2	68.8	76.5	76.6
Vehicle Noise:	79.6	77.8	72.8	71.6	79.4	79.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	356	766	1,650	3,555
CNEL:	369	796	1,715	3,694

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Walnut St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,522	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,452	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	90.99%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	3.98%

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:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.24	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-8.34	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.35	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:	73.9	71.8	70.2	65.6	73.5	74.0
Medium Trucks:	72.4	70.7	64.9	64.1	72.0	72.2
Heavy Trucks:	76.2	74.5	65.8	68.4	76.1	76.2
Vehicle Noise:	79.2	77.4	72.4	71.2	79.0	79.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	334	719	1,550	3,339
CNEL:	347	747	1,610	3,469

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Riverside Dr.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	43,671	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,367	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:	74.1%	12.6%	13.3%	90.99%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	3.99%

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:	33.941
Medium 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	3.28	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.30	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.30	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.3	74.2	72.5	68.0	75.9	76.4
Medium Trucks:	74.4	72.7	66.9	66.1	74.0	74.2
Heavy Trucks:	77.4	75.7	67.0	69.6	77.3	77.4
Vehicle Noise:	80.9	79.1	74.4	72.9	80.7	81.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	435	937	2,018	4,347
CNEL:	453	976	2,103	4,530

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Chino Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	46,431	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,643	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:	74.1%	12.6%	13.3%	91.02%
Medium Trucks:	81.2%	5.4%	13.4%	5.01%
Heavy Trucks:	82.1%	2.8%	15.1%	3.97%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.55	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.04	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.06	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:	76.6	74.5	72.8	68.3	76.2	76.7
Medium Trucks:	74.6	72.9	67.2	66.4	74.3	74.5
Heavy Trucks:	77.6	76.0	67.3	69.9	77.5	77.6
Vehicle Noise:	81.2	79.4	74.7	73.2	81.0	81.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	452	974	2,098	4,521
CNEL:	471	1,015	2,187	4,712

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Schaefer Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,817	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,582	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:	74.1%	12.6%	13.3%	91.02%
Medium Trucks:	81.2%	5.4%	13.4%	5.01%
Heavy Trucks:	82.1%	2.8%	15.1%	3.97%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.49	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.10	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.12	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:	76.5	74.4	72.7	68.2	76.1	76.6
Medium Trucks:	74.6	72.9	67.1	66.3	74.2	74.4
Heavy Trucks:	77.5	75.9	67.2	69.8	77.5	77.6
Vehicle Noise:	81.1	79.3	74.6	73.1	80.9	81.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	448	965	2,080	4,481
CNEL:	467	1,006	2,167	4,669

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Edison Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,483	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,448	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:	74.1%	12.6%	13.3%	91.04%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.97%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.37	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.24	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.24	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.4	74.3	72.6	68.1	76.0	76.5
Medium Trucks:	74.4	72.7	67.0	66.2	74.1	74.3
Heavy Trucks:	77.4	75.8	67.1	69.7	77.3	77.5
Vehicle Noise:	81.0	79.2	74.5	73.0	80.8	81.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	439	946	2,038	4,392
CNEL:	458	986	2,124	4,577

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Eucalyptus Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,425	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,743	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:	74.1%	12.6%	13.3%	91.07%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.94%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.64	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.97	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.99	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:	76.6	74.5	72.9	68.4	76.3	76.8
Medium Trucks:	74.7	73.0	67.2	66.4	74.3	74.6
Heavy Trucks:	77.7	76.0	67.3	69.9	77.6	77.7
Vehicle Noise:	81.3	79.5	74.8	73.2	81.0	81.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	457	985	2,123	4,574
CNEL:	477	1,027	2,213	4,767

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Merrill Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,548	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,955	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:	74.1%	12.6%	13.3%	91.03%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.99%

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:	33.941
Medium 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	2.85	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.76	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.73	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	75.9	73.8	72.1	67.6	75.5	76.0
Medium Trucks:	73.9	72.2	66.5	65.7	73.6	73.8
Heavy Trucks:	76.9	75.3	66.6	69.2	76.9	77.0
Vehicle Noise:	80.5	78.7	74.0	72.5	80.3	80.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	407	876	1,887	4,066
CNEL:	424	913	1,967	4,237

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Kimball Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,559	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,056	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:	74.1%	12.6%	13.3%	91.13%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	3.85%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.74	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.85	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.01	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:	74.7	72.6	71.0	66.4	74.4	74.9
Medium Trucks:	72.8	71.1	65.4	64.6	72.5	72.7
Heavy Trucks:	75.7	74.0	65.3	67.9	75.6	75.7
Vehicle Noise:	79.3	77.5	72.9	71.3	79.1	79.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	339	731	1,574	3,391
CNEL:	354	762	1,641	3,536

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Bickmore Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,281	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,828	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:	74.1%	12.6%	13.3%	91.09%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.92%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.40	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-11.22	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.26	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.4	72.3	70.6	66.1	74.0	74.5
Medium Trucks:	72.5	70.8	65.0	64.2	72.1	72.3
Heavy Trucks:	75.4	73.8	65.1	67.7	75.3	75.4
Vehicle Noise:	79.0	77.2	72.5	71.0	78.8	79.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	324	697	1,502	3,236
CNEL:	337	727	1,566	3,373

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Pine Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,028	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,503	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:	74.1%	12.6%	13.3%	91.19%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.81%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.43	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.19	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.36	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.4	74.3	72.7	68.1	76.0	76.6
Medium Trucks:	74.5	72.8	67.0	66.2	74.1	74.4
Heavy Trucks:	77.3	75.7	66.9	69.5	77.2	77.3
Vehicle Noise:	81.0	79.2	74.5	72.9	80.8	81.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	438	943	2,032	4,377
CNEL:	456	983	2,118	4,563

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Flight Av. | Job Number: 9776
Road Segment: n/o Kimball Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,601	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	960	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:	74.1%	12.6%	13.3%	91.19%
Medium Trucks:	81.2%	5.4%	13.4%	4.98%
Heavy Trucks:	82.1%	2.8%	15.1%	3.83%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-1.90	3.26	-1.20	-4.49	0.000	0.000
Medium Trucks:	77.72	-14.53	3.33	-1.20	-4.86	0.000	0.000
Heavy Trucks:	82.99	-15.67	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:	66.7	64.6	62.9	58.4	66.3	66.8
Medium Trucks:	65.3	63.6	57.9	57.1	65.0	65.2
Heavy Trucks:	69.4	67.8	59.1	61.7	69.4	69.5
Vehicle Noise:	72.3	70.5	65.3	64.3	72.1	72.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	89	191	411
CNEL:	43	92	198	427

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Hellman Av. | Job Number: 9776
Road Segment: s/o Kimball Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,950	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,295	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:	74.1%	12.6%	13.3%	91.35%
Medium Trucks:	81.2%	5.4%	13.4%	4.97%
Heavy Trucks:	82.1%	2.8%	15.1%	3.68%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.11	1.01	-1.20	*-4.64*	0.000	0.000
Medium Trucks:	79.45	-13.75	1.04	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-15.06	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:	67.2	65.1	63.4	58.9	66.8	67.3
Medium Trucks:	65.5	63.8	58.1	57.3	65.2	65.4
Heavy Trucks:	69.0	67.4	58.7	61.3	69.0	69.1
Vehicle Noise:	72.3	70.5	65.5	64.2	72.0	72.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	310	669
CNEL:	70	150	323	695

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Edison Av. | Job Number: 9776
Road Segment: w/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,926	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,993	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.34%
Medium Trucks:	81.2%	5.4%	13.4%	4.98%
Heavy Trucks:	82.1%	2.8%	15.1%	3.68%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	0.76	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-11.87	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-13.18	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	66.3	64.6	60.1	68.0	68.5
Medium Trucks:	66.7	65.0	59.3	58.5	66.4	66.6
Heavy Trucks:	70.2	68.6	59.9	62.5	70.2	70.3
Vehicle Noise:	73.5	71.7	66.7	65.4	73.2	73.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	212	457	985
CNEL:	102	221	475	1,024

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Eucalyptus Av. | Job Number: 9776
Road Segment: w/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,256	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	626	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	44.0	feet
Centerline Dist. to Observer:	44.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.38%
Medium Trucks:	81.2%	5.4%	13.4%	4.95%
Heavy Trucks:	82.1%	2.8%	15.1%	3.67%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.75	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	77.72	-16.41	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-17.72	1.31	-1.20	*-5.50*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.8	60.7	59.1	54.5	62.5	63.0
Medium Trucks:	61.4	59.7	53.9	53.2	61.1	61.3
Heavy Trucks:	65.4	63.7	55.0	57.6	65.3	65.4
Vehicle Noise:	68.3	66.5	61.4	60.3	68.1	68.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	152	328
CNEL:	34	73	158	340

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Chino Hills Pkwy. | Job Number: 9776
Road Segment: w/o SR-71

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,640	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,464	vehicles
Vehicle Speed:	40	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:	74.1%	12.6%	13.3%	91.31%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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:	66.51	4.78	1.01	-1.20	*-4.64*	0.000	0.000
Medium Trucks:	77.72	-7.84	1.04	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	82.99	-9.15	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	69.0	67.3	62.8	70.7	71.2
Medium Trucks:	69.7	68.0	62.3	61.5	69.4	69.6
Heavy Trucks:	73.7	72.0	63.3	65.9	73.6	73.7
Vehicle Noise:	76.6	74.8	69.7	68.6	76.4	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	130	281	605	1,304
CNEL:	135	292	628	1,353

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Chino Hills Pkwy. | Job Number: 9776
Road Segment: e/o SR-71

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,624	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,062	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:	74.1%	12.6%	13.3%	91.22%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.78%

Noise Source 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	2.62	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-9.99	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.20	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	68.8	67.1	62.6	70.5	71.0
Medium Trucks:	69.3	67.6	61.8	61.0	68.9	69.2
Heavy Trucks:	72.9	71.2	62.5	65.1	72.8	72.9
Vehicle Noise:	76.1	74.3	69.3	68.0	75.8	76.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	120	258	556	1,199
CNEL:	125	268	578	1,246

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Chino Hills Pkwy. | Job Number: 9776
Road Segment: e/o Ramona Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,155	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,916	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:	74.1%	12.6%	13.3%	91.22%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.78%

Noise Source 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	2.41	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-10.21	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.41	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:	70.7	68.6	66.9	62.4	70.3	70.8
Medium Trucks:	69.1	67.4	61.6	60.8	68.7	69.0
Heavy Trucks:	72.7	71.0	62.3	64.9	72.6	72.7
Vehicle Noise:	75.8	74.0	69.1	67.8	75.6	75.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	250	538	1,160
CNEL:	121	260	560	1,206

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Chino Hills Pkwy. | Job Number: 9776
Road Segment: e/o Monte Vista Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,893	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,089	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:	74.1%	12.6%	13.3%	91.19%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.82%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.96	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-11.66	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-12.82	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:	68.6	66.5	64.8	60.3	68.2	68.7
Medium Trucks:	67.0	65.3	59.5	58.7	66.6	66.8
Heavy Trucks:	70.6	69.0	60.2	62.8	70.5	70.6
Vehicle Noise:	73.7	71.9	67.0	65.7	73.5	73.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	222	477	1,029
CNEL:	107	230	496	1,069

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: El Prado Rd. | Job Number: 9776
Road Segment: e/o Central Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,624	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,362	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:	74.1%	12.6%	13.3%	91.13%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.89%

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:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.03	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	79.45	-9.59	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-10.68	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	69.5	67.8	63.3	71.2	71.7
Medium Trucks:	70.0	68.3	62.5	61.7	69.6	69.8
Heavy Trucks:	73.7	72.0	63.3	65.9	73.6	73.7
Vehicle Noise:	76.8	75.0	70.0	68.8	76.6	76.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	120	259	559	1,204
CNEL:	125	269	581	1,251

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o El Prado Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,584 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,658 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:	74.1%	12.6%	13.3%	91.08%
Medium Trucks:	81.2%	5.4%	13.4%	4.98%
Heavy Trucks:	82.1%	2.8%	15.1%	3.94%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.55	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.07	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.10	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	69.7	68.1	63.5	71.4	72.0
Medium Trucks:	70.0	68.3	62.6	61.8	69.7	69.9
Heavy Trucks:	73.4	71.7	63.0	65.6	73.3	73.4
Vehicle Noise:	76.7	74.9	70.1	68.7	76.5	76.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	257	554	1,194
CNEL:	124	268	577	1,243

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Mountain Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,094 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,509 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:	74.1%	12.6%	13.3%	91.07%
Medium Trucks:	81.2%	5.4%	13.4%	4.98%
Heavy Trucks:	82.1%	2.8%	15.1%	3.95%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.29	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.33	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.33	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.6	69.5	67.8	63.3	71.2	71.7
Medium Trucks:	69.8	68.1	62.3	61.5	69.4	69.7
Heavy Trucks:	73.2	71.5	62.8	65.4	73.1	73.2
Vehicle Noise:	76.5	74.7	69.8	68.5	76.3	76.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	248	534	1,150
CNEL:	120	258	556	1,197

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o San Antonio Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,569 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,557 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:	74.1%	12.6%	13.3%	91.07%
Medium Trucks:	81.2%	5.4%	13.4%	4.98%
Heavy Trucks:	82.1%	2.8%	15.1%	3.95%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.38	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.24	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.26	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	69.6	67.9	63.4	71.3	71.8
Medium Trucks:	69.9	68.2	62.4	61.6	69.5	69.7
Heavy Trucks:	73.2	71.6	62.9	65.5	73.2	73.3
Vehicle Noise:	76.6	74.8	69.9	68.5	76.3	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	251	540	1,164
CNEL:	121	261	562	1,212

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Fern Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,897 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,790 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:	74.1%	12.6%	13.3%	91.09%
Medium Trucks:	81.2%	5.4%	13.4%	4.98%
Heavy Trucks:	82.1%	2.8%	15.1%	3.92%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.76	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.86	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-11.90	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.0	69.9	68.3	63.7	71.7	72.2
Medium Trucks:	70.2	68.5	62.8	62.0	69.9	70.1
Heavy Trucks:	73.6	71.9	63.2	65.8	73.5	73.6
Vehicle Noise:	76.9	75.1	70.3	68.9	76.7	77.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	265	572	1,232
CNEL:	128	276	595	1,282

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,359	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,636	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:	74.1%	12.6%	13.3%	90.54%
Medium Trucks:	81.2%	5.4%	13.4%	4.98%
Heavy Trucks:	82.1%	2.8%	15.1%	4.48%

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:	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	1.48	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.12	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-11.57	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:	71.5	69.4	67.7	63.2	71.1	71.6
Medium Trucks:	69.7	68.0	62.3	61.5	69.4	69.6
Heavy Trucks:	73.6	72.0	63.3	65.9	73.6	73.7
Vehicle Noise:	76.7	74.9	69.9	68.7	76.5	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	132	285	614	1,323
CNEL:	138	296	638	1,375

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: w/o Rincon Meadows Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,158	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,616	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:	74.1%	12.6%	13.3%	91.31%
Medium Trucks:	81.2%	5.4%	13.4%	4.97%
Heavy Trucks:	82.1%	2.8%	15.1%	3.73%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.49	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.16	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.40	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:	71.5	69.4	67.7	63.2	71.1	71.6
Medium Trucks:	69.7	68.0	62.2	61.4	69.3	69.6
Heavy Trucks:	72.8	71.2	62.5	65.1	72.7	72.8
Vehicle Noise:	76.3	74.5	69.7	68.3	76.1	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	124	267	576	1,241
CNEL:	129	278	600	1,293

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Rincon Meadows Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,189	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,519	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	4.97%
Heavy Trucks:	82.1%	2.8%	15.1%	3.73%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.32	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.32	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.56	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	69.2	67.6	63.0	71.0	71.5
Medium Trucks:	69.5	67.8	62.1	61.3	69.2	69.4
Heavy Trucks:	72.7	71.0	62.3	64.9	72.6	72.7
Vehicle Noise:	76.1	74.3	69.6	68.1	75.9	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	261	562	1,211
CNEL:	126	272	585	1,261

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Mill Creek Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,377	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,538	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	4.97%
Heavy Trucks:	82.1%	2.8%	15.1%	3.73%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.35	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.29	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.53	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.4	69.3	67.6	63.1	71.0	71.5
Medium Trucks:	69.6	67.9	62.1	61.3	69.2	69.4
Heavy Trucks:	72.7	71.0	62.3	64.9	72.6	72.7
Vehicle Noise:	76.2	74.4	69.6	68.1	75.9	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	122	262	565	1,217
CNEL:	127	273	588	1,267

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Main St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,382	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,838	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:	74.1%	12.6%	13.3%	91.28%
Medium Trucks:	81.2%	5.4%	13.4%	4.97%
Heavy Trucks:	82.1%	2.8%	15.1%	3.75%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-12.69	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.91	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	67.9	66.2	61.7	69.6	70.1
Medium Trucks:	68.2	66.5	60.7	59.9	67.8	68.0
Heavy Trucks:	71.3	69.7	61.0	63.6	71.2	71.3
Vehicle Noise:	74.8	73.0	68.2	66.7	74.5	74.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	212	456	983
CNEL:	102	221	475	1,024

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Flight Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,755	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,575	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:	74.1%	12.6%	13.3%	91.35%
Medium Trucks:	81.2%	5.4%	13.4%	4.97%
Heavy Trucks:	82.1%	2.8%	15.1%	3.68%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-13.36	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.66	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	67.2	65.5	61.0	68.9	69.4
Medium Trucks:	67.5	65.8	60.0	59.2	67.1	67.4
Heavy Trucks:	70.6	68.9	60.2	62.8	70.5	70.6
Vehicle Noise:	74.1	72.3	67.5	66.0	73.8	74.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	190	409	882
CNEL:	92	198	426	919

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Meadow Valley Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,387	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,439	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:	74.1%	12.6%	13.3%	91.34%
Medium Trucks:	81.2%	5.4%	13.4%	4.97%
Heavy Trucks:	82.1%	2.8%	15.1%	3.68%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-1.11	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.75	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.06	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:	68.9	66.8	65.1	60.6	68.5	69.0
Medium Trucks:	67.1	65.4	59.6	58.8	66.7	67.0
Heavy Trucks:	70.2	68.5	59.8	62.4	70.1	70.2
Vehicle Noise:	73.7	71.9	67.1	65.6	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:	86	186	401	865

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2018 With Phase 1 | Project Name: Altitude
Road Name: Pine Av. | Job Number: 9776
Road Segment: e/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,795	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,779	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:	74.1%	12.6%	13.3%	91.26%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.75%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.20	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.41	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.66	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	67.7	66.0	61.5	69.4	69.9
Medium Trucks:	68.2	66.5	60.7	59.9	67.8	68.1
Heavy Trucks:	71.8	70.1	61.4	64.0	71.7	71.8
Vehicle Noise:	74.9	73.1	68.2	66.9	74.7	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	124	266	574	1,237
CNEL:	129	277	597	1,286

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Central Av.
Road Segment: n/o Chino Hills Pkwy.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,710	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,071	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-9.98	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.28	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	68.1	66.5	62.0	69.9	70.4
Medium Trucks:	68.6	66.9	61.2	60.4	68.3	68.5
Heavy Trucks:	72.1	70.5	61.8	64.4	72.1	72.2
Vehicle Noise:	75.3	73.6	68.6	67.3	75.1	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	132	284	611	1,317
CNEL:	137	295	635	1,369

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Central Av.
Road Segment: s/o Chino Hills Pkwy.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,593	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,059	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-9.99	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.30	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	68.1	66.5	61.9	69.8	70.4
Medium Trucks:	68.6	66.9	61.2	60.4	68.3	68.5
Heavy Trucks:	72.1	70.5	61.8	64.4	72.0	72.2
Vehicle Noise:	75.3	73.5	68.6	67.3	75.1	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	283	610	1,313
CNEL:	137	294	634	1,366

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Central Av.
Road Segment: s/o El Prado Rd.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,079	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,708	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-9.16	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.46	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	69.0	67.3	62.8	70.7	71.2
Medium Trucks:	69.5	67.8	62.0	61.2	69.1	69.3
Heavy Trucks:	73.0	71.3	62.6	65.2	72.9	73.0
Vehicle Noise:	76.2	74.4	69.4	68.1	75.9	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	149	322	693	1,493
CNEL:	155	334	721	1,552

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Euclid Av.
Road Segment: n/o SR-60
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,135	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,814	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.58	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-9.03	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.34	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.3	71.2	69.5	65.0	72.9	73.4
Medium Trucks:	71.7	70.0	64.2	63.4	71.3	71.6
Heavy Trucks:	75.2	73.5	64.8	67.4	75.1	75.2
Vehicle Noise:	78.4	76.6	71.6	70.4	78.2	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	294	633	1,363	2,937
CNEL:	305	658	1,418	3,054

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Euclid Av.
Road Segment: s/o SR-60
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	49,486	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,949	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.71	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-7.90	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.21	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:	74.4	72.3	70.6	66.1	74.0	74.5
Medium Trucks:	72.8	71.1	65.4	64.6	72.5	72.7
Heavy Trucks:	76.3	74.7	66.0	68.6	76.2	76.3
Vehicle Noise:	79.5	77.7	72.8	71.5	79.3	79.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	349	753	1,622	3,494
CNEL:	363	783	1,686	3,633

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Euclid Av.
Road Segment: s/o Walnut St.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,804	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,480	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.28	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-8.33	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.64	2.47	-1.20	-5.21	0.000	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	71.9	70.2	65.7	73.6	74.1
Medium Trucks:	72.4	70.7	64.9	64.1	72.0	72.3
Heavy Trucks:	75.9	74.2	65.5	68.1	75.8	75.9
Vehicle Noise:	79.1	77.3	72.3	71.1	78.9	79.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	327	705	1,518	3,270
CNEL:	340	733	1,578	3,400

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Euclid Av.
Road Segment: s/o Riverside Dr.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	43,877	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,388	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.32	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.30	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.60	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.3	74.2	72.6	68.0	75.9	76.4
Medium Trucks:	74.4	72.7	66.9	66.1	74.0	74.2
Heavy Trucks:	77.1	75.4	66.7	69.3	77.0	77.1
Vehicle Noise:	80.8	79.0	74.4	72.8	80.6	80.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	427	919	1,980	4,266
CNEL:	445	959	2,065	4,450

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Euclid Av.
Road Segment: s/o Chino Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	46,640	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,664	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.58	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.03	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.34	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.6	74.5	72.8	68.3	76.2	76.7
Medium Trucks:	74.6	72.9	67.2	66.4	74.3	74.5
Heavy Trucks:	77.3	75.7	67.0	69.6	77.2	77.4
Vehicle Noise:	81.1	79.3	74.7	73.0	80.9	81.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	444	957	2,062	4,443
CNEL:	463	998	2,151	4,634

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Euclid Av.
Road Segment: s/o Schaefer Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,952	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,595	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.52	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.10	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.40	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.5	74.4	72.8	68.2	76.1	76.7
Medium Trucks:	74.6	72.9	67.1	66.3	74.2	74.4
Heavy Trucks:	77.3	75.6	66.9	69.5	77.2	77.3
Vehicle Noise:	81.0	79.2	74.6	73.0	80.8	81.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	440	948	2,042	4,400
CNEL:	459	989	2,130	4,589

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Euclid Av.
Road Segment: s/o Edison Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,450	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,445	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.37	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.24	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.55	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.4	74.3	72.6	68.1	76.0	76.5
Medium Trucks:	74.4	72.7	67.0	66.2	74.1	74.3
Heavy Trucks:	77.1	75.5	66.8	69.4	77.0	77.1
Vehicle Noise:	80.9	79.1	74.5	72.8	80.6	80.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	430	927	1,997	4,303
CNEL:	449	967	2,083	4,488

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Euclid Av.
Road Segment: s/o Eucalyptus Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,316	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,732	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.65	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.97	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.28	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.6	74.6	72.9	68.4	76.3	76.8
Medium Trucks:	74.7	73.0	67.2	66.4	74.3	74.6
Heavy Trucks:	77.4	75.7	67.0	69.6	77.3	77.4
Vehicle Noise:	81.2	79.3	74.7	73.1	80.9	81.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	449	967	2,082	4,486
CNEL:	468	1,008	2,172	4,679

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Euclid Av.
Road Segment: s/o Merrill Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,421	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,942	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.85	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.76	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.07	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	75.9	73.8	72.1	67.6	75.5	76.0
Medium Trucks:	73.9	72.2	66.4	65.7	73.6	73.8
Heavy Trucks:	76.6	74.9	66.2	68.8	76.5	76.6
Vehicle Noise:	80.4	78.6	73.9	72.3	80.1	80.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	397	856	1,844	3,972
CNEL:	414	893	1,923	4,143

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Euclid Av.
Road Segment: s/o Kimball Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,924	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,092	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.80	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.82	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.12	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	72.7	71.0	66.5	74.4	74.9
Medium Trucks:	72.9	71.2	65.4	64.6	72.5	72.7
Heavy Trucks:	75.5	73.9	65.2	67.8	75.5	75.6
Vehicle Noise:	79.3	77.5	72.9	71.3	79.1	79.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	338	728	1,568	3,379
CNEL:	352	759	1,636	3,524

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Euclid Av.
Road Segment: s/o Bickmore Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,243	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,824	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.40	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-11.21	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.52	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.4	72.3	70.6	66.1	74.0	74.5
Medium Trucks:	72.5	70.8	65.0	64.2	72.1	72.3
Heavy Trucks:	75.1	73.5	64.8	67.4	75.1	75.2
Vehicle Noise:	78.9	77.1	72.5	70.9	78.7	78.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	318	685	1,476	3,180
CNEL:	332	715	1,540	3,317

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Euclid Av.
Road Segment: s/o Pine Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,436	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,544	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.47	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.15	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.45	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.5	74.4	72.7	68.2	76.1	76.6
Medium Trucks:	74.5	72.8	67.1	66.3	74.2	74.4
Heavy Trucks:	77.2	75.6	66.9	69.5	77.1	77.2
Vehicle Noise:	81.0	79.2	74.6	72.9	80.7	81.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	437	941	2,027	4,367
CNEL:	455	981	2,114	4,554

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Flight Av.
Road Segment: n/o Kimball Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,556	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	956	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-1.92	3.26	-1.20	-4.49	0.000	0.000
Medium Trucks:	77.72	-14.53	3.33	-1.20	-4.86	0.000	0.000
Heavy Trucks:	82.99	-15.84	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:	66.7	64.6	62.9	58.4	66.3	66.8
Medium Trucks:	65.3	63.6	57.8	57.1	65.0	65.2
Heavy Trucks:	69.3	67.6	58.9	61.5	69.2	69.3
Vehicle Noise:	72.2	70.4	65.2	64.2	72.0	72.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	87	188	405
CNEL:	42	91	195	421

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Hellman Av.
Road Segment: s/o Kimball Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,074 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,307 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.07	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-13.68	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-14.99	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:	67.2	65.1	63.4	58.9	66.8	67.3
Medium Trucks:	65.6	63.9	58.1	57.4	65.3	65.5
Heavy Trucks:	69.1	67.5	58.7	61.4	69.0	69.1
Vehicle Noise:	72.3	70.5	65.6	64.3	72.1	72.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	145	313	675
CNEL:	70	151	326	702

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Edison Av.
Road Segment: w/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,199 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,020 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-11.79	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-13.10	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	66.3	64.7	60.1	68.0	68.6
Medium Trucks:	66.8	65.1	59.4	58.6	66.5	66.7
Heavy Trucks:	70.3	68.7	60.0	62.6	70.2	70.4
Vehicle Noise:	73.5	71.7	66.8	65.5	73.3	73.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	215	462	996
CNEL:	104	223	481	1,035

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Eucalyptus Av.
Road Segment: w/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,293 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	629 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.73	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-16.35	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-17.66	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.9	60.8	59.1	54.6	62.5	63.0
Medium Trucks:	61.5	59.8	54.0	53.2	61.1	61.3
Heavy Trucks:	65.4	63.8	55.1	57.7	65.4	65.5
Vehicle Noise:	68.4	66.6	61.4	60.4	68.1	68.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	330
CNEL:	34	74	159	343

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Chino Hills Pkwy.
Road Segment: w/o SR-71
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,494 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,549 vehicles
Vehicle Speed:	40 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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:	66.51	4.86	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	77.72	-7.76	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-9.06	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:	71.2	69.1	67.4	62.9	70.8	71.3
Medium Trucks:	69.8	68.1	62.3	61.5	69.4	69.7
Heavy Trucks:	73.8	72.1	63.4	66.0	73.7	73.8
Vehicle Noise:	76.7	74.9	69.7	68.7	76.5	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	132	285	613	1,321
CNEL:	137	295	636	1,371

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Chino Hills Pkwy.
Road Segment: e/o SR-71
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,062	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,106	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.69	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-9.93	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.23	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:	71.0	68.9	67.2	62.7	70.6	71.1
Medium Trucks:	69.4	67.7	61.9	61.1	69.0	69.2
Heavy Trucks:	72.9	71.2	62.5	65.1	72.8	72.9
Vehicle Noise:	76.1	74.3	69.3	68.1	75.8	76.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	120	259	558	1,201
CNEL:	125	269	580	1,249

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Chino Hills Pkwy.
Road Segment: e/o Ramona Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,531	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,953	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.47	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-10.15	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.45	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	68.6	67.0	62.4	70.4	70.9
Medium Trucks:	69.1	67.4	61.7	60.9	68.8	69.0
Heavy Trucks:	72.6	71.0	62.3	64.9	72.6	72.7
Vehicle Noise:	75.8	74.1	69.1	67.8	75.6	75.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	250	539	1,162
CNEL:	121	260	561	1,208

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Chino Hills Pkwy.
Road Segment: e/o Monte Vista Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,104	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,110	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.01	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-11.60	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-12.91	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	66.5	64.8	60.3	68.2	68.7
Medium Trucks:	67.0	65.3	59.5	58.8	66.7	66.9
Heavy Trucks:	70.5	68.9	60.2	62.8	70.4	70.5
Vehicle Noise:	73.7	71.9	67.0	65.7	73.5	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	221	476	1,025
CNEL:	107	230	495	1,066

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: El Prado Rd.
Road Segment: e/o Central Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,752	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,375	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.05	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	79.45	-9.56	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-10.87	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.6	69.5	67.8	63.3	71.2	71.7
Medium Trucks:	70.0	68.3	62.5	61.7	69.6	69.9
Heavy Trucks:	73.5	71.8	63.1	65.7	73.4	73.5
Vehicle Noise:	76.7	74.9	70.0	68.7	76.5	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	256	551	1,188
CNEL:	124	266	573	1,235

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Kimball Av.
Road Segment: e/o El Prado Rd.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,573	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,657	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.55	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.06	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.37	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	69.7	68.1	63.5	71.5	72.0
Medium Trucks:	70.1	68.4	62.6	61.8	69.7	69.9
Heavy Trucks:	73.1	71.5	62.8	65.4	73.0	73.2
Vehicle Noise:	76.6	74.8	70.1	68.6	76.4	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	117	252	544	1,172
CNEL:	122	263	566	1,220

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Kimball Av.
Road Segment: e/o Mountain Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,042	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,504	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.30	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.32	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.63	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.6	69.5	67.8	63.3	71.2	71.7
Medium Trucks:	69.8	68.1	62.3	61.5	69.4	69.7
Heavy Trucks:	72.9	71.2	62.5	65.1	72.8	72.9
Vehicle Noise:	76.4	74.6	69.8	68.3	76.1	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	243	523	1,126
CNEL:	117	253	544	1,173

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Kimball Av.
Road Segment: e/o San Antonio Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,514	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,551	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	36	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	44.0	feet
Centerline Dist. to Observer:	44.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.38	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.24	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.55	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	69.6	67.9	63.4	71.3	71.8
Medium Trucks:	69.9	68.2	62.4	61.6	69.5	69.7
Heavy Trucks:	72.9	71.3	62.6	65.2	72.9	73.0
Vehicle Noise:	76.4	74.6	69.9	68.4	76.2	76.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	246	529	1,140
CNEL:	119	256	551	1,188

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Kimball Av.
Road Segment: e/o Fern Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,858	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,786	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.76	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.86	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.16	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.0	69.9	68.3	63.7	71.7	72.2
Medium Trucks:	70.3	68.6	62.8	62.0	69.9	70.1
Heavy Trucks:	73.3	71.7	63.0	65.6	73.2	73.4
Vehicle Noise:	76.8	75.0	70.3	68.8	76.6	76.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	261	561	1,209
CNEL:	126	271	585	1,259

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Kimball Av.
Road Segment: e/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,486 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,549 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.37	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.24	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.55	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	69.3	67.6	63.1	71.0	71.5
Medium Trucks:	69.6	67.9	62.1	61.3	69.2	69.5
Heavy Trucks:	72.7	71.0	62.3	64.9	72.6	72.7
Vehicle Noise:	76.2	74.4	69.6	68.1	75.9	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	122	262	565	1,218
CNEL:	127	273	589	1,269

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Kimball Av.
Road Segment: w/o Rincon Meadows Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,211 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,621 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.49	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.12	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.43	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:	71.5	69.4	67.7	63.2	71.1	71.6
Medium Trucks:	69.7	68.0	62.3	61.5	69.4	69.6
Heavy Trucks:	72.8	71.1	62.4	65.0	72.7	72.8
Vehicle Noise:	76.3	74.5	69.7	68.3	76.1	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	124	267	576	1,241
CNEL:	129	278	600	1,293

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Kimball Av.
Road Segment: e/o Rincon Meadows Av.
Project Name: Altitude
Job Number: 9776

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:	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.33	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.28	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.59	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	69.2	67.6	63.1	71.0	71.5
Medium Trucks:	69.6	67.9	62.1	61.3	69.2	69.4
Heavy Trucks:	72.6	71.0	62.3	64.9	72.6	72.7
Vehicle Noise:	76.1	74.3	69.6	68.1	75.9	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	261	562	1,210
CNEL:	126	272	585	1,261

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Kimball Av.
Road Segment: e/o Mill Creek Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,447 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,545 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.37	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.25	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.56	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	69.3	67.6	63.1	71.0	71.5
Medium Trucks:	69.6	67.9	62.1	61.3	69.2	69.5
Heavy Trucks:	72.7	71.0	62.3	64.9	72.6	72.7
Vehicle Noise:	76.2	74.4	69.6	68.1	75.9	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	122	262	565	1,217
CNEL:	127	273	588	1,267

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Kimball Av.
Road Segment: e/o Main St.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,344	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,834	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-0.06	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	-13.98	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	67.9	66.2	61.7	69.6	70.1
Medium Trucks:	68.2	66.5	60.7	59.9	67.8	68.0
Heavy Trucks:	71.2	69.6	60.9	63.5	71.2	71.3
Vehicle Noise:	74.7	72.9	68.2	66.7	74.5	74.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	211	454	978
CNEL:	102	220	473	1,019

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Kimball Av.
Road Segment: e/o Flight Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,859	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,586	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-13.30	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.61	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	67.2	65.6	61.0	68.9	69.5
Medium Trucks:	67.5	65.8	60.1	59.3	67.2	67.4
Heavy Trucks:	70.6	69.0	60.3	62.9	70.5	70.6
Vehicle Noise:	74.1	72.3	67.5	66.1	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:	92	199	429	925

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Kimball Av.
Road Segment: e/o Meadow Valley Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,499	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,450	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-1.08	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.69	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.00	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:	68.9	66.8	65.2	60.6	68.6	69.1
Medium Trucks:	67.2	65.5	59.7	58.9	66.8	67.0
Heavy Trucks:	70.2	68.6	59.9	62.5	70.1	70.3
Vehicle Noise:	73.7	71.9	67.2	65.7	73.5	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	180	388	836
CNEL:	87	188	404	871

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 Without Project
Road Name: Pine Av.
Road Segment: e/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,219	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,822	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.27	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.34	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.65	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	67.8	66.1	61.6	69.5	70.0
Medium Trucks:	68.3	66.6	60.8	60.0	67.9	68.1
Heavy Trucks:	71.8	70.1	61.4	64.0	71.7	71.8
Vehicle Noise:	75.0	73.2	68.2	67.0	74.8	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	124	268	578	1,244
CNEL:	129	279	601	1,294

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Central Av. | Job Number: 9776
Road Segment: n/o Chino Hills Pkwy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,803	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,080	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:	74.1%	12.6%	13.3%	91.33%
Medium Trucks:	81.2%	5.4%	13.4%	4.98%
Heavy Trucks:	82.1%	2.8%	15.1%	3.69%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.65	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.98	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.28	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:	70.3	68.2	66.5	62.0	69.9	70.4
Medium Trucks:	68.6	66.9	61.2	60.4	68.3	68.5
Heavy Trucks:	72.1	70.5	61.8	64.4	72.1	72.2
Vehicle Noise:	75.3	73.6	68.6	67.3	75.1	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	132	284	612	1,317
CNEL:	137	295	636	1,370

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Central Av. | Job Number: 9776
Road Segment: s/o Chino Hills Pkwy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,045	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,104	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:	74.1%	12.6%	13.3%	91.17%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.84%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.68	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	-11.07	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:	70.3	68.2	66.5	62.0	69.9	70.4
Medium Trucks:	68.7	67.0	61.2	60.4	68.3	68.5
Heavy Trucks:	72.3	70.7	62.0	64.6	72.3	72.4
Vehicle Noise:	75.5	73.7	68.7	67.5	75.2	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	134	289	623	1,342
CNEL:	140	301	648	1,395

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Central Av. | Job Number: 9776
Road Segment: s/o El Prado Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,510	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,751	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:	74.1%	12.6%	13.3%	91.07%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	3.90%

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	-9.09	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.18	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	69.0	67.3	62.8	70.7	71.2
Medium Trucks:	69.5	67.8	62.1	61.3	69.2	69.4
Heavy Trucks:	73.2	71.6	62.9	65.5	73.2	73.3
Vehicle Noise:	76.3	74.5	69.5	68.3	76.1	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	153	330	711	1,532
CNEL:	159	343	739	1,592

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: n/o SR-60

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,228	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,823	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.32%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.69%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.59	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-9.03	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.34	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.3	71.2	69.5	65.0	72.9	73.4
Medium Trucks:	71.7	70.0	64.2	63.4	71.3	71.6
Heavy Trucks:	75.2	73.5	64.8	67.4	75.1	75.2
Vehicle Noise:	78.4	76.6	71.6	70.4	78.2	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	294	633	1,364	2,939
CNEL:	306	658	1,418	3,056

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o SR-60

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	50,160 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,016 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	90.69%
Medium Trucks:	81.2%	5.4%	13.4%	5.11%
Heavy Trucks:	82.1%	2.8%	15.1%	4.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.74	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-7.75	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.60	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.4	72.3	70.7	66.1	74.0	74.6
Medium Trucks:	73.0	71.3	65.5	64.7	72.6	72.8
Heavy Trucks:	76.9	75.3	66.6	69.2	76.8	77.0
Vehicle Noise:	79.9	78.1	73.0	71.9	79.6	79.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	369	794	1,712	3,688
CNEL:	383	825	1,777	3,829

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Walnut St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,571 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,557 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	90.65%
Medium Trucks:	81.2%	5.4%	13.4%	5.11%
Heavy Trucks:	82.1%	2.8%	15.1%	4.24%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.32	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-8.17	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.97	2.47	-1.20	-5.21	0.000	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	71.9	70.2	65.7	73.6	74.1
Medium Trucks:	72.6	70.9	65.1	64.3	72.2	72.4
Heavy Trucks:	76.5	74.9	66.2	68.8	76.5	76.6
Vehicle Noise:	79.5	77.7	72.5	71.5	79.2	79.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	347	748	1,611	3,471
CNEL:	360	776	1,673	3,604

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Riverside Dr.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,736 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,474 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:	74.1%	12.6%	13.3%	90.65%
Medium Trucks:	81.2%	5.4%	13.4%	5.10%
Heavy Trucks:	82.1%	2.8%	15.1%	4.25%

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	3.37	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.12	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.92	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.4	74.3	72.6	68.1	76.0	76.5
Medium Trucks:	74.6	72.9	67.1	66.3	74.2	74.4
Heavy Trucks:	77.7	76.1	67.4	70.0	77.7	77.8
Vehicle Noise:	81.2	79.4	74.6	73.2	80.9	81.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	451	972	2,094	4,511
CNEL:	470	1,012	2,180	4,697

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Chino Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,592 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,759 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:	74.1%	12.6%	13.3%	90.71%
Medium Trucks:	81.2%	5.4%	13.4%	5.09%
Heavy Trucks:	82.1%	2.8%	15.1%	4.21%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.64	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.87	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.70	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:	76.6	74.5	72.9	68.4	76.3	76.8
Medium Trucks:	74.8	73.1	67.3	66.5	74.4	74.7
Heavy Trucks:	78.0	76.3	67.6	70.2	77.9	78.0
Vehicle Noise:	81.4	79.6	74.9	73.4	81.2	81.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	469	1,010	2,175	4,686
CNEL:	488	1,051	2,265	4,880

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Schaefer Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	46,997	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,700	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:	74.1%	12.6%	13.3%	90.72%
Medium Trucks:	81.2%	5.4%	13.4%	5.08%
Heavy Trucks:	82.1%	2.8%	15.1%	4.21%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.59	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.93	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.75	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.6	74.5	72.8	68.3	76.2	76.7
Medium Trucks:	74.7	73.0	67.3	66.5	74.4	74.6
Heavy Trucks:	77.9	76.3	67.6	70.2	77.8	77.9
Vehicle Noise:	81.4	79.6	74.8	73.3	81.1	81.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	465	1,001	2,156	4,645
CNEL:	484	1,042	2,245	4,838

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Edison Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,711	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,571	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:	74.1%	12.6%	13.3%	90.74%
Medium Trucks:	81.2%	5.4%	13.4%	5.06%
Heavy Trucks:	82.1%	2.8%	15.1%	4.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.47	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.07	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.87	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:	76.5	74.4	72.7	68.2	76.1	76.6
Medium Trucks:	74.6	72.9	67.1	66.3	74.2	74.5
Heavy Trucks:	77.8	76.1	67.4	70.0	77.7	77.8
Vehicle Noise:	81.2	79.4	74.7	73.2	81.0	81.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	456	982	2,115	4,557
CNEL:	475	1,022	2,203	4,745

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Eucalyptus Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	48,793	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,879	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:	74.1%	12.6%	13.3%	90.82%
Medium Trucks:	81.2%	5.4%	13.4%	5.03%
Heavy Trucks:	82.1%	2.8%	15.1%	4.15%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.76	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	-9.64	2.47	-1.20	-5.21	0.000	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	74.7	73.0	68.5	76.4	76.9
Medium Trucks:	74.9	73.2	67.4	66.6	74.5	74.7
Heavy Trucks:	78.0	76.4	67.7	70.3	77.9	78.1
Vehicle Noise:	81.5	79.7	75.0	73.5	81.3	81.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	474	1,021	2,200	4,740
CNEL:	494	1,064	2,291	4,937

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Merrill Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,898	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,090	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:	74.1%	12.6%	13.3%	90.72%
Medium Trucks:	81.2%	5.4%	13.4%	5.04%
Heavy Trucks:	82.1%	2.8%	15.1%	4.24%

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	2.99	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.57	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.32	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:	76.0	73.9	72.2	67.7	75.6	76.1
Medium Trucks:	74.1	72.4	66.6	65.8	73.7	74.0
Heavy Trucks:	77.3	75.7	67.0	69.6	77.3	77.4
Vehicle Noise:	80.8	79.0	74.2	72.7	80.5	80.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	424	914	1,968	4,241
CNEL:	442	951	2,050	4,416

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Kimball Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,046	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,105	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:	74.1%	12.6%	13.3%	90.94%
Medium Trucks:	81.2%	5.4%	13.4%	5.08%
Heavy Trucks:	82.1%	2.8%	15.1%	3.98%

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:	33.941
Medium 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	-10.73	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.79	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.8	72.7	71.0	66.5	74.4	74.9
Medium Trucks:	72.9	71.2	65.5	64.7	72.6	72.8
Heavy Trucks:	75.9	74.2	65.5	68.1	75.8	75.9
Vehicle Noise:	79.5	77.7	73.0	71.4	79.2	79.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	347	747	1,609	3,467
CNEL:	361	778	1,677	3,613

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Bickmore Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,095	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,909	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:	74.1%	12.6%	13.3%	90.86%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	4.12%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium 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	-11.06	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.92	2.47	-1.20	-5.21	0.000	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	72.4	70.8	66.2	74.1	74.6
Medium Trucks:	72.6	70.9	65.1	64.4	72.3	72.5
Heavy Trucks:	75.7	74.1	65.4	68.0	75.7	75.8
Vehicle Noise:	79.2	77.4	72.7	71.2	79.0	79.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	335	722	1,554	3,349
CNEL:	349	752	1,619	3,489

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Euclid Av. | Job Number: 9776
Road Segment: s/o Pine Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	46,092	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,609	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:	74.1%	12.6%	13.3%	91.07%
Medium Trucks:	81.2%	5.4%	13.4%	5.01%
Heavy Trucks:	82.1%	2.8%	15.1%	3.91%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.52	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.07	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.15	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:	76.5	74.4	72.8	68.2	76.1	76.7
Medium Trucks:	74.6	72.9	67.1	66.3	74.2	74.5
Heavy Trucks:	77.5	75.9	67.2	69.8	77.4	77.6
Vehicle Noise:	81.1	79.3	74.7	73.1	80.9	81.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	448	966	2,080	4,482
CNEL:	467	1,006	2,168	4,671

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Flight Av. | Job Number: 9776
Road Segment: n/o Kimball Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,751	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	975	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:	74.1%	12.6%	13.3%	91.05%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.94%

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:	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	-1.84	3.26	-1.20	-4.49	0.000	0.000
Medium Trucks:	77.72	-14.44	3.33	-1.20	-4.86	0.000	0.000
Heavy Trucks:	82.99	-15.48	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:	66.7	64.6	63.0	58.4	66.4	66.9
Medium Trucks:	65.4	63.7	57.9	57.1	65.0	65.3
Heavy Trucks:	69.6	68.0	59.3	61.9	69.6	69.7
Vehicle Noise:	72.4	70.6	65.4	64.4	72.2	72.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	91	195	420
CNEL:	44	94	202	436

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Hellman Av. | Job Number: 9776
Road Segment: s/o Kimball Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,228 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,323 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:	74.1%	12.6%	13.3%	91.40%
Medium Trucks:	81.2%	5.4%	13.4%	4.94%
Heavy Trucks:	82.1%	2.8%	15.1%	3.66%

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:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.01	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-13.68	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-14.99	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	65.2	63.5	59.0	66.9	67.4
Medium Trucks:	65.6	63.9	58.1	57.4	65.3	65.5
Heavy Trucks:	69.1	67.5	58.7	61.4	69.0	69.1
Vehicle Noise:	72.3	70.5	65.6	64.3	72.1	72.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	146	314	676
CNEL:	70	152	327	704

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Edison Av. | Job Number: 9776
Road Segment: w/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,384 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,038 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:	74.1%	12.6%	13.3%	91.38%
Medium Trucks:	81.2%	5.4%	13.4%	4.95%
Heavy Trucks:	82.1%	2.8%	15.1%	3.67%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.86	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-11.79	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-13.10	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	66.4	64.7	60.2	68.1	68.6
Medium Trucks:	66.8	65.1	59.4	58.6	66.5	66.7
Heavy Trucks:	70.3	68.7	60.0	62.6	70.2	70.4
Vehicle Noise:	73.5	71.7	66.8	65.5	73.3	73.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	215	463	998
CNEL:	104	224	482	1,038

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Eucalyptus Av. | Job Number: 9776
Road Segment: w/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,417 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	642 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.47%
Medium Trucks:	81.2%	5.4%	13.4%	4.90%
Heavy Trucks:	82.1%	2.8%	15.1%	3.63%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.64	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-16.35	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-17.66	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.9	60.9	59.2	54.7	62.6	63.1
Medium Trucks:	61.5	59.8	54.0	53.2	61.1	61.3
Heavy Trucks:	65.4	63.8	55.1	57.7	65.4	65.5
Vehicle Noise:	68.4	66.6	61.5	60.4	68.2	68.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	154	332
CNEL:	34	74	160	344

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Chino Hills Pkwy. | Job Number: 9776
Road Segment: w/o SR-71

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,556 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,556 vehicles
Vehicle Speed:	40 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:	74.1%	12.6%	13.3%	91.31%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.69%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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:	66.51	4.86	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	77.72	-7.76	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-9.06	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:	71.2	69.1	67.4	62.9	70.8	71.3
Medium Trucks:	69.8	68.1	62.3	61.5	69.4	69.7
Heavy Trucks:	73.8	72.1	63.4	66.0	73.7	73.8
Vehicle Noise:	76.7	74.9	69.7	68.7	76.5	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	132	285	613	1,321
CNEL:	137	295	637	1,371

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2
Road Name: Chino Hills Pkwy.
Road Segment: e/o SR-71
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,359	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,136	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:	74.1%	12.6%	13.3%	91.12%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	3.86%

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:	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	2.72	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-9.87	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.01	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:	71.0	68.9	67.2	62.7	70.6	71.1
Medium Trucks:	69.4	67.7	62.0	61.2	69.1	69.3
Heavy Trucks:	73.1	71.4	62.7	65.3	73.0	73.1
Vehicle Noise:	76.2	74.4	69.4	68.2	76.0	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	264	569	1,226
CNEL:	127	275	592	1,275

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2
Road Name: Chino Hills Pkwy.
Road Segment: e/o Ramona Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,890	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,989	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:	74.1%	12.6%	13.3%	91.13%
Medium Trucks:	81.2%	5.4%	13.4%	5.01%
Heavy Trucks:	82.1%	2.8%	15.1%	3.86%

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:	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	2.51	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-10.09	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.22	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	68.7	67.0	62.5	70.4	70.9
Medium Trucks:	69.2	67.5	61.7	61.0	68.8	69.1
Heavy Trucks:	72.9	71.2	62.5	65.1	72.8	72.9
Vehicle Noise:	76.0	74.2	69.2	68.0	75.8	76.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	256	551	1,187
CNEL:	123	266	573	1,234

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2
Road Name: Chino Hills Pkwy.
Road Segment: e/o Monte Vista Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,463	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,146	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:	74.1%	12.6%	13.3%	91.07%
Medium Trucks:	81.2%	5.4%	13.4%	5.01%
Heavy Trucks:	82.1%	2.8%	15.1%	3.92%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.07	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-11.52	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-12.59	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:	68.7	66.6	64.9	60.4	68.3	68.8
Medium Trucks:	67.1	65.4	59.6	58.8	66.7	67.0
Heavy Trucks:	70.8	69.2	60.5	63.1	70.8	70.9
Vehicle Noise:	73.9	72.1	67.1	65.9	73.7	73.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	228	491	1,057
CNEL:	110	237	510	1,098

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2
Road Name: El Prado Rd.
Road Segment: e/o Central Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,635	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,463	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:	74.1%	12.6%	13.3%	90.94%
Medium Trucks:	81.2%	5.4%	13.4%	5.01%
Heavy Trucks:	82.1%	2.8%	15.1%	4.05%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.14	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	79.45	-9.44	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-10.37	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	69.6	67.9	63.4	71.3	71.8
Medium Trucks:	70.1	68.4	62.7	61.9	69.8	70.0
Heavy Trucks:	74.0	72.3	63.6	66.2	73.9	74.0
Vehicle Noise:	77.0	75.2	70.1	69.0	76.8	77.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	125	268	578	1,246
CNEL:	129	279	601	1,294

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o El Prado Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,456 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,746 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:	74.1%	12.6%	13.3%	90.84%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	4.14%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.67	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.90	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-11.74	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:	72.0	69.9	68.2	63.7	71.6	72.1
Medium Trucks:	70.2	68.5	62.7	62.0	69.9	70.1
Heavy Trucks:	73.7	72.1	63.4	66.0	73.7	73.8
Vehicle Noise:	77.0	75.2	70.3	69.0	76.8	77.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	124	267	576	1,241
CNEL:	129	278	599	1,291

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Mountain Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,925 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,592 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:	74.1%	12.6%	13.3%	90.81%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	4.17%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.42	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.15	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-11.96	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:	71.7	69.6	67.9	63.4	71.3	71.8
Medium Trucks:	70.0	68.3	62.5	61.7	69.6	69.8
Heavy Trucks:	73.5	71.9	63.2	65.8	73.5	73.6
Vehicle Noise:	76.7	74.9	70.0	68.7	76.5	76.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	120	258	555	1,197
CNEL:	124	268	578	1,245

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o San Antonio Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,397 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,640 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:	74.1%	12.6%	13.3%	90.82%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	4.16%

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:	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	1.50	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.07	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-11.89	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	69.7	68.0	63.5	71.4	71.9
Medium Trucks:	70.0	68.3	62.6	61.8	69.7	69.9
Heavy Trucks:	73.6	72.0	63.2	65.8	73.5	73.6
Vehicle Noise:	76.8	75.0	70.1	68.8	76.6	76.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	261	562	1,210
CNEL:	126	271	584	1,259

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Fern Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,741 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,874 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	90.86%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	4.12%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.87	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.71	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-11.56	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.2	70.1	68.4	63.9	71.8	72.3
Medium Trucks:	70.4	68.7	62.9	62.2	70.0	70.3
Heavy Trucks:	73.9	72.3	63.6	66.2	73.9	74.0
Vehicle Noise:	77.2	75.4	70.5	69.1	76.9	77.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	128	275	593	1,277
CNEL:	133	286	617	1,328

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,927	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,793	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:	74.1%	12.6%	13.3%	89.74%
Medium Trucks:	81.2%	5.4%	13.4%	5.13%
Heavy Trucks:	82.1%	2.8%	15.1%	5.13%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.69	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-10.73	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-10.73	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:	71.7	69.6	67.9	63.4	71.3	71.8
Medium Trucks:	70.1	68.4	62.6	61.9	69.8	70.0
Heavy Trucks:	74.5	72.8	64.1	66.7	74.4	74.5
Vehicle Noise:	77.3	75.5	70.3	69.3	77.0	77.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	145	311	671	1,446
CNEL:	150	323	696	1,500

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: w/o Rincon Meadows Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,715	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,672	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:	74.1%	12.6%	13.3%	91.31%
Medium Trucks:	81.2%	5.4%	13.4%	4.94%
Heavy Trucks:	82.1%	2.8%	15.1%	3.75%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.58	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.09	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.29	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:	71.6	69.5	67.8	63.3	71.2	71.7
Medium Trucks:	69.8	68.1	62.3	61.5	69.4	69.6
Heavy Trucks:	72.9	71.3	62.6	65.2	72.9	73.0
Vehicle Noise:	76.4	74.6	69.8	68.4	76.2	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	126	271	585	1,260
CNEL:	131	283	609	1,312

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Rincon Meadows Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,718	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,572	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	4.95%
Heavy Trucks:	82.1%	2.8%	15.1%	3.75%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-11.25	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.45	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	69.3	67.7	63.1	71.0	71.6
Medium Trucks:	69.6	67.9	62.1	61.3	69.2	69.5
Heavy Trucks:	72.8	71.1	62.4	65.0	72.7	72.8
Vehicle Noise:	76.2	74.4	69.6	68.2	76.0	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	265	570	1,229
CNEL:	128	276	594	1,280

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Mill Creek Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,890	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,589	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:	74.1%	12.6%	13.3%	91.29%
Medium Trucks:	81.2%	5.4%	13.4%	4.95%
Heavy Trucks:	82.1%	2.8%	15.1%	3.76%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.44	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.22	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.42	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:	71.5	69.4	67.7	63.2	71.1	71.6
Medium Trucks:	69.6	67.9	62.2	61.4	69.3	69.5
Heavy Trucks:	72.8	71.2	62.4	65.1	72.7	72.8
Vehicle Noise:	76.3	74.5	69.7	68.2	76.0	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	124	266	573	1,235
CNEL:	129	277	597	1,286

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Main St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,725	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,872	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:	74.1%	12.6%	13.3%	91.26%
Medium Trucks:	81.2%	5.4%	13.4%	4.95%
Heavy Trucks:	82.1%	2.8%	15.1%	3.79%

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:	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	0.03	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-12.62	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.78	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	68.0	66.3	61.8	69.7	70.2
Medium Trucks:	68.2	66.5	60.8	60.0	67.9	68.1
Heavy Trucks:	71.4	69.8	61.1	63.7	71.4	71.5
Vehicle Noise:	74.9	73.1	68.3	66.8	74.6	74.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	215	463	998
CNEL:	104	224	482	1,039

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Flight Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,044	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,604	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:	74.1%	12.6%	13.3%	91.40%
Medium Trucks:	81.2%	5.4%	13.4%	4.94%
Heavy Trucks:	82.1%	2.8%	15.1%	3.66%

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:	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	-0.63	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.30	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.61	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:	69.4	67.3	65.6	61.1	69.0	69.5
Medium Trucks:	67.5	65.8	60.1	59.3	67.2	67.4
Heavy Trucks:	70.6	69.0	60.3	62.9	70.5	70.6
Vehicle Noise:	74.1	72.3	67.6	66.1	73.9	74.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	413	890
CNEL:	93	200	430	927

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Kimball Av. | Job Number: 9776
Road Segment: e/o Meadow Valley Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,653	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,465	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:	74.1%	12.6%	13.3%	91.39%
Medium Trucks:	81.2%	5.4%	13.4%	4.95%
Heavy Trucks:	82.1%	2.8%	15.1%	3.66%

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:	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	-1.03	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.69	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.00	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:	69.0	66.9	65.2	60.7	68.6	69.1
Medium Trucks:	67.2	65.5	59.7	58.9	66.8	67.0
Heavy Trucks:	70.2	68.6	59.9	62.5	70.1	70.3
Vehicle Noise:	73.7	71.9	67.2	65.7	73.5	73.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	389	838
CNEL:	87	188	405	873

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2019 With Phase 1+2 | Project Name: Altitude
Road Name: Pine Av. | Job Number: 9776
Road Segment: e/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,414	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,841	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:	74.1%	12.6%	13.3%	91.22%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.78%

Noise Source 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	-10.31	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.52	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	67.8	66.1	61.6	69.5	70.0
Medium Trucks:	68.3	66.6	60.8	60.0	67.9	68.2
Heavy Trucks:	71.9	70.2	61.5	64.1	71.8	71.9
Vehicle Noise:	75.1	73.3	68.3	67.0	74.8	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	126	271	584	1,259
CNEL:	131	282	608	1,309

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Central Av.
Road Segment: n/o Chino Hills Pkwy.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,317	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,132	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.73	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.89	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.20	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	68.2	66.6	62.0	69.9	70.5
Medium Trucks:	68.7	67.0	61.3	60.5	68.4	68.6
Heavy Trucks:	72.2	70.6	61.9	64.5	72.1	72.3
Vehicle Noise:	75.4	73.6	68.7	67.4	75.2	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	133	287	619	1,334
CNEL:	139	299	644	1,387

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Central Av.
Road Segment: s/o Chino Hills Pkwy.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,162	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,116	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-9.91	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.22	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	68.2	66.5	62.0	69.9	70.4
Medium Trucks:	68.7	67.0	61.2	60.5	68.3	68.6
Heavy Trucks:	72.2	70.6	61.8	64.4	72.1	72.2
Vehicle Noise:	75.4	73.6	68.7	67.4	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	642	1,382

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Central Av.
Road Segment: s/o El Prado Rd.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,742	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,774	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	3.54	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.08	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.39	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	69.0	67.4	62.8	70.8	71.3
Medium Trucks:	69.5	67.8	62.1	61.3	69.2	69.4
Heavy Trucks:	73.0	71.4	62.7	65.3	73.0	73.1
Vehicle Noise:	76.2	74.4	69.5	68.2	76.0	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	151	325	701	1,511
CNEL:	157	338	729	1,571

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Euclid Av.
Road Segment: n/o SR-60
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,879	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,888	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.66	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-8.95	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.26	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.3	71.2	69.6	65.1	73.0	73.5
Medium Trucks:	71.8	70.1	64.3	63.5	71.4	71.6
Heavy Trucks:	75.3	73.6	64.9	67.5	75.2	75.3
Vehicle Noise:	78.5	76.7	71.7	70.4	78.2	78.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	298	641	1,381	2,975
CNEL:	309	666	1,436	3,094

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Euclid Av.
Road Segment: s/o SR-60
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	50,243	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,024	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.78	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-7.84	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.14	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	72.4	70.7	66.2	74.1	74.6
Medium Trucks:	72.9	71.2	65.4	64.6	72.5	72.7
Heavy Trucks:	76.4	74.7	66.0	68.6	76.3	76.4
Vehicle Noise:	79.6	77.8	72.8	71.6	79.4	79.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	353	760	1,638	3,530
CNEL:	367	791	1,704	3,670

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Euclid Av.
Road Segment: s/o Walnut St.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,459	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,546	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.34	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-8.27	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.58	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.0	71.9	70.3	65.7	73.6	74.2
Medium Trucks:	72.4	70.8	65.0	64.2	72.1	72.3
Heavy Trucks:	75.9	74.3	65.6	68.2	75.9	76.0
Vehicle Noise:	79.1	77.4	72.4	71.1	78.9	79.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	330	711	1,533	3,302
CNEL:	343	740	1,594	3,433

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Euclid Av.
Road Segment: s/o Riverside Dr.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,498	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,450	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.38	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.24	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.54	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.4	74.3	72.6	68.1	76.0	76.5
Medium Trucks:	74.4	72.7	67.0	66.2	74.1	74.3
Heavy Trucks:	77.1	75.5	66.8	69.4	77.0	77.2
Vehicle Noise:	80.9	79.1	74.5	72.8	80.6	80.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	431	928	1,999	4,306
CNEL:	449	968	2,085	4,491

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Euclid Av.
Road Segment: s/o Chino Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,308	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,731	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.65	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.97	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.28	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.6	74.5	72.9	68.4	76.3	76.8
Medium Trucks:	74.7	73.0	67.2	66.4	74.3	74.6
Heavy Trucks:	77.4	75.7	67.0	69.6	77.3	77.4
Vehicle Noise:	81.2	79.3	74.7	73.1	80.9	81.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	449	966	2,082	4,486
CNEL:	468	1,008	2,172	4,679

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Euclid Av.
Road Segment: s/o Schaefer Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	46,589	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,659	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.58	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.04	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.34	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.6	74.5	72.8	68.3	76.2	76.7
Medium Trucks:	74.6	72.9	67.2	66.4	74.3	74.5
Heavy Trucks:	77.3	75.7	67.0	69.6	77.2	77.4
Vehicle Noise:	81.1	79.3	74.7	73.0	80.8	81.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	444	957	2,061	4,440
CNEL:	463	998	2,150	4,631

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Euclid Av.
Road Segment: s/o Edison Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,021	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,502	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.43	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.19	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.49	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:	76.4	74.3	72.7	68.1	76.1	76.6
Medium Trucks:	74.5	72.8	67.0	66.2	74.1	74.4
Heavy Trucks:	77.2	75.5	66.8	69.4	77.1	77.2
Vehicle Noise:	80.9	79.1	74.5	72.9	80.7	81.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	434	935	2,014	4,340
CNEL:	453	975	2,101	4,527

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Euclid Av.
Road Segment: s/o Eucalyptus Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,912	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,791	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.70	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.91	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.22	2.47	-1.20	-5.21	0.000	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	74.6	72.9	68.4	76.3	76.8
Medium Trucks:	74.8	73.1	67.3	66.5	74.4	74.6
Heavy Trucks:	77.4	75.8	67.1	69.7	77.4	77.5
Vehicle Noise:	81.2	79.4	74.8	73.2	81.0	81.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	452	975	2,100	4,524
CNEL:	472	1,017	2,190	4,718

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Euclid Av.
Road Segment: s/o Merrill Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,000	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,000	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.92	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.70	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.01	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:	75.9	73.8	72.2	67.6	75.5	76.0
Medium Trucks:	74.0	72.3	66.5	65.7	73.6	73.8
Heavy Trucks:	76.7	75.0	66.3	68.9	76.6	76.7
Vehicle Noise:	80.4	78.6	74.0	72.4	80.2	80.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	401	864	1,862	4,011
CNEL:	418	901	1,942	4,183

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Euclid Av.
Road Segment: s/o Kimball Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,354	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,135	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.86	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.76	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.06	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	72.8	71.1	66.6	74.5	75.0
Medium Trucks:	72.9	71.2	65.5	64.7	72.6	72.8
Heavy Trucks:	75.6	74.0	65.2	67.8	75.5	75.6
Vehicle Noise:	79.4	77.6	73.0	71.3	79.1	79.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	341	735	1,583	3,410
CNEL:	356	766	1,651	3,556

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Euclid Av.
Road Segment: s/o Bickmore Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,612	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,861	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.46	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-11.15	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.46	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.5	72.4	70.7	66.2	74.1	74.6
Medium Trucks:	72.5	70.8	65.1	64.3	72.2	72.4
Heavy Trucks:	75.2	73.6	64.8	67.4	75.1	75.2
Vehicle Noise:	79.0	77.2	72.6	70.9	78.7	79.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	321	691	1,489	3,208
CNEL:	335	721	1,553	3,346

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Euclid Av.
Road Segment: s/o Pine Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	46,165	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,617	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.54	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.08	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.38	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:	76.5	74.4	72.8	68.2	76.2	76.7
Medium Trucks:	74.6	72.9	67.1	66.3	74.2	74.5
Heavy Trucks:	77.3	75.6	66.9	69.5	77.2	77.3
Vehicle Noise:	81.0	79.2	74.6	73.0	80.8	81.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	441	951	2,048	4,413
CNEL:	460	992	2,136	4,603

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Flight Av.
Road Segment: n/o Kimball Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,604	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	960	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-1.90	3.26	-1.20	-4.49	0.000	0.000
Medium Trucks:	77.72	-14.51	3.33	-1.20	-4.86	0.000	0.000
Heavy Trucks:	82.99	-15.82	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:	66.7	64.6	62.9	58.4	66.3	66.8
Medium Trucks:	65.3	63.6	57.9	57.1	65.0	65.2
Heavy Trucks:	69.3	67.7	58.9	61.5	69.2	69.3
Vehicle Noise:	72.2	70.4	65.3	64.2	72.0	72.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	88	189	407
CNEL:	42	91	196	422

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Hellman Av.
Road Segment: s/o Kimball Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,275	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,328	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.00	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-13.62	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-14.93	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	65.2	63.5	59.0	66.9	67.4
Medium Trucks:	65.7	64.0	58.2	57.4	65.3	65.5
Heavy Trucks:	69.2	67.5	58.8	61.4	69.1	69.2
Vehicle Noise:	72.4	70.6	65.6	64.4	72.2	72.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	147	316	682
CNEL:	71	153	329	709

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Edison Av.
Road Segment: w/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,568	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,057	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	0.90	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-11.72	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-13.02	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:	68.5	66.4	64.7	60.2	68.1	68.6
Medium Trucks:	66.9	65.2	59.4	58.6	66.5	66.8
Heavy Trucks:	70.4	68.7	60.0	62.6	70.3	70.4
Vehicle Noise:	73.6	71.8	66.9	65.6	73.4	73.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	217	468	1,008
CNEL:	105	226	486	1,048

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Eucalyptus Av.
Road Segment: w/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,389	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	639	vehicles
Vehicle Speed:	40	mph
Near/Far Lane Distance:	36	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	44.0	feet
Centerline Dist. to Observer:	44.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.67	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-16.28	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-17.59	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.9	60.8	59.2	54.6	62.5	63.1
Medium Trucks:	61.5	59.8	54.1	53.3	61.2	61.4
Heavy Trucks:	65.5	63.9	55.2	57.8	65.4	65.5
Vehicle Noise:	68.4	66.6	61.5	60.4	68.2	68.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	155	334
CNEL:	35	75	161	347

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Chino Hills Pkwy.
Road Segment: w/o SR-71
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	46,396	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,640	vehicles
Vehicle Speed:	40	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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:	66.51	4.94	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	77.72	-7.67	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-8.98	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	69.2	67.5	63.0	70.9	71.4
Medium Trucks:	69.9	68.2	62.4	61.6	69.5	69.8
Heavy Trucks:	73.9	72.2	63.5	66.1	73.8	73.9
Vehicle Noise:	76.8	75.0	69.8	68.8	76.5	76.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	134	288	621	1,338
CNEL:	139	299	645	1,389

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Chino Hills Pkwy.
Road Segment: e/o SR-71
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,651	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,165	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.77	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-9.84	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.15	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:	71.0	68.9	67.3	62.8	70.7	71.2
Medium Trucks:	69.4	67.8	62.0	61.2	69.1	69.3
Heavy Trucks:	72.9	71.3	62.6	65.2	72.9	73.0
Vehicle Noise:	76.1	74.4	69.4	68.1	75.9	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	122	262	565	1,217
CNEL:	127	273	587	1,265

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Chino Hills Pkwy.
Road Segment: e/o Ramona Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,086	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,009	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.55	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-10.06	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.37	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	68.7	67.1	62.5	70.4	71.0
Medium Trucks:	69.2	67.5	61.8	61.0	68.9	69.1
Heavy Trucks:	72.7	71.1	62.4	65.0	72.6	72.8
Vehicle Noise:	75.9	74.1	69.2	67.9	75.7	76.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	118	253	546	1,176
CNEL:	122	263	568	1,223

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Chino Hills Pkwy.
Road Segment: e/o Monte Vista Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,708	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,471	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.70	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.92	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-12.23	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	67.2	65.5	61.0	68.9	69.4
Medium Trucks:	67.7	66.0	60.2	59.4	67.3	67.6
Heavy Trucks:	71.2	69.5	60.8	63.4	71.1	71.2
Vehicle Noise:	74.4	72.6	67.7	66.4	74.2	74.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	245	529	1,139
CNEL:	118	255	550	1,184

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: El Prado Rd.
Road Segment: e/o Central Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,306	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,431	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.12	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	79.45	-9.49	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-10.80	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	69.6	67.9	63.4	71.3	71.8
Medium Trucks:	70.1	68.4	62.6	61.8	69.7	69.9
Heavy Trucks:	73.6	71.9	63.2	65.8	73.5	73.6
Vehicle Noise:	76.8	75.0	70.0	68.7	76.5	76.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	120	259	557	1,201
CNEL:	125	269	580	1,249

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Kimball Av.
Road Segment: e/o El Prado Rd.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,986	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,699	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.62	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.99	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.30	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:	71.9	69.8	68.1	63.6	71.5	72.0
Medium Trucks:	70.1	68.4	62.7	61.9	69.8	70.0
Heavy Trucks:	73.2	71.5	62.8	65.4	73.1	73.2
Vehicle Noise:	76.7	74.9	70.1	68.6	76.4	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	118	255	549	1,184
CNEL:	123	266	572	1,233

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Kimball Av.
Road Segment: e/o Mountain Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,412	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,541	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.36	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.25	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.56	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.6	69.5	67.9	63.3	71.3	71.8
Medium Trucks:	69.9	68.2	62.4	61.6	69.5	69.7
Heavy Trucks:	72.9	71.3	62.6	65.2	72.8	73.0
Vehicle Noise:	76.4	74.6	69.9	68.4	76.2	76.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	245	528	1,137
CNEL:	118	255	550	1,185

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Kimball Av.
Road Segment: e/o San Antonio Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,880	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,588	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.44	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.18	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.48	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	69.6	68.0	63.4	71.3	71.8
Medium Trucks:	69.9	68.2	62.5	61.7	69.6	69.8
Heavy Trucks:	73.0	71.4	62.6	65.3	72.9	73.0
Vehicle Noise:	76.5	74.7	69.9	68.5	76.3	76.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	248	534	1,151
CNEL:	120	258	557	1,199

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Kimball Av.
Road Segment: e/o Fern Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,241	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,824	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.82	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.80	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.10	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.1	70.0	68.3	63.8	71.7	72.2
Medium Trucks:	70.3	68.6	62.9	62.1	70.0	70.2
Heavy Trucks:	73.4	71.7	63.0	65.6	73.3	73.4
Vehicle Noise:	76.9	75.1	70.3	68.8	76.6	76.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	122	263	566	1,220
CNEL:	127	274	590	1,271

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Kimball Av.
Road Segment: e/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,764 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,576 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.42	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.20	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.50	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	69.3	67.7	63.1	71.1	71.6
Medium Trucks:	69.6	68.0	62.2	61.4	69.3	69.5
Heavy Trucks:	72.7	71.1	62.4	65.0	72.6	72.8
Vehicle Noise:	76.2	74.4	69.7	68.2	76.0	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	264	570	1,227
CNEL:	128	275	593	1,278

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Kimball Av.
Road Segment: w/o Rincon Meadows Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,508 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,651 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.54	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.07	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.38	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:	71.6	69.5	67.8	63.3	71.2	71.7
Medium Trucks:	69.8	68.1	62.3	61.5	69.4	69.6
Heavy Trucks:	72.8	71.2	62.5	65.1	72.8	72.9
Vehicle Noise:	76.3	74.5	69.8	68.3	76.1	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	125	269	580	1,250
CNEL:	130	281	605	1,302

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Kimball Av.
Road Segment: e/o Rincon Meadows Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,530 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,553 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.38	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.23	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.54	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.4	69.3	67.6	63.1	71.0	71.5
Medium Trucks:	69.6	67.9	62.1	61.4	69.3	69.5
Heavy Trucks:	72.7	71.0	62.3	64.9	72.6	72.7
Vehicle Noise:	76.2	74.4	69.6	68.1	75.9	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	122	263	566	1,220
CNEL:	127	274	590	1,270

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Kimball Av.
Road Segment: e/o Mill Creek Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,732 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,573 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-11.20	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.51	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	69.3	67.7	63.1	71.1	71.6
Medium Trucks:	69.6	67.9	62.2	61.4	69.3	69.5
Heavy Trucks:	72.7	71.1	62.4	65.0	72.6	72.7
Vehicle Noise:	76.2	74.4	69.6	68.2	76.0	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	264	569	1,226
CNEL:	128	275	593	1,277

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Kimball Av.
Road Segment: e/o Main St.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,489	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,849	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-12.64	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.94	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:	70.0	67.9	66.2	61.7	69.6	70.1
Medium Trucks:	68.2	66.5	60.7	60.0	67.9	68.1
Heavy Trucks:	71.3	69.6	60.9	63.5	71.2	71.3
Vehicle Noise:	74.8	73.0	68.2	66.7	74.5	74.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	212	456	983
CNEL:	102	221	475	1,024

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Kimball Av.
Road Segment: e/o Flight Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,055	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,606	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-0.63	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.25	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.56	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	67.3	65.6	61.1	69.0	69.5
Medium Trucks:	67.6	65.9	60.1	59.3	67.2	67.5
Heavy Trucks:	70.7	69.0	60.3	62.9	70.6	70.7
Vehicle Noise:	74.2	72.4	67.6	66.1	73.9	74.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	193	415	895
CNEL:	93	201	433	932

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Kimball Av.
Road Segment: e/o Meadow Valley Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,688	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,469	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-1.02	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.64	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.94	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:	69.0	66.9	65.2	60.7	68.6	69.1
Medium Trucks:	67.2	65.5	59.7	59.0	66.9	67.1
Heavy Trucks:	70.3	68.6	59.9	62.5	70.2	70.3
Vehicle Noise:	73.8	72.0	67.2	65.7	73.5	73.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	182	392	844
CNEL:	88	189	408	879

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 Without Project
Road Name: Pine Av.
Road Segment: e/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,745	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,875	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.35	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.26	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.57	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:	70.0	67.9	66.2	61.7	69.6	70.1
Medium Trucks:	68.4	66.7	60.9	60.1	68.0	68.2
Heavy Trucks:	71.8	70.2	61.5	64.1	71.8	71.9
Vehicle Noise:	75.1	73.3	68.3	67.0	74.8	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	126	271	585	1,260
CNEL:	131	282	608	1,310

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Central Av.
Road Segment: n/o Chino Hills Pkwy.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,502	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,150	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	76	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	60.0	feet
Centerline Dist. to Observer:	60.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.35%
Medium Trucks:	81.2%	5.4%	13.4%	4.97%
Heavy Trucks:	82.1%	2.8%	15.1%	3.68%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-9.89	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.20	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	68.3	66.6	62.1	70.0	70.5
Medium Trucks:	68.7	67.0	61.3	60.5	68.4	68.6
Heavy Trucks:	72.2	70.6	61.9	64.5	72.1	72.3
Vehicle Noise:	75.4	73.6	68.7	67.4	75.2	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	134	288	620	1,336
CNEL:	139	299	645	1,389

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Central Av.
Road Segment: s/o Chino Hills Pkwy.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,912	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,191	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:	74.1%	12.6%	13.3%	91.09%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.92%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.80	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.82	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.86	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	68.3	66.6	62.1	70.0	70.5
Medium Trucks:	68.8	67.1	61.3	60.5	68.4	68.7
Heavy Trucks:	72.6	70.9	62.2	64.8	72.5	72.6
Vehicle Noise:	75.6	73.8	68.8	67.6	75.4	75.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	138	297	639	1,376
CNEL:	143	308	664	1,430

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Central Av.
Road Segment: s/o El Prado Rd.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,373	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,837	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:	74.1%	12.6%	13.3%	90.93%
Medium Trucks:	81.2%	5.4%	13.4%	5.05%
Heavy Trucks:	82.1%	2.8%	15.1%	4.02%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.59	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-8.97	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.95	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	69.1	67.4	62.9	70.8	71.3
Medium Trucks:	69.7	68.0	62.2	61.4	69.3	69.5
Heavy Trucks:	73.5	71.8	63.1	65.7	73.4	73.5
Vehicle Noise:	76.5	74.7	69.7	68.5	76.3	76.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	157	339	730	1,572
CNEL:	163	352	758	1,633

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Euclid Av.
Road Segment: n/o SR-60
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,064	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,906	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.34%
Medium Trucks:	81.2%	5.4%	13.4%	4.98%
Heavy Trucks:	82.1%	2.8%	15.1%	3.68%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.69	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-8.95	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.26	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.4	71.3	69.6	65.1	73.0	73.5
Medium Trucks:	71.8	70.1	64.3	63.5	71.4	71.6
Heavy Trucks:	75.3	73.6	64.9	67.5	75.2	75.3
Vehicle Noise:	78.5	76.7	71.7	70.5	78.2	78.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	298	642	1,382	2,978
CNEL:	310	667	1,437	3,097

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Euclid Av.
Road Segment: s/o SR-60
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	51,455	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,145	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	90.35%
Medium Trucks:	81.2%	5.4%	13.4%	5.17%
Heavy Trucks:	82.1%	2.8%	15.1%	4.48%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.84	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-7.59	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.21	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:	74.5	72.4	70.8	66.2	74.1	74.6
Medium Trucks:	73.1	71.4	65.7	64.9	72.8	73.0
Heavy Trucks:	77.3	75.7	67.0	69.6	77.2	77.3
Vehicle Noise:	80.1	78.3	73.1	72.1	79.9	80.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	384	827	1,782	3,840
CNEL:	398	858	1,849	3,984

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Euclid Av.
Road Segment: s/o Walnut St.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	46,856	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,686	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	90.29%
Medium Trucks:	81.2%	5.4%	13.4%	5.17%
Heavy Trucks:	82.1%	2.8%	15.1%	4.54%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.43	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-7.99	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.56	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.1	72.0	70.3	65.8	73.7	74.2
Medium Trucks:	72.7	71.0	65.3	64.5	72.4	72.6
Heavy Trucks:	77.0	75.3	66.6	69.2	76.9	77.0
Vehicle Noise:	79.7	78.0	72.7	71.7	79.5	79.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	362	781	1,682	3,625
CNEL:	376	810	1,745	3,760

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Euclid Av.
Road Segment: s/o Riverside Dr.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	46,081	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,608	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:	74.1%	12.6%	13.3%	90.31%
Medium Trucks:	81.2%	5.4%	13.4%	5.15%
Heavy Trucks:	82.1%	2.8%	15.1%	4.54%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium 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	3.48	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.95	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.51	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.5	74.4	72.7	68.2	76.1	76.6
Medium Trucks:	74.7	73.0	67.3	66.5	74.4	74.6
Heavy Trucks:	78.2	76.5	67.8	70.4	78.1	78.2
Vehicle Noise:	81.4	79.7	74.8	73.4	81.2	81.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	470	1,013	2,182	4,702
CNEL:	489	1,054	2,271	4,892

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Euclid Av.
Road Segment: s/o Chino Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	49,076	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,908	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:	74.1%	12.6%	13.3%	90.40%
Medium Trucks:	81.2%	5.4%	13.4%	5.13%
Heavy Trucks:	82.1%	2.8%	15.1%	4.47%

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	3.76	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.70	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.30	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.8	74.7	73.0	68.5	76.4	76.9
Medium Trucks:	75.0	73.3	67.5	66.7	74.6	74.8
Heavy Trucks:	78.4	76.7	68.0	70.6	78.3	78.4
Vehicle Noise:	81.7	79.9	75.0	73.7	81.5	81.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	488	1,051	2,264	4,878
CNEL:	508	1,094	2,356	5,076

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Euclid Av.
Road Segment: s/o Schaefer Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	48,542	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,854	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:	74.1%	12.6%	13.3%	90.43%
Medium Trucks:	81.2%	5.4%	13.4%	5.11%
Heavy Trucks:	82.1%	2.8%	15.1%	4.47%

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	3.72	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.77	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.35	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:	76.7	74.6	73.0	68.4	76.3	76.8
Medium Trucks:	74.9	73.2	67.4	66.7	74.6	74.8
Heavy Trucks:	78.3	76.7	68.0	70.6	78.2	78.3
Vehicle Noise:	81.6	79.8	75.0	73.6	81.4	81.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	484	1,042	2,246	4,838
CNEL:	504	1,085	2,337	5,035

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Euclid Av.
Road Segment: s/o Edison Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,407	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,741	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:	74.1%	12.6%	13.3%	90.48%
Medium Trucks:	81.2%	5.4%	13.4%	5.06%
Heavy Trucks:	82.1%	2.8%	15.1%	4.45%

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	3.62	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.90	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.47	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.6	74.5	72.9	68.3	76.2	76.7
Medium Trucks:	74.8	73.1	67.3	66.5	74.4	74.6
Heavy Trucks:	78.2	76.5	67.8	70.4	78.1	78.2
Vehicle Noise:	81.5	79.7	74.9	73.5	81.3	81.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	475	1,024	2,206	4,753
CNEL:	495	1,066	2,296	4,946

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Euclid Av.
Road Segment: s/o Eucalyptus Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	50,730	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,073	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:	74.1%	12.6%	13.3%	90.61%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	4.37%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium 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	3.92	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.65	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.25	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:	76.9	74.8	73.2	68.6	76.5	77.0
Medium Trucks:	75.0	73.3	67.6	66.8	74.7	74.9
Heavy Trucks:	78.4	76.8	68.1	70.7	78.3	78.4
Vehicle Noise:	81.8	80.0	75.2	73.7	81.5	81.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	494	1,064	2,292	4,938
CNEL:	514	1,108	2,386	5,141

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Euclid Av.
Road Segment: s/o Merrill Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	42,818	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,282	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:	74.1%	12.6%	13.3%	90.49%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	4.49%

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	3.17	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.38	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.87	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:	76.2	74.1	72.4	67.9	75.8	76.3
Medium Trucks:	74.3	72.6	66.8	66.0	73.9	74.2
Heavy Trucks:	77.8	76.1	67.4	70.0	77.7	77.8
Vehicle Noise:	81.1	79.3	74.4	73.1	80.9	81.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	445	959	2,065	4,449
CNEL:	463	998	2,149	4,630

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Euclid Av.
Road Segment: s/o Kimball Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,861	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,186	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:	74.1%	12.6%	13.3%	90.82%
Medium Trucks:	81.2%	5.4%	13.4%	5.08%
Heavy Trucks:	82.1%	2.8%	15.1%	4.11%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium 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	-10.62	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.54	2.47	-1.20	-5.21	0.000	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	72.8	71.1	66.6	74.5	75.0
Medium Trucks:	73.1	71.4	65.6	64.8	72.7	72.9
Heavy Trucks:	76.1	74.5	65.8	68.4	76.0	76.2
Vehicle Noise:	79.6	77.8	73.1	71.6	79.4	79.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	356	767	1,652	3,559
CNEL:	371	799	1,721	3,708

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Euclid Av.
Road Segment: s/o Bickmore Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,241	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,024	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:	74.1%	12.6%	13.3%	90.67%
Medium Trucks:	81.2%	5.4%	13.4%	5.01%
Heavy Trucks:	82.1%	2.8%	15.1%	4.32%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.67	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.91	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.55	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:	74.7	72.6	70.9	66.4	74.3	74.8
Medium Trucks:	72.8	71.1	65.3	64.5	72.4	72.6
Heavy Trucks:	76.1	74.5	65.8	68.4	76.0	76.1
Vehicle Noise:	79.5	77.7	72.9	71.5	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	781	1,684	3,627

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Euclid Av.
Road Segment: s/o Pine Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,418	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,742	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:	74.1%	12.6%	13.3%	90.97%
Medium Trucks:	81.2%	5.4%	13.4%	5.01%
Heavy Trucks:	82.1%	2.8%	15.1%	4.02%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.64	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.95	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.91	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:	76.6	74.5	72.9	68.3	76.3	76.8
Medium Trucks:	74.7	73.0	67.3	66.5	74.4	74.6
Heavy Trucks:	77.8	76.1	67.4	70.0	77.7	77.8
Vehicle Noise:	81.3	79.5	74.8	73.3	81.1	81.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	460	991	2,136	4,602
CNEL:	480	1,033	2,226	4,795

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Flight Av.
Road Segment: n/o Kimball Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,979	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	998	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:	74.1%	12.6%	13.3%	90.97%
Medium Trucks:	81.2%	5.4%	13.4%	4.98%
Heavy Trucks:	82.1%	2.8%	15.1%	4.05%

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:	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	-1.75	3.26	-1.20	-4.49	0.000	0.000
Medium Trucks:	77.72	-14.36	3.33	-1.20	-4.86	0.000	0.000
Heavy Trucks:	82.99	-15.26	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:	66.8	64.7	63.1	58.5	66.5	67.0
Medium Trucks:	65.5	63.8	58.0	57.2	65.1	65.3
Heavy Trucks:	69.9	68.2	59.5	62.1	69.8	69.9
Vehicle Noise:	72.6	70.8	65.5	64.6	72.4	72.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	200	431
CNEL:	45	96	207	446

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Hellman Av.
Road Segment: s/o Kimball Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,584 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,358 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:	74.1%	12.6%	13.3%	91.50%
Medium Trucks:	81.2%	5.4%	13.4%	4.89%
Heavy Trucks:	82.1%	2.8%	15.1%	3.62%

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:	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	-0.89	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-13.62	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-14.93	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:	67.4	65.3	63.6	59.1	67.0	67.5
Medium Trucks:	65.7	64.0	58.2	57.4	65.3	65.5
Heavy Trucks:	69.2	67.5	58.8	61.4	69.1	69.2
Vehicle Noise:	72.4	70.6	65.7	64.4	72.2	72.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	318	685
CNEL:	71	154	331	713

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Edison Av.
Road Segment: w/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,939 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,094 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:	74.1%	12.6%	13.3%	91.45%
Medium Trucks:	81.2%	5.4%	13.4%	4.91%
Heavy Trucks:	82.1%	2.8%	15.1%	3.63%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	0.98	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-11.72	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-13.02	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:	68.6	66.5	64.8	60.3	68.2	68.7
Medium Trucks:	66.9	65.2	59.4	58.6	66.5	66.8
Heavy Trucks:	70.4	68.7	60.0	62.6	70.3	70.4
Vehicle Noise:	73.6	71.8	66.9	65.6	73.4	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	218	470	1,012
CNEL:	105	227	488	1,052

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Eucalyptus Av.
Road Segment: w/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,636 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	664 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.62%
Medium Trucks:	81.2%	5.4%	13.4%	4.81%
Heavy Trucks:	82.1%	2.8%	15.1%	3.56%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.49	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-16.28	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-17.59	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.1	61.0	59.3	54.8	62.7	63.2
Medium Trucks:	61.5	59.8	54.1	53.3	61.2	61.4
Heavy Trucks:	65.5	63.9	55.2	57.8	65.4	65.5
Vehicle Noise:	68.5	66.7	61.6	60.5	68.3	68.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	72	156	336
CNEL:	35	75	162	349

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Chino Hills Pkwy.
Road Segment: w/o SR-71
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	46,520 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,652 vehicles
Vehicle Speed:	40 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:	74.1%	12.6%	13.3%	91.32%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.69%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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:	66.51	4.96	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	77.72	-7.67	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-8.98	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	69.2	67.5	63.0	70.9	71.4
Medium Trucks:	69.9	68.2	62.4	61.6	69.5	69.8
Heavy Trucks:	73.9	72.2	63.5	66.1	73.8	73.9
Vehicle Noise:	76.8	75.0	69.8	68.8	76.5	76.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	134	288	621	1,339
CNEL:	139	299	645	1,390

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Chino Hills Pkwy.
Road Segment: e/o SR-71
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,092	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,209	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:	74.1%	12.6%	13.3%	91.01%
Medium Trucks:	81.2%	5.4%	13.4%	5.03%
Heavy Trucks:	82.1%	2.8%	15.1%	3.96%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.82	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-9.75	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-10.80	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	69.0	67.3	62.8	70.7	71.2
Medium Trucks:	69.5	67.8	62.1	61.3	69.2	69.4
Heavy Trucks:	73.3	71.6	62.9	65.5	73.2	73.3
Vehicle Noise:	76.4	74.6	69.5	68.3	76.1	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	126	271	583	1,256
CNEL:	131	281	606	1,305

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Chino Hills Pkwy.
Road Segment: e/o Ramona Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,651	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,065	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:	74.1%	12.6%	13.3%	91.03%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	3.95%

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:	68.46	2.62	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-9.97	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.00	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	68.8	67.1	62.6	70.5	71.0
Medium Trucks:	69.3	67.6	61.9	61.1	69.0	69.2
Heavy Trucks:	73.1	71.4	62.7	65.3	73.0	73.1
Vehicle Noise:	76.1	74.4	69.3	68.1	75.9	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	122	262	565	1,217
CNEL:	127	273	587	1,265

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Chino Hills Pkwy.
Road Segment: e/o Monte Vista Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,273	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,527	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:	74.1%	12.6%	13.3%	90.97%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	4.01%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.78	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.80	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.78	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	67.3	65.6	61.1	69.0	69.5
Medium Trucks:	67.8	66.1	60.3	59.6	67.5	67.7
Heavy Trucks:	71.6	70.0	61.3	63.9	71.6	71.7
Vehicle Noise:	74.7	72.9	67.8	66.7	74.4	74.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	256	551	1,188
CNEL:	123	266	573	1,234

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: El Prado Rd.
Road Segment: e/o Central Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,687	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,569	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:	74.1%	12.6%	13.3%	90.71%
Medium Trucks:	81.2%	5.4%	13.4%	5.04%
Heavy Trucks:	82.1%	2.8%	15.1%	4.25%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.26	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	79.45	-9.29	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-10.03	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	69.7	68.0	63.5	71.4	71.9
Medium Trucks:	70.3	68.6	62.8	62.0	69.9	70.1
Heavy Trucks:	74.3	72.7	64.0	66.6	74.3	74.4
Vehicle Noise:	77.2	75.5	70.3	69.2	77.0	77.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	129	278	600	1,292
CNEL:	134	289	623	1,342

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Kimball Av.
Road Segment: e/o El Prado Rd.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,367 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,837 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:	74.1%	12.6%	13.3%	90.56%
Medium Trucks:	81.2%	5.4%	13.4%	5.05%
Heavy Trucks:	82.1%	2.8%	15.1%	4.39%

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:	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	1.80	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.73	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-11.34	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:	72.1	70.0	68.3	63.8	71.7	72.2
Medium Trucks:	70.4	68.7	62.9	62.1	70.0	70.2
Heavy Trucks:	74.1	72.5	63.8	66.4	74.1	74.2
Vehicle Noise:	77.2	75.5	70.5	69.2	77.0	77.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	129	279	600	1,293
CNEL:	134	290	624	1,344

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Kimball Av.
Road Segment: e/o Mountain Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,793 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,679 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:	74.1%	12.6%	13.3%	90.51%
Medium Trucks:	81.2%	5.4%	13.4%	5.06%
Heavy Trucks:	82.1%	2.8%	15.1%	4.43%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.55	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.98	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-11.55	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	69.7	68.1	63.5	71.5	72.0
Medium Trucks:	70.1	68.4	62.7	61.9	69.8	70.0
Heavy Trucks:	73.9	72.3	63.6	66.2	73.9	74.0
Vehicle Noise:	77.0	75.2	70.2	69.0	76.8	77.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	125	269	580	1,249
CNEL:	130	280	602	1,298

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Kimball Av.
Road Segment: e/o San Antonio Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,261 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,726 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:	74.1%	12.6%	13.3%	90.53%
Medium Trucks:	81.2%	5.4%	13.4%	5.05%
Heavy Trucks:	82.1%	2.8%	15.1%	4.42%

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:	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	1.63	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.90	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-11.49	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:	71.9	69.8	68.1	63.6	71.5	72.0
Medium Trucks:	70.2	68.5	62.7	62.0	69.9	70.1
Heavy Trucks:	74.0	72.4	63.6	66.2	73.9	74.0
Vehicle Noise:	77.1	75.3	70.3	69.1	76.9	77.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	126	272	586	1,262
CNEL:	131	283	609	1,312

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Kimball Av.
Road Segment: e/o Fern Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,622 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,962 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:	74.1%	12.6%	13.3%	90.59%
Medium Trucks:	81.2%	5.4%	13.4%	5.05%
Heavy Trucks:	82.1%	2.8%	15.1%	4.36%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.99	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.55	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-11.18	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.3	70.2	68.5	64.0	71.9	72.4
Medium Trucks:	70.6	68.9	63.1	62.3	70.2	70.4
Heavy Trucks:	74.3	72.7	64.0	66.6	74.2	74.3
Vehicle Noise:	77.4	75.6	70.7	69.4	77.2	77.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	133	286	616	1,328
CNEL:	138	297	641	1,381

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Kimball Av.
Road Segment: e/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,404 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,040 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:	74.1%	12.6%	13.3%	89.15%
Medium Trucks:	81.2%	5.4%	13.4%	5.12%
Heavy Trucks:	82.1%	2.8%	15.1%	5.73%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.04	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-10.38	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-9.88	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.1	70.0	68.3	63.8	71.7	72.2
Medium Trucks:	70.5	68.8	63.0	62.2	70.1	70.3
Heavy Trucks:	75.3	73.7	65.0	67.6	75.3	75.4
Vehicle Noise:	77.9	76.1	70.8	69.9	77.7	77.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	159	343	739	1,591
CNEL:	165	355	765	1,649

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Kimball Av.
Road Segment: w/o Rincon Meadows Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,501 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,750 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:	74.1%	12.6%	13.3%	91.37%
Medium Trucks:	81.2%	5.4%	13.4%	4.88%
Heavy Trucks:	82.1%	2.8%	15.1%	3.74%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.71	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.02	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.17	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:	71.7	69.6	68.0	63.4	71.3	71.9
Medium Trucks:	69.8	68.1	62.4	61.6	69.5	69.7
Heavy Trucks:	73.1	71.4	62.7	65.3	73.0	73.1
Vehicle Noise:	76.5	74.7	69.9	68.5	76.3	76.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	128	276	595	1,282
CNEL:	134	288	620	1,335

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Kimball Av.
Road Segment: e/o Rincon Meadows Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,461 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,646 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:	74.1%	12.6%	13.3%	91.36%
Medium Trucks:	81.2%	5.4%	13.4%	4.89%
Heavy Trucks:	82.1%	2.8%	15.1%	3.75%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.54	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.18	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.32	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:	71.6	69.5	67.8	63.3	71.2	71.7
Medium Trucks:	69.7	68.0	62.2	61.4	69.3	69.5
Heavy Trucks:	72.9	71.2	62.5	65.1	72.8	72.9
Vehicle Noise:	76.3	74.5	69.8	68.3	76.1	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	125	270	581	1,251
CNEL:	130	281	605	1,303

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Kimball Av.
Road Segment: e/o Mill Creek Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,601 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,660 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:	74.1%	12.6%	13.3%	91.34%
Medium Trucks:	81.2%	5.4%	13.4%	4.90%
Heavy Trucks:	82.1%	2.8%	15.1%	3.76%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.56	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.14	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.29	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:	71.6	69.5	67.8	63.3	71.2	71.7
Medium Trucks:	69.7	68.0	62.2	61.4	69.3	69.6
Heavy Trucks:	72.9	71.3	62.6	65.2	72.9	73.0
Vehicle Noise:	76.4	74.6	69.8	68.3	76.1	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	126	271	583	1,257
CNEL:	131	282	607	1,309

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Kimball Av.
Road Segment: e/o Main St.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,235	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,923	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:	74.1%	12.6%	13.3%	91.29%
Medium Trucks:	81.2%	5.4%	13.4%	4.89%
Heavy Trucks:	82.1%	2.8%	15.1%	3.81%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	0.15	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-12.56	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.64	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:	70.2	68.1	66.4	61.9	69.8	70.3
Medium Trucks:	68.3	66.6	60.8	60.0	67.9	68.2
Heavy Trucks:	71.6	69.9	61.2	63.8	71.5	71.6
Vehicle Noise:	75.0	73.2	68.4	67.0	74.8	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	102	219	472	1,016
CNEL:	106	228	491	1,058

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Kimball Av.
Road Segment: e/o Flight Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,426	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,643	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:	74.1%	12.6%	13.3%	91.50%
Medium Trucks:	81.2%	5.4%	13.4%	4.89%
Heavy Trucks:	82.1%	2.8%	15.1%	3.62%

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:	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	-13.25	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.56	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	67.4	65.7	61.2	69.1	69.6
Medium Trucks:	67.6	65.9	60.1	59.3	67.2	67.5
Heavy Trucks:	70.7	69.0	60.3	62.9	70.6	70.7
Vehicle Noise:	74.2	72.4	67.7	66.2	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	435	938

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Kimball Av.
Road Segment: e/o Meadow Valley Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,997	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,500	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:	74.1%	12.6%	13.3%	91.48%
Medium Trucks:	81.2%	5.4%	13.4%	4.90%
Heavy Trucks:	82.1%	2.8%	15.1%	3.62%

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:	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	-0.92	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.64	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.94	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:	69.1	67.0	65.3	60.8	68.7	69.2
Medium Trucks:	67.2	65.5	59.7	59.0	66.9	67.1
Heavy Trucks:	70.3	68.6	59.9	62.5	70.2	70.3
Vehicle Noise:	73.8	72.0	67.3	65.8	73.6	73.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	393	848
CNEL:	88	190	410	883

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC 2020 With Proj Buildout
Road Name: Pine Av.
Road Segment: e/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,120	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,912	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:	74.1%	12.6%	13.3%	91.19%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.82%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.40	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	-11.37	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:	70.0	67.9	66.2	61.7	69.6	70.1
Medium Trucks:	68.4	66.7	60.9	60.2	68.0	68.3
Heavy Trucks:	72.0	70.4	61.7	64.3	72.0	72.1
Vehicle Noise:	75.2	73.4	68.4	67.2	75.0	75.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	128	277	596	1,284
CNEL:	133	288	619	1,335

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Central Av.
Road Segment: n/o Chino Hills Pkwy.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,371 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,737 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	3.49	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.12	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.43	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	69.0	67.3	62.8	70.7	71.2
Medium Trucks:	69.5	67.8	62.0	61.2	69.1	69.4
Heavy Trucks:	73.0	71.3	62.6	65.2	72.9	73.0
Vehicle Noise:	76.2	74.4	69.5	68.2	76.0	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	150	323	697	1,501
CNEL:	156	336	724	1,561

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Central Av.
Road Segment: s/o Chino Hills Pkwy.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,026 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,003 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.54	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.07	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.38	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	68.0	66.4	61.9	69.8	70.3
Medium Trucks:	68.5	66.8	61.1	60.3	68.2	68.4
Heavy Trucks:	72.0	70.4	61.7	64.3	72.0	72.1
Vehicle Noise:	75.2	73.5	68.5	67.2	75.0	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	130	279	602	1,297
CNEL:	135	291	626	1,349

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Central Av.
Road Segment: s/o El Prado Rd.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,574 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,257 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.90	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.72	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.03	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	68.4	66.7	62.2	70.1	70.6
Medium Trucks:	68.9	67.2	61.4	60.6	68.5	68.8
Heavy Trucks:	72.4	70.7	62.0	64.6	72.3	72.4
Vehicle Noise:	75.6	73.8	68.9	67.6	75.4	75.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	137	295	636	1,369
CNEL:	142	307	661	1,424

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Euclid Av.
Road Segment: n/o SR-60
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	53,712 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,371 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	5.07	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-7.55	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.85	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.7	72.7	71.0	66.5	74.4	74.9
Medium Trucks:	73.2	71.5	65.7	64.9	72.8	73.0
Heavy Trucks:	76.7	75.0	66.3	68.9	76.6	76.7
Vehicle Noise:	79.9	78.1	73.1	71.8	79.6	79.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	369	795	1,713	3,690
CNEL:	384	827	1,781	3,837

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Euclid Av.
Road Segment: s/o SR-60
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	51,616 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,162 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.90	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-7.72	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.03	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.6	72.5	70.8	66.3	74.2	74.7
Medium Trucks:	73.0	71.3	65.5	64.7	72.6	72.9
Heavy Trucks:	76.5	74.8	66.1	68.7	76.4	76.5
Vehicle Noise:	79.7	77.9	73.0	71.7	79.5	79.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	359	774	1,668	3,594
CNEL:	374	805	1,735	3,737

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Euclid Av.
Road Segment: s/o Walnut St.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	49,711 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,971 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.73	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-7.88	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.19	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.4	72.3	70.6	66.1	74.0	74.5
Medium Trucks:	72.8	71.1	65.4	64.6	72.5	72.7
Heavy Trucks:	76.3	74.7	66.0	68.6	76.3	76.4
Vehicle Noise:	79.5	77.7	72.8	71.5	79.3	79.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	350	755	1,627	3,505
CNEL:	364	785	1,692	3,644

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Euclid Av.
Road Segment: s/o Riverside Dr.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	56,213 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,621 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.39	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.22	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.53	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:	77.4	75.3	73.6	69.1	77.0	77.5
Medium Trucks:	75.5	73.8	68.0	67.2	75.1	75.3
Heavy Trucks:	78.1	76.5	67.8	70.4	78.1	78.2
Vehicle Noise:	81.9	80.1	75.5	73.9	81.7	81.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	503	1,084	2,336	5,032
CNEL:	525	1,131	2,436	5,249

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Euclid Av.
Road Segment: s/o Chino Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	59,653 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,965 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.65	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-7.96	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.27	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	77.7	75.6	73.9	69.4	77.3	77.8
Medium Trucks:	75.7	74.0	68.2	67.5	75.4	75.6
Heavy Trucks:	78.4	76.7	68.0	70.6	78.3	78.4
Vehicle Noise:	82.2	80.4	75.7	74.1	81.9	82.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	524	1,128	2,430	5,236
CNEL:	546	1,176	2,535	5,461

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Euclid Av.
Road Segment: s/o Schaefer Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	59,946	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,995	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.67	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-7.94	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.25	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:	77.7	75.6	73.9	69.4	77.3	77.8
Medium Trucks:	75.7	74.0	68.3	67.5	75.4	75.6
Heavy Trucks:	78.4	76.8	68.1	70.7	78.3	78.4
Vehicle Noise:	82.2	80.4	75.8	74.1	81.9	82.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	525	1,132	2,438	5,253
CNEL:	548	1,180	2,543	5,479

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Euclid Av.
Road Segment: s/o Edison Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,169	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,717	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.63	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.98	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.29	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.6	74.5	72.9	68.3	76.3	76.8
Medium Trucks:	74.7	73.0	67.2	66.4	74.3	74.6
Heavy Trucks:	77.4	75.7	67.0	69.6	77.3	77.4
Vehicle Noise:	81.1	79.3	74.7	73.1	80.9	81.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	448	965	2,078	4,477
CNEL:	467	1,006	2,167	4,669

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Euclid Av.
Road Segment: s/o Eucalyptus Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	49,456	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.84	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.78	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.08	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.8	74.7	73.1	68.5	76.5	77.0
Medium Trucks:	74.9	73.2	67.4	66.6	74.5	74.8
Heavy Trucks:	77.6	75.9	67.2	69.8	77.5	77.6
Vehicle Noise:	81.3	79.5	74.9	73.3	81.1	81.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	462	995	2,145	4,620
CNEL:	482	1,038	2,237	4,819

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Euclid Av.
Road Segment: s/o Merrill Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	52,205	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,221	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.07	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.54	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.85	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	77.1	75.0	73.3	68.8	76.7	77.2
Medium Trucks:	75.1	73.4	67.7	66.9	74.8	75.0
Heavy Trucks:	77.8	76.2	67.5	70.1	77.7	77.8
Vehicle Noise:	81.6	79.8	75.2	73.5	81.3	81.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	479	1,032	2,223	4,790
CNEL:	500	1,076	2,319	4,996

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Euclid Av.
Road Segment: s/o Kimball Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,981	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,798	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.69	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.92	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.23	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	73.6	71.9	67.4	75.3	75.8
Medium Trucks:	73.8	72.1	66.3	65.5	73.4	73.6
Heavy Trucks:	76.4	74.8	66.1	68.7	76.4	76.5
Vehicle Noise:	80.2	78.4	73.8	72.2	80.0	80.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	387	835	1,799	3,875
CNEL:	404	871	1,876	4,041

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Euclid Av.
Road Segment: s/o Bickmore Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,747	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,575	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.43	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.19	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.49	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	73.3	71.7	67.1	75.1	75.6
Medium Trucks:	73.5	71.8	66.0	65.2	73.1	73.4
Heavy Trucks:	76.2	74.5	65.8	68.4	76.1	76.2
Vehicle Noise:	79.9	78.1	73.5	71.9	79.7	80.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	372	802	1,727	3,721
CNEL:	388	836	1,802	3,881

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Euclid Av.
Road Segment: s/o Pine Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	57,841	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,784	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.52	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.10	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.40	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	77.5	75.4	73.8	69.2	77.1	77.6
Medium Trucks:	75.6	73.9	68.1	67.3	75.2	75.4
Heavy Trucks:	78.3	76.6	67.9	70.5	78.2	78.3
Vehicle Noise:	82.0	80.2	75.6	74.0	81.8	82.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	513	1,105	2,381	5,129
CNEL:	535	1,153	2,483	5,350

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Flight Av.
Road Segment: n/o Kimball Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,755	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	176	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-9.28	3.26	-1.20	-4.49	0.000	0.000
Medium Trucks:	77.72	-21.89	3.33	-1.20	-4.86	0.000	0.000
Heavy Trucks:	82.99	-23.20	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:	59.3	57.2	55.5	51.0	58.9	59.4
Medium Trucks:	58.0	56.3	50.5	49.7	57.6	57.8
Heavy Trucks:	61.9	60.3	51.6	54.2	61.8	62.0
Vehicle Noise:	64.8	63.0	57.9	56.8	64.6	64.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	61	131
CNEL:	14	29	63	136

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Hellman Av.
Road Segment: s/o Kimball Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,591 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,759 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	0.22	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-12.39	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-13.70	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:	68.5	66.4	64.7	60.2	68.1	68.6
Medium Trucks:	66.9	65.2	59.4	58.6	66.5	66.8
Heavy Trucks:	70.4	68.7	60.0	62.6	70.3	70.4
Vehicle Noise:	73.6	71.8	66.9	65.6	73.4	73.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	382	822
CNEL:	86	184	397	855

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Edison Av.
Road Segment: w/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,657 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,866 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.34	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	-11.58	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	67.8	66.2	61.6	69.6	70.1
Medium Trucks:	68.3	66.6	60.9	60.1	68.0	68.2
Heavy Trucks:	71.8	70.2	61.5	64.1	71.8	71.9
Vehicle Noise:	75.0	73.3	68.3	67.0	74.8	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	126	271	584	1,257
CNEL:	131	282	607	1,307

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Eucalyptus Av.
Road Segment: w/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	530 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.48	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-17.09	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-18.40	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.1	60.0	58.3	53.8	61.7	62.2
Medium Trucks:	60.7	59.0	53.3	52.5	60.4	60.6
Heavy Trucks:	64.7	63.1	54.3	56.9	64.6	64.7
Vehicle Noise:	67.6	65.8	60.7	59.6	67.4	67.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	137	295
CNEL:	31	66	142	306

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Chino Hills Pkwy.
Road Segment: w/o SR-71
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,665 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,467 vehicles
Vehicle Speed:	40 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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:	66.51	4.78	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	77.72	-7.84	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-9.14	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	69.0	67.3	62.8	70.7	71.2
Medium Trucks:	69.7	68.0	62.3	61.5	69.4	69.6
Heavy Trucks:	73.7	72.0	63.3	65.9	73.6	73.7
Vehicle Noise:	76.6	74.8	69.7	68.6	76.4	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	130	281	606	1,305
CNEL:	135	292	629	1,354

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Chino Hills Pkwy.
Road Segment: e/o SR-71
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,344	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,834	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.29	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-10.32	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.63	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:	70.6	68.5	66.8	62.3	70.2	70.7
Medium Trucks:	69.0	67.3	61.5	60.7	68.6	68.8
Heavy Trucks:	72.5	70.8	62.1	64.7	72.4	72.5
Vehicle Noise:	75.7	73.9	68.9	67.7	75.4	75.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	244	525	1,130
CNEL:	118	253	546	1,175

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Chino Hills Pkwy.
Road Segment: e/o Ramona Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,399	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,840	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.30	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-10.31	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.62	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:	70.6	68.5	66.8	62.3	70.2	70.7
Medium Trucks:	69.0	67.3	61.5	60.7	68.6	68.8
Heavy Trucks:	72.5	70.8	62.1	64.7	72.4	72.5
Vehicle Noise:	75.7	73.9	68.9	67.7	75.5	75.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	244	525	1,132
CNEL:	118	254	546	1,177

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Chino Hills Pkwy.
Road Segment: e/o Monte Vista Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,323	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,332	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.45	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-11.17	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-12.48	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.0	65.3	60.8	68.7	69.2
Medium Trucks:	67.4	65.7	60.0	59.2	67.1	67.3
Heavy Trucks:	70.9	69.3	60.6	63.2	70.9	71.0
Vehicle Noise:	74.2	72.4	67.4	66.1	73.9	74.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	236	509	1,096
CNEL:	114	246	529	1,140

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: El Prado Rd.
Road Segment: e/o Central Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,906	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,891	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	0.53	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	79.45	-12.08	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-13.39	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	67.0	65.3	60.8	68.7	69.2
Medium Trucks:	67.5	65.8	60.0	59.2	67.1	67.3
Heavy Trucks:	71.0	69.3	60.6	63.2	70.9	71.0
Vehicle Noise:	74.2	72.4	67.4	66.2	74.0	74.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	375	807
CNEL:	84	181	390	839

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Kimball Av.
Road Segment: e/o El Prado Rd.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,551 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,155 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.64	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.97	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.28	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:	70.9	68.8	67.2	62.6	70.5	71.1
Medium Trucks:	69.1	67.4	61.7	60.9	68.8	69.0
Heavy Trucks:	72.2	70.6	61.9	64.5	72.1	72.2
Vehicle Noise:	75.7	73.9	69.1	67.7	75.5	75.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	102	220	473	1,019
CNEL:	106	229	493	1,061

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Kimball Av.
Road Segment: e/o Mountain Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,375 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,938 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	0.18	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.43	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.74	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:	70.5	68.4	66.7	62.2	70.1	70.6
Medium Trucks:	68.7	67.0	61.2	60.4	68.3	68.5
Heavy Trucks:	71.7	70.1	61.4	64.0	71.7	71.8
Vehicle Noise:	75.2	73.4	68.7	67.2	75.0	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	204	441	949
CNEL:	99	213	459	989

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Kimball Av.
Road Segment: e/o San Antonio Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,184 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,918 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	0.14	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.48	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.78	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	68.3	66.7	62.1	70.0	70.5
Medium Trucks:	68.6	66.9	61.2	60.4	68.3	68.5
Heavy Trucks:	71.7	70.1	61.3	64.0	71.6	71.7
Vehicle Noise:	75.2	73.4	68.6	67.2	75.0	75.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	94	203	438	943
CNEL:	98	212	456	982

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Kimball Av.
Road Segment: e/o Fern Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,873 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,987 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-12.32	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.63	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:	70.6	68.5	66.8	62.3	70.2	70.7
Medium Trucks:	68.8	67.1	61.3	60.5	68.4	68.7
Heavy Trucks:	71.9	70.2	61.5	64.1	71.8	71.9
Vehicle Noise:	75.4	73.6	68.8	67.3	75.1	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	208	448	965
CNEL:	101	217	467	1,005

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Kimball Av.
Road Segment: e/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,690 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,169 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-11.94	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.25	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	68.6	66.9	62.4	70.3	70.8
Medium Trucks:	68.9	67.2	61.4	60.6	68.5	68.8
Heavy Trucks:	72.0	70.3	61.6	64.2	71.9	72.0
Vehicle Noise:	75.5	73.7	68.9	67.4	75.2	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	236	508	1,094
CNEL:	114	245	529	1,139

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Kimball Av.
Road Segment: w/o Rincon Meadows Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,571 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,257 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	0.85	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.77	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.08	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:	70.9	68.8	67.1	62.6	70.5	71.0
Medium Trucks:	69.1	67.4	61.6	60.8	68.7	68.9
Heavy Trucks:	72.1	70.5	61.8	64.4	72.1	72.2
Vehicle Noise:	75.6	73.8	69.1	67.6	75.4	75.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	242	521	1,123
CNEL:	117	252	543	1,170

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Kimball Av.
Road Segment: e/o Rincon Meadows Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,102 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,610 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.48	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.14	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.45	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:	71.5	69.4	67.7	63.2	71.1	71.6
Medium Trucks:	69.7	68.0	62.2	61.4	69.3	69.6
Heavy Trucks:	72.8	71.1	62.4	65.0	72.7	72.8
Vehicle Noise:	76.3	74.5	69.7	68.2	76.0	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	124	267	574	1,238
CNEL:	129	278	598	1,289

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Kimball Av.
Road Segment: e/o Mill Creek Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,233 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,823 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.82	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-10.80	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.11	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	69.7	68.1	63.5	71.5	72.0
Medium Trucks:	70.0	68.3	62.6	61.8	69.7	69.9
Heavy Trucks:	73.1	71.5	62.8	65.4	73.0	73.1
Vehicle Noise:	76.6	74.8	70.0	68.6	76.4	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	130	281	605	1,304
CNEL:	136	293	630	1,358

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Kimball Av.
Road Segment: e/o Main St.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,615	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,062	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	3.40	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-9.22	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-10.53	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.4	71.3	69.6	65.1	73.0	73.5
Medium Trucks:	71.6	69.9	64.2	63.4	71.3	71.5
Heavy Trucks:	74.7	73.0	64.3	66.9	74.6	74.7
Vehicle Noise:	78.2	76.4	71.6	70.2	78.0	78.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	166	358	771	1,662
CNEL:	173	373	803	1,731

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Kimball Av.
Road Segment: e/o Flight Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,827	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,483	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-0.98	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.59	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.90	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:	69.0	66.9	65.3	60.7	68.7	69.2
Medium Trucks:	67.2	65.6	59.8	59.0	66.9	67.1
Heavy Trucks:	70.3	68.7	60.0	62.6	70.2	70.4
Vehicle Noise:	73.8	72.0	67.3	65.8	73.6	73.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	394	849
CNEL:	88	190	410	884

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Kimball Av.
Road Segment: e/o Meadow Valley Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,489	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,449	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-1.08	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.69	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.00	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:	68.9	66.8	65.2	60.6	68.6	69.1
Medium Trucks:	67.1	65.5	59.7	58.9	66.8	67.0
Heavy Trucks:	70.2	68.6	59.9	62.5	70.1	70.3
Vehicle Noise:	73.7	71.9	67.2	65.7	73.5	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	180	388	836
CNEL:	87	188	404	871

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/o Limonite
Road Name: Pine Av.
Road Segment: e/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,570	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,057	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	3.85	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-8.77	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.07	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:	71.5	69.4	67.7	63.2	71.1	71.6
Medium Trucks:	69.9	68.2	62.4	61.6	69.5	69.7
Heavy Trucks:	73.3	71.7	63.0	65.6	73.3	73.4
Vehicle Noise:	76.6	74.8	69.8	68.5	76.3	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	159	342	736	1,585
CNEL:	165	355	765	1,648

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Central Av.
Road Segment: n/o Chino Hills Pkwy.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,556 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,756 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:	74.1%	12.6%	13.3%	91.34%
Medium Trucks:	81.2%	5.4%	13.4%	4.98%
Heavy Trucks:	82.1%	2.8%	15.1%	3.68%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	3.52	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.12	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.43	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	69.0	67.4	62.8	70.7	71.2
Medium Trucks:	69.5	67.8	62.0	61.2	69.1	69.4
Heavy Trucks:	73.0	71.3	62.6	65.2	72.9	73.0
Vehicle Noise:	76.2	74.4	69.5	68.2	76.0	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	150	324	697	1,502
CNEL:	156	337	725	1,562

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Central Av.
Road Segment: s/o Chino Hills Pkwy.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,776 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,078 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:	74.1%	12.6%	13.3%	91.08%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.93%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.64	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.98	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.01	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	68.1	66.5	61.9	69.9	70.4
Medium Trucks:	68.6	66.9	61.2	60.4	68.3	68.5
Heavy Trucks:	72.4	70.8	62.1	64.7	72.3	72.4
Vehicle Noise:	75.5	73.7	68.7	67.5	75.3	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	134	290	624	1,344
CNEL:	140	301	648	1,397

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Central Av.
Road Segment: s/o El Prado Rd.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,205 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,320 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:	74.1%	12.6%	13.3%	90.87%
Medium Trucks:	81.2%	5.4%	13.4%	5.06%
Heavy Trucks:	82.1%	2.8%	15.1%	4.08%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.96	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.59	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.52	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	68.5	66.8	62.3	70.2	70.7
Medium Trucks:	69.0	67.3	61.6	60.8	68.7	68.9
Heavy Trucks:	72.9	71.2	62.5	65.1	72.8	72.9
Vehicle Noise:	75.9	74.1	69.0	67.9	75.7	75.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	309	666	1,434
CNEL:	149	321	691	1,489

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Euclid Av.
Road Segment: n/o SR-60
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	53,897 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,390 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.33%
Medium Trucks:	81.2%	5.4%	13.4%	4.98%
Heavy Trucks:	82.1%	2.8%	15.1%	3.69%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	5.08	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-7.55	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.85	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.8	72.7	71.0	66.5	74.4	74.9
Medium Trucks:	73.2	71.5	65.7	64.9	72.8	73.0
Heavy Trucks:	76.7	75.0	66.3	68.9	76.6	76.7
Vehicle Noise:	79.9	78.1	73.1	71.9	79.6	79.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	369	796	1,714	3,693
CNEL:	384	827	1,783	3,840

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Euclid Av.
Road Segment: s/o SR-60
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	52,828 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,283 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	90.38%
Medium Trucks:	81.2%	5.4%	13.4%	5.17%
Heavy Trucks:	82.1%	2.8%	15.1%	4.46%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.95	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-7.47	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.12	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.6	72.5	70.9	66.3	74.3	74.8
Medium Trucks:	73.2	71.5	65.8	65.0	72.9	73.1
Heavy Trucks:	77.4	75.8	67.0	69.6	77.3	77.4
Vehicle Noise:	80.2	78.4	73.2	72.2	80.0	80.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	390	841	1,811	3,901
CNEL:	405	872	1,879	4,048

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Euclid Av.
Road Segment: s/o Walnut St.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	51,108 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,111 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	90.38%
Medium Trucks:	81.2%	5.4%	13.4%	5.16%
Heavy Trucks:	82.1%	2.8%	15.1%	4.47%

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:	68.46	4.81	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-7.63	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.25	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.5	72.4	70.7	66.2	74.1	74.6
Medium Trucks:	73.1	71.4	65.6	64.8	72.7	73.0
Heavy Trucks:	77.3	75.6	66.9	69.5	77.2	77.3
Vehicle Noise:	80.1	78.3	73.1	72.1	79.9	80.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	382	823	1,773	3,819
CNEL:	396	854	1,839	3,962

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Euclid Av.
Road Segment: s/o Riverside Dr.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	57,796 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,780 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:	74.1%	12.6%	13.3%	90.51%
Medium Trucks:	81.2%	5.4%	13.4%	5.12%
Heavy Trucks:	82.1%	2.8%	15.1%	4.37%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium 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	4.48	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.00	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.69	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	77.5	75.4	73.7	69.2	77.1	77.6
Medium Trucks:	75.7	74.0	68.2	67.4	75.3	75.5
Heavy Trucks:	79.0	77.3	68.6	71.2	78.9	79.0
Vehicle Noise:	82.4	80.6	75.7	74.3	82.1	82.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	540	1,163	2,506	5,400
CNEL:	562	1,211	2,609	5,621

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Euclid Av.
Road Segment: s/o Chino Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	61,421 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	6,142 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:	74.1%	12.6%	13.3%	90.58%
Medium Trucks:	81.2%	5.4%	13.4%	5.10%
Heavy Trucks:	82.1%	2.8%	15.1%	4.32%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.74	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-7.75	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.47	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:	77.7	75.6	74.0	69.5	77.4	77.9
Medium Trucks:	75.9	74.2	68.5	67.7	75.6	75.8
Heavy Trucks:	79.2	77.5	68.8	71.4	79.1	79.2
Vehicle Noise:	82.6	80.8	76.0	74.6	82.4	82.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	560	1,207	2,599	5,600
CNEL:	583	1,256	2,706	5,830

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Euclid Av.
Road Segment: s/o Schaefer Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	61,899	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	6,190	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:	74.1%	12.6%	13.3%	90.61%
Medium Trucks:	81.2%	5.4%	13.4%	5.08%
Heavy Trucks:	82.1%	2.8%	15.1%	4.30%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium 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	4.78	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-7.73	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.46	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	77.8	75.7	74.0	69.5	77.4	77.9
Medium Trucks:	75.9	74.2	68.5	67.7	75.6	75.8
Heavy Trucks:	79.2	77.6	68.9	71.5	79.1	79.2
Vehicle Noise:	82.6	80.8	76.0	74.6	82.4	82.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	562	1,211	2,609	5,621
CNEL:	585	1,261	2,716	5,852

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Euclid Av.
Road Segment: s/o Edison Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	49,555	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,955	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:	74.1%	12.6%	13.3%	90.52%
Medium Trucks:	81.2%	5.4%	13.4%	5.06%
Heavy Trucks:	82.1%	2.8%	15.1%	4.42%

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	3.81	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.71	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.31	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.8	74.7	73.0	68.5	76.4	76.9
Medium Trucks:	75.0	73.3	67.5	66.7	74.6	74.8
Heavy Trucks:	78.4	76.7	68.0	70.6	78.3	78.4
Vehicle Noise:	81.7	79.9	75.1	73.7	81.5	81.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	488	1,052	2,267	4,884
CNEL:	508	1,095	2,359	5,083

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Euclid Av.
Road Segment: s/o Eucalyptus Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	52,274	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,227	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:	74.1%	12.6%	13.3%	90.63%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	4.35%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.05	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.52	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.14	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:	77.0	75.0	73.3	68.8	76.7	77.2
Medium Trucks:	75.2	73.5	67.7	66.9	74.8	75.0
Heavy Trucks:	78.5	76.9	68.2	70.8	78.4	78.6
Vehicle Noise:	81.9	80.1	75.3	73.9	81.7	81.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	503	1,084	2,335	5,031
CNEL:	524	1,128	2,431	5,237

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Euclid Av.
Road Segment: s/o Merrill Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	55,023	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,502	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:	74.1%	12.6%	13.3%	90.67%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	4.32%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.27	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.30	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.95	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	77.3	75.2	73.5	69.0	76.9	77.4
Medium Trucks:	75.4	73.7	67.9	67.1	75.0	75.2
Heavy Trucks:	78.7	77.1	68.4	71.0	78.6	78.7
Vehicle Noise:	82.1	80.3	75.5	74.1	81.9	82.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	519	1,119	2,411	5,194
CNEL:	541	1,165	2,510	5,407

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Euclid Av.
Road Segment: s/o Kimball Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,488 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,849 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	90.90%
Medium Trucks:	81.2%	5.4%	13.4%	5.06%
Heavy Trucks:	82.1%	2.8%	15.1%	4.04%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.73	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.81	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.80	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	75.7	73.6	72.0	67.4	75.4	75.9
Medium Trucks:	73.9	72.2	66.4	65.6	73.5	73.7
Heavy Trucks:	76.9	75.2	66.5	69.1	76.8	76.9
Vehicle Noise:	80.4	78.6	73.9	72.4	80.2	80.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	402	865	1,864	4,015
CNEL:	418	901	1,942	4,184

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Euclid Av.
Road Segment: s/o Bickmore Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,376 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,738 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:	74.1%	12.6%	13.3%	90.79%
Medium Trucks:	81.2%	5.4%	13.4%	5.01%
Heavy Trucks:	82.1%	2.8%	15.1%	4.20%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.60	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.99	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.75	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	75.6	73.5	71.8	67.3	75.2	75.7
Medium Trucks:	73.7	72.0	66.2	65.4	73.3	73.6
Heavy Trucks:	76.9	75.3	66.6	69.2	76.8	76.9
Vehicle Noise:	80.4	78.6	73.8	72.3	80.1	80.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	398	857	1,847	3,979
CNEL:	414	893	1,923	4,144

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Euclid Av.
Road Segment: s/o Pine Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	59,094 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,909 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:	74.1%	12.6%	13.3%	91.04%
Medium Trucks:	81.2%	5.4%	13.4%	5.01%
Heavy Trucks:	82.1%	2.8%	15.1%	3.95%

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:	33.941
Medium 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	4.60	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.00	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.02	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	77.6	75.5	73.8	69.3	77.2	77.7
Medium Trucks:	75.7	74.0	68.2	67.4	75.3	75.5
Heavy Trucks:	78.6	77.0	68.3	70.9	78.6	78.7
Vehicle Noise:	82.2	80.4	75.7	74.2	82.0	82.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	530	1,143	2,462	5,304
CNEL:	553	1,191	2,566	5,528

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Flight Av.
Road Segment: n/o Kimball Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	2,130 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	213 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:	74.1%	12.6%	13.3%	89.73%
Medium Trucks:	81.2%	5.4%	13.4%	4.92%
Heavy Trucks:	82.1%	2.8%	15.1%	5.35%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-8.51	3.26	-1.20	-4.49	0.000	0.000
Medium Trucks:	77.72	-21.12	3.33	-1.20	-4.86	0.000	0.000
Heavy Trucks:	82.99	-20.76	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:	60.1	58.0	56.3	51.8	59.7	60.2
Medium Trucks:	58.7	57.0	51.3	50.5	58.4	58.6
Heavy Trucks:	64.4	62.7	54.0	56.6	64.3	64.4
Vehicle Noise:	66.5	64.8	59.1	58.6	66.3	66.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	79	171
CNEL:	18	38	82	177

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Hellman Av.
Road Segment: s/o Kimball Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,790 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:	74.1%	12.6%	13.3%	91.45%
Medium Trucks:	81.2%	5.4%	13.4%	4.91%
Heavy Trucks:	82.1%	2.8%	15.1%	3.64%

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:	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	0.30	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-12.39	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-13.70	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:	68.6	66.5	64.8	60.3	68.2	68.7
Medium Trucks:	66.9	65.2	59.4	58.6	66.5	66.8
Heavy Trucks:	70.4	68.7	60.0	62.6	70.3	70.4
Vehicle Noise:	73.6	71.8	66.9	65.6	73.4	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	178	383	826
CNEL:	86	185	399	859

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Edison Av.
Road Segment: w/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,028 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,903 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:	74.1%	12.6%	13.3%	91.41%
Medium Trucks:	81.2%	5.4%	13.4%	4.94%
Heavy Trucks:	82.1%	2.8%	15.1%	3.65%

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:	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	2.40	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	-11.58	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	67.9	66.2	61.7	69.6	70.1
Medium Trucks:	68.3	66.6	60.9	60.1	68.0	68.2
Heavy Trucks:	71.8	70.2	61.5	64.1	71.8	71.9
Vehicle Noise:	75.1	73.3	68.3	67.0	74.8	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	126	272	585	1,261
CNEL:	131	283	609	1,311

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Eucalyptus Av.
Road Segment: w/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,547 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	555 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.69%
Medium Trucks:	81.2%	5.4%	13.4%	4.78%
Heavy Trucks:	82.1%	2.8%	15.1%	3.54%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.26	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-17.09	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-18.40	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.3	60.2	58.6	54.0	61.9	62.5
Medium Trucks:	60.7	59.0	53.3	52.5	60.4	60.6
Heavy Trucks:	64.7	63.1	54.3	56.9	64.6	64.7
Vehicle Noise:	67.7	65.9	60.8	59.7	67.4	67.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	297
CNEL:	31	67	143	309

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Chino Hills Pkwy.
Road Segment: w/o SR-71
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,789 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,479 vehicles
Vehicle Speed:	40 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:	74.1%	12.6%	13.3%	91.32%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.69%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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:	66.51	4.79	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	77.72	-7.84	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-9.14	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	69.0	67.4	62.8	70.7	71.2
Medium Trucks:	69.7	68.0	62.3	61.5	69.4	69.6
Heavy Trucks:	73.7	72.0	63.3	65.9	73.6	73.7
Vehicle Noise:	76.6	74.8	69.7	68.6	76.4	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	281	606	1,305
CNEL:	136	292	629	1,355

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Chino Hills Pkwy.
Road Segment: e/o SR-71
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,785	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,878	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:	74.1%	12.6%	13.3%	90.97%
Medium Trucks:	81.2%	5.4%	13.4%	5.04%
Heavy Trucks:	82.1%	2.8%	15.1%	3.99%

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:	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	2.34	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-10.22	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.24	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:	70.6	68.5	66.9	62.3	70.2	70.7
Medium Trucks:	69.1	67.4	61.6	60.8	68.7	68.9
Heavy Trucks:	72.9	71.2	62.5	65.1	72.8	72.9
Vehicle Noise:	75.9	74.1	69.1	67.9	75.7	75.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	117	252	544	1,171
CNEL:	122	262	565	1,217

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Chino Hills Pkwy.
Road Segment: e/o Ramona Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,964	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,896	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:	74.1%	12.6%	13.3%	91.01%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	3.97%

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:	68.46	2.37	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-10.21	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.23	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:	70.6	68.5	66.9	62.4	70.3	70.8
Medium Trucks:	69.1	67.4	61.6	60.8	68.7	68.9
Heavy Trucks:	72.9	71.2	62.5	65.1	72.8	72.9
Vehicle Noise:	75.9	74.1	69.1	67.9	75.7	75.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	117	253	545	1,174
CNEL:	122	263	566	1,220

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Chino Hills Pkwy.
Road Segment: e/o Monte Vista Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,888	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,389	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:	74.1%	12.6%	13.3%	90.95%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	4.03%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.53	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-11.05	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-12.01	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	67.0	65.4	60.8	68.8	69.3
Medium Trucks:	67.6	65.9	60.1	59.3	67.2	67.4
Heavy Trucks:	71.4	69.8	61.1	63.7	71.3	71.4
Vehicle Noise:	74.4	72.6	67.6	66.4	74.2	74.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	247	532	1,146
CNEL:	119	256	552	1,190

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: El Prado Rd.
Road Segment: e/o Central Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,287	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,029	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:	74.1%	12.6%	13.3%	90.26%
Medium Trucks:	81.2%	5.4%	13.4%	5.07%
Heavy Trucks:	82.1%	2.8%	15.1%	4.67%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.79	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	79.45	-11.71	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-12.08	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	67.2	65.6	61.0	68.9	69.5
Medium Trucks:	67.8	66.2	60.4	59.6	67.5	67.7
Heavy Trucks:	72.3	70.6	61.9	64.5	72.2	72.3
Vehicle Noise:	75.0	73.2	68.0	67.0	74.8	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	426	917
CNEL:	95	205	442	951

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Kimball Av.
Road Segment: e/o El Prado Rd.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,932	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,293	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:	74.1%	12.6%	13.3%	90.38%
Medium Trucks:	81.2%	5.4%	13.4%	5.07%
Heavy Trucks:	82.1%	2.8%	15.1%	4.55%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.87	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.64	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.11	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	69.1	67.4	62.9	70.8	71.3
Medium Trucks:	69.5	67.8	62.0	61.2	69.1	69.3
Heavy Trucks:	73.4	71.7	63.0	65.6	73.3	73.4
Vehicle Noise:	76.4	74.6	69.6	68.4	76.2	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	245	527	1,136
CNEL:	118	254	548	1,181

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Kimball Av.
Road Segment: e/o Mountain Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,756	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,076	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:	74.1%	12.6%	13.3%	90.28%
Medium Trucks:	81.2%	5.4%	13.4%	5.07%
Heavy Trucks:	82.1%	2.8%	15.1%	4.64%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.43	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.07	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.45	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:	70.7	68.6	66.9	62.4	70.3	70.8
Medium Trucks:	69.0	67.3	61.6	60.8	68.7	68.9
Heavy Trucks:	73.0	71.4	62.7	65.3	73.0	73.1
Vehicle Noise:	76.0	74.2	69.2	68.0	75.8	76.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	231	497	1,070
CNEL:	111	240	516	1,112

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Kimball Av.
Road Segment: e/o San Antonio Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,565	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,057	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	36	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	44.0	feet
Centerline Dist. to Observer:	44.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	90.27%
Medium Trucks:	81.2%	5.4%	13.4%	5.07%
Heavy Trucks:	82.1%	2.8%	15.1%	4.65%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.39	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	-12.49	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:	70.7	68.6	66.9	62.4	70.3	70.8
Medium Trucks:	69.0	67.3	61.5	60.7	68.6	68.9
Heavy Trucks:	73.0	71.4	62.6	65.2	72.9	73.0
Vehicle Noise:	76.0	74.2	69.1	68.0	75.8	76.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	229	494	1,065
CNEL:	111	238	513	1,106

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Kimball Av.
Road Segment: e/o Fern Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,254	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,125	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:	74.1%	12.6%	13.3%	90.31%
Medium Trucks:	81.2%	5.4%	13.4%	5.07%
Heavy Trucks:	82.1%	2.8%	15.1%	4.62%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.54	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.97	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.37	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	68.7	67.1	62.5	70.4	70.9
Medium Trucks:	69.1	67.4	61.7	60.9	68.8	69.0
Heavy Trucks:	73.1	71.5	62.8	65.4	73.0	73.1
Vehicle Noise:	76.1	74.3	69.3	68.1	75.9	76.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	234	504	1,086
CNEL:	113	243	523	1,128

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Kimball Av.
Road Segment: e/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,330 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,633 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:	74.1%	12.6%	13.3%	88.82%
Medium Trucks:	81.2%	5.4%	13.4%	5.13%
Heavy Trucks:	82.1%	2.8%	15.1%	6.04%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.39	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-10.99	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-10.28	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	69.3	67.6	63.1	71.0	71.5
Medium Trucks:	69.9	68.2	62.4	61.6	69.5	69.7
Heavy Trucks:	74.9	73.3	64.6	67.2	74.9	75.0
Vehicle Noise:	77.4	75.6	70.2	69.4	77.2	77.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	148	318	685	1,476
CNEL:	153	329	709	1,528

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Kimball Av.
Road Segment: w/o Rincon Meadows Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,564 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,356 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:	74.1%	12.6%	13.3%	91.39%
Medium Trucks:	81.2%	5.4%	13.4%	4.86%
Heavy Trucks:	82.1%	2.8%	15.1%	3.75%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.04	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.70	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.83	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	69.0	67.3	62.8	70.7	71.2
Medium Trucks:	69.1	67.4	61.7	60.9	68.8	69.0
Heavy Trucks:	72.4	70.7	62.0	64.6	72.3	72.4
Vehicle Noise:	75.8	74.0	69.3	67.8	75.6	75.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	249	537	1,157
CNEL:	120	260	559	1,205

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Kimball Av.
Road Segment: e/o Rincon Meadows Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,033 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,703 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:	74.1%	12.6%	13.3%	91.36%
Medium Trucks:	81.2%	5.4%	13.4%	4.89%
Heavy Trucks:	82.1%	2.8%	15.1%	3.75%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.63	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.08	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.23	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:	71.6	69.5	67.9	63.4	71.3	71.8
Medium Trucks:	69.8	68.1	62.3	61.5	69.4	69.6
Heavy Trucks:	73.0	71.3	62.6	65.2	72.9	73.0
Vehicle Noise:	76.4	74.6	69.9	68.4	76.2	76.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	127	273	589	1,269
CNEL:	132	285	613	1,321

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Kimball Av.
Road Segment: e/o Mill Creek Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,102 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,910 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:	74.1%	12.6%	13.3%	91.33%
Medium Trucks:	81.2%	5.4%	13.4%	4.91%
Heavy Trucks:	82.1%	2.8%	15.1%	3.76%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.95	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-10.75	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-11.91	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:	72.0	69.9	68.2	63.7	71.6	72.1
Medium Trucks:	70.1	68.4	62.6	61.8	69.7	70.0
Heavy Trucks:	73.3	71.7	63.0	65.6	73.2	73.3
Vehicle Noise:	76.8	75.0	70.2	68.7	76.5	76.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	133	287	619	1,334
CNEL:	139	299	645	1,389

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Kimball Av.
Road Segment: e/o Main St.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	41,361	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,136	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	4.95%
Heavy Trucks:	82.1%	2.8%	15.1%	3.75%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	3.48	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-9.18	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-10.39	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:	73.5	71.4	69.7	65.2	73.1	73.6
Medium Trucks:	71.7	70.0	64.2	63.4	71.3	71.5
Heavy Trucks:	74.8	73.2	64.5	67.1	74.8	74.9
Vehicle Noise:	78.3	76.5	71.7	70.3	78.1	78.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	169	363	783	1,687
CNEL:	176	379	815	1,757

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Kimball Av.
Road Segment: e/o Flight Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,198	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,520	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:	74.1%	12.6%	13.3%	91.51%
Medium Trucks:	81.2%	5.4%	13.4%	4.88%
Heavy Trucks:	82.1%	2.8%	15.1%	3.61%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-0.86	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.59	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-14.90	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:	69.2	67.1	65.4	60.9	68.8	69.3
Medium Trucks:	67.2	65.6	59.8	59.0	66.9	67.1
Heavy Trucks:	70.3	68.7	60.0	62.6	70.2	70.4
Vehicle Noise:	73.9	72.0	67.3	65.8	73.6	73.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	184	396	854
CNEL:	89	192	413	890

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Kimball Av.
Road Segment: e/o Meadow Valley Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,798	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:	74.1%	12.6%	13.3%	91.48%
Medium Trucks:	81.2%	5.4%	13.4%	4.90%
Heavy Trucks:	82.1%	2.8%	15.1%	3.62%

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:	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	-0.98	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-13.69	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.00	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:	69.0	66.9	65.3	60.7	68.7	69.2
Medium Trucks:	67.1	65.5	59.7	58.9	66.8	67.0
Heavy Trucks:	70.2	68.6	59.9	62.5	70.1	70.3
Vehicle Noise:	73.7	71.9	67.2	65.7	73.5	73.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	390	840
CNEL:	88	189	406	875

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/o Limonite
Road Name: Pine Av.
Road Segment: e/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,945	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,094	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:	74.1%	12.6%	13.3%	91.22%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.79%

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	3.89	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-8.73	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.93	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:	71.5	69.4	67.7	63.2	71.1	71.6
Medium Trucks:	69.9	68.2	62.4	61.6	69.5	69.8
Heavy Trucks:	73.5	71.8	63.1	65.7	73.4	73.5
Vehicle Noise:	76.6	74.8	69.9	68.6	76.4	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	161	346	746	1,607
CNEL:	167	360	775	1,670

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Central Av.
Road Segment: n/o Chino Hills Pkwy.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,371	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,737	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	3.49	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.12	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.43	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	69.0	67.3	62.8	70.7	71.2
Medium Trucks:	69.5	67.8	62.0	61.2	69.1	69.4
Heavy Trucks:	73.0	71.3	62.6	65.2	72.9	73.0
Vehicle Noise:	76.2	74.4	69.5	68.2	76.0	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	150	323	697	1,501
CNEL:	156	336	724	1,561

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Central Av.
Road Segment: s/o Chino Hills Pkwy.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,026	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,003	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.54	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-10.07	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.38	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	68.0	66.4	61.9	69.8	70.3
Medium Trucks:	68.5	66.8	61.1	60.3	68.2	68.4
Heavy Trucks:	72.0	70.4	61.7	64.3	72.0	72.1
Vehicle Noise:	75.2	73.5	68.5	67.2	75.0	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	130	279	602	1,297
CNEL:	135	291	626	1,349

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Central Av.
Road Segment: s/o El Prado Rd.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,574	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,257	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.90	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.72	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.03	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	68.4	66.7	62.2	70.1	70.6
Medium Trucks:	68.9	67.2	61.4	60.6	68.5	68.8
Heavy Trucks:	72.4	70.7	62.0	64.6	72.3	72.4
Vehicle Noise:	75.6	73.8	68.9	67.6	75.4	75.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	137	295	636	1,369
CNEL:	142	307	661	1,424

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Euclid Av.
Road Segment: n/o SR-60
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	53,712	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,371	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	5.07	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-7.55	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.85	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.7	72.7	71.0	66.5	74.4	74.9
Medium Trucks:	73.2	71.5	65.7	64.9	72.8	73.0
Heavy Trucks:	76.7	75.0	66.3	68.9	76.6	76.7
Vehicle Noise:	79.9	78.1	73.1	71.8	79.6	79.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	369	795	1,713	3,690
CNEL:	384	827	1,781	3,837

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Euclid Av.
Road Segment: s/o SR-60
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	51,616 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,162 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.90	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-7.72	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.03	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.6	72.5	70.8	66.3	74.2	74.7
Medium Trucks:	73.0	71.3	65.5	64.7	72.6	72.9
Heavy Trucks:	76.5	74.8	66.1	68.7	76.4	76.5
Vehicle Noise:	79.7	77.9	73.0	71.7	79.5	79.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	359	774	1,668	3,594
CNEL:	374	805	1,735	3,737

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Euclid Av.
Road Segment: s/o Walnut St.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	49,711 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,971 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.73	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-7.88	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.19	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.4	72.3	70.6	66.1	74.0	74.5
Medium Trucks:	72.8	71.1	65.4	64.6	72.5	72.7
Heavy Trucks:	76.3	74.7	66.0	68.6	76.3	76.4
Vehicle Noise:	79.5	77.7	72.8	71.5	79.3	79.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	350	755	1,627	3,505
CNEL:	364	785	1,692	3,644

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Euclid Av.
Road Segment: s/o Riverside Dr.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	56,213 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,621 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.39	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.22	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.53	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:	77.4	75.3	73.6	69.1	77.0	77.5
Medium Trucks:	75.5	73.8	68.0	67.2	75.1	75.3
Heavy Trucks:	78.1	76.5	67.8	70.4	78.1	78.2
Vehicle Noise:	81.9	80.1	75.5	73.9	81.7	81.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	503	1,084	2,336	5,032
CNEL:	525	1,131	2,436	5,249

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Euclid Av.
Road Segment: s/o Chino Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	59,653 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,965 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.65	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-7.96	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.27	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	77.7	75.6	73.9	69.4	77.3	77.8
Medium Trucks:	75.7	74.0	68.2	67.5	75.4	75.6
Heavy Trucks:	78.4	76.7	68.0	70.6	78.3	78.4
Vehicle Noise:	82.2	80.4	75.7	74.1	81.9	82.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	524	1,128	2,430	5,236
CNEL:	546	1,176	2,535	5,461

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Euclid Av.
Road Segment: s/o Schaefer Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	59,946	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,995	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.67	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-7.94	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.25	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:	77.7	75.6	73.9	69.4	77.3	77.8
Medium Trucks:	75.7	74.0	68.3	67.5	75.4	75.6
Heavy Trucks:	78.4	76.8	68.1	70.7	78.3	78.4
Vehicle Noise:	82.2	80.4	75.8	74.1	81.9	82.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	525	1,132	2,438	5,253
CNEL:	548	1,180	2,543	5,479

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Euclid Av.
Road Segment: s/o Edison Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,169	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,717	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.63	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.98	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.29	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.6	74.5	72.9	68.3	76.3	76.8
Medium Trucks:	74.7	73.0	67.2	66.4	74.3	74.6
Heavy Trucks:	77.4	75.7	67.0	69.6	77.3	77.4
Vehicle Noise:	81.1	79.3	74.7	73.1	80.9	81.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	448	965	2,078	4,477
CNEL:	467	1,006	2,167	4,669

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Euclid Av.
Road Segment: s/o Eucalyptus Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	49,456	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.84	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.78	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.08	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.8	74.7	73.1	68.5	76.5	77.0
Medium Trucks:	74.9	73.2	67.4	66.6	74.5	74.8
Heavy Trucks:	77.6	75.9	67.2	69.8	77.5	77.6
Vehicle Noise:	81.3	79.5	74.9	73.3	81.1	81.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	462	995	2,145	4,620
CNEL:	482	1,038	2,237	4,819

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Euclid Av.
Road Segment: s/o Merrill Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	52,205	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,221	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.07	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.54	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.85	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	77.1	75.0	73.3	68.8	76.7	77.2
Medium Trucks:	75.1	73.4	67.7	66.9	74.8	75.0
Heavy Trucks:	77.8	76.2	67.5	70.1	77.7	77.8
Vehicle Noise:	81.6	79.8	75.2	73.5	81.3	81.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	479	1,032	2,223	4,790
CNEL:	500	1,076	2,319	4,996

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Euclid Av.
Road Segment: s/o Kimball Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,981	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,798	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.69	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.92	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.23	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	73.6	71.9	67.4	75.3	75.8
Medium Trucks:	73.8	72.1	66.3	65.5	73.4	73.6
Heavy Trucks:	76.4	74.8	66.1	68.7	76.4	76.5
Vehicle Noise:	80.2	78.4	73.8	72.2	80.0	80.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	387	835	1,799	3,875
CNEL:	404	871	1,876	4,041

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Euclid Av.
Road Segment: s/o Bickmore Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,747	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,575	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.43	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.19	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.49	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	73.3	71.7	67.1	75.1	75.6
Medium Trucks:	73.5	71.8	66.0	65.2	73.1	73.4
Heavy Trucks:	76.2	74.5	65.8	68.4	76.1	76.2
Vehicle Noise:	79.9	78.1	73.5	71.9	79.7	80.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	372	802	1,727	3,721
CNEL:	388	836	1,802	3,881

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Euclid Av.
Road Segment: s/o Pine Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	57,841	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,784	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	154	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	84.0	feet
Centerline Dist. to Observer:	84.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.52	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.10	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.40	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	77.5	75.4	73.8	69.2	77.1	77.6
Medium Trucks:	75.6	73.9	68.1	67.3	75.2	75.4
Heavy Trucks:	78.3	76.6	67.9	70.5	78.2	78.3
Vehicle Noise:	82.0	80.2	75.6	74.0	81.8	82.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	513	1,105	2,381	5,129
CNEL:	535	1,153	2,483	5,350

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Flight Av.
Road Segment: n/o Kimball Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,557	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	656	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-3.55	3.26	-1.20	-4.49	0.000	0.000
Medium Trucks:	77.72	-16.17	3.33	-1.20	-4.86	0.000	0.000
Heavy Trucks:	82.99	-17.48	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:	65.0	62.9	61.3	56.7	64.6	65.2
Medium Trucks:	63.7	62.0	56.2	55.4	63.3	63.5
Heavy Trucks:	67.6	66.0	57.3	59.9	67.6	67.7
Vehicle Noise:	70.5	68.8	63.6	62.5	70.3	70.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	68	146	315
CNEL:	33	70	152	327

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Hellman Av.
Road Segment: s/o Kimball Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,491 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,349 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.48	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-11.14	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-12.45	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:	69.7	67.7	66.0	61.5	69.4	69.9
Medium Trucks:	68.2	66.5	60.7	59.9	67.8	68.0
Heavy Trucks:	71.6	70.0	61.3	63.9	71.6	71.7
Vehicle Noise:	74.9	73.1	68.1	66.8	74.6	74.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	215	463	997
CNEL:	104	223	481	1,037

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Edison Av.
Road Segment: w/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,657 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,866 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	76 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	60.0 feet
Centerline Dist. to Observer:	60.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.34	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	-11.58	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	67.8	66.2	61.6	69.6	70.1
Medium Trucks:	68.3	66.6	60.9	60.1	68.0	68.2
Heavy Trucks:	71.8	70.2	61.5	64.1	71.8	71.9
Vehicle Noise:	75.0	73.3	68.3	67.0	74.8	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	126	271	584	1,257
CNEL:	131	282	607	1,307

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Eucalyptus Av.
Road Segment: w/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	530 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.48	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-17.09	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-18.40	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.1	60.0	58.3	53.8	61.7	62.2
Medium Trucks:	60.7	59.0	53.3	52.5	60.4	60.6
Heavy Trucks:	64.7	63.1	54.3	56.9	64.6	64.7
Vehicle Noise:	67.6	65.8	60.7	59.6	67.4	67.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	137	295
CNEL:	31	66	142	306

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Chino Hills Pkwy.
Road Segment: w/o SR-71
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,665 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,467 vehicles
Vehicle Speed:	40 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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:	66.51	4.78	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	77.72	-7.84	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-9.14	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	69.0	67.3	62.8	70.7	71.2
Medium Trucks:	69.7	68.0	62.3	61.5	69.4	69.6
Heavy Trucks:	73.7	72.0	63.3	65.9	73.6	73.7
Vehicle Noise:	76.6	74.8	69.7	68.6	76.4	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	130	281	606	1,305
CNEL:	135	292	629	1,354

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Chino Hills Pkwy.
Road Segment: e/o SR-71
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,344	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,834	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.29	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-10.32	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.63	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:	70.6	68.5	66.8	62.3	70.2	70.7
Medium Trucks:	69.0	67.3	61.5	60.7	68.6	68.8
Heavy Trucks:	72.5	70.8	62.1	64.7	72.4	72.5
Vehicle Noise:	75.7	73.9	68.9	67.7	75.4	75.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	244	525	1,130
CNEL:	118	253	546	1,175

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Chino Hills Pkwy.
Road Segment: e/o Ramona Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,399	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,840	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.30	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-10.31	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.62	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:	70.6	68.5	66.8	62.3	70.2	70.7
Medium Trucks:	69.0	67.3	61.5	60.7	68.6	68.8
Heavy Trucks:	72.5	70.8	62.1	64.7	72.4	72.5
Vehicle Noise:	75.7	73.9	68.9	67.7	75.5	75.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	244	525	1,132
CNEL:	118	254	546	1,177

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Chino Hills Pkwy.
Road Segment: e/o Monte Vista Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,323	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,332	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.45	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-11.17	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-12.48	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.0	65.3	60.8	68.7	69.2
Medium Trucks:	67.4	65.7	60.0	59.2	67.1	67.3
Heavy Trucks:	70.9	69.3	60.6	63.2	70.9	71.0
Vehicle Noise:	74.2	72.4	67.4	66.1	73.9	74.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	236	509	1,096
CNEL:	114	246	529	1,140

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: El Prado Rd.
Road Segment: e/o Central Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,906	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,891	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	0.53	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	79.45	-12.08	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-13.39	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	67.0	65.3	60.8	68.7	69.2
Medium Trucks:	67.5	65.8	60.0	59.2	67.1	67.3
Heavy Trucks:	71.0	69.3	60.6	63.2	70.9	71.0
Vehicle Noise:	74.2	72.4	67.4	66.2	74.0	74.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	375	807
CNEL:	84	181	390	839

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Kimball Av.
Road Segment: e/o El Prado Rd.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,551 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,155 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.64	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.97	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.28	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:	70.9	68.8	67.2	62.6	70.5	71.1
Medium Trucks:	69.1	67.4	61.7	60.9	68.8	69.0
Heavy Trucks:	72.2	70.6	61.9	64.5	72.1	72.2
Vehicle Noise:	75.7	73.9	69.1	67.7	75.5	75.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	102	220	473	1,019
CNEL:	106	229	493	1,061

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Kimball Av.
Road Segment: e/o Mountain Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,375 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,938 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	0.18	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.43	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.74	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:	70.5	68.4	66.7	62.2	70.1	70.6
Medium Trucks:	68.7	67.0	61.2	60.4	68.3	68.5
Heavy Trucks:	71.7	70.1	61.4	64.0	71.7	71.8
Vehicle Noise:	75.2	73.4	68.7	67.2	75.0	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	204	441	949
CNEL:	99	213	459	989

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Kimball Av.
Road Segment: e/o San Antonio Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,184 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,918 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	0.14	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.48	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.78	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	68.3	66.7	62.1	70.0	70.5
Medium Trucks:	68.6	66.9	61.2	60.4	68.3	68.5
Heavy Trucks:	71.7	70.1	61.3	64.0	71.6	71.7
Vehicle Noise:	75.2	73.4	68.6	67.2	75.0	75.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	94	203	438	943
CNEL:	98	212	456	982

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Kimball Av.
Road Segment: e/o Fern Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,873 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,987 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-12.32	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.63	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:	70.6	68.5	66.8	62.3	70.2	70.7
Medium Trucks:	68.8	67.1	61.3	60.5	68.4	68.7
Heavy Trucks:	71.9	70.2	61.5	64.1	71.8	71.9
Vehicle Noise:	75.4	73.6	68.8	67.3	75.1	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	208	448	965
CNEL:	101	217	467	1,005

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Kimball Av.
Road Segment: e/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,690 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,169 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	-11.94	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.25	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	68.6	66.9	62.4	70.3	70.8
Medium Trucks:	68.9	67.2	61.4	60.6	68.5	68.8
Heavy Trucks:	72.0	70.3	61.6	64.2	71.9	72.0
Vehicle Noise:	75.5	73.7	68.9	67.4	75.2	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	236	508	1,094
CNEL:	114	245	529	1,139

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Kimball Av.
Road Segment: w/o Rincon Meadows Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,571 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,257 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	0.85	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.77	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.08	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:	70.9	68.8	67.1	62.6	70.5	71.0
Medium Trucks:	69.1	67.4	61.6	60.8	68.7	68.9
Heavy Trucks:	72.1	70.5	61.8	64.4	72.1	72.2
Vehicle Noise:	75.6	73.8	69.1	67.6	75.4	75.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	242	521	1,123
CNEL:	117	252	543	1,170

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Kimball Av.
Road Segment: e/o Rincon Meadows Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,062 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,706 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.63	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-10.98	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.29	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:	71.6	69.6	67.9	63.4	71.3	71.8
Medium Trucks:	69.9	68.2	62.4	61.6	69.5	69.7
Heavy Trucks:	72.9	71.3	62.6	65.2	72.9	73.0
Vehicle Noise:	76.4	74.6	69.9	68.4	76.2	76.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	127	273	588	1,268
CNEL:	132	284	613	1,320

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Kimball Av.
Road Segment: e/o Mill Creek Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,035 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,304 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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.50	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-10.12	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-11.42	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:	72.5	70.4	68.8	64.2	72.1	72.6
Medium Trucks:	70.7	69.0	63.3	62.5	70.4	70.6
Heavy Trucks:	73.8	72.1	63.4	66.0	73.7	73.8
Vehicle Noise:	77.3	75.5	70.7	69.3	77.1	77.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	145	312	672	1,448
CNEL:	151	325	700	1,508

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Kimball Av.
Road Segment: e/o Main St.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,417	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,542	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	3.88	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-8.73	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-10.04	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:	73.9	71.8	70.1	65.6	73.5	74.0
Medium Trucks:	72.1	70.4	64.6	63.9	71.8	72.0
Heavy Trucks:	75.2	73.5	64.8	67.4	75.1	75.2
Vehicle Noise:	78.7	76.9	72.1	70.6	78.4	78.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	179	386	831	1,790
CNEL:	186	402	866	1,865

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Kimball Av.
Road Segment: e/o Flight Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,431	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,443	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.19	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.43	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.73	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:	71.2	69.1	67.4	62.9	70.8	71.3
Medium Trucks:	69.4	67.7	62.0	61.2	69.1	69.3
Heavy Trucks:	72.5	70.8	62.1	64.7	72.4	72.5
Vehicle Noise:	76.0	74.2	69.4	67.9	75.7	76.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	118	255	550	1,184
CNEL:	123	266	573	1,233

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Kimball Av.
Road Segment: e/o Meadow Valley Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,093	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,409	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.13	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.49	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.79	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	69.0	67.4	62.9	70.8	71.3
Medium Trucks:	69.4	67.7	61.9	61.1	69.0	69.2
Heavy Trucks:	72.4	70.8	62.1	64.7	72.4	72.5
Vehicle Noise:	75.9	74.1	69.4	67.9	75.7	76.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	117	253	545	1,173
CNEL:	122	263	567	1,222

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Pine Av.
Road Segment: e/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,570	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,057	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	3.85	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-8.77	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.07	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:	71.5	69.4	67.7	63.2	71.1	71.6
Medium Trucks:	69.9	68.2	62.4	61.6	69.5	69.7
Heavy Trucks:	73.3	71.7	63.0	65.6	73.3	73.4
Vehicle Noise:	76.6	74.8	69.8	68.5	76.3	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	159	342	736	1,585
CNEL:	165	355	765	1,648

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Limonite Av.
Road Segment: e/o Hellman Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,702	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,870	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.35	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-10.27	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-11.58	-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	65.7	64.0	59.5	67.4	67.9
Medium Trucks:	66.1	64.4	58.7	57.9	65.8	66.0
Heavy Trucks:	69.6	68.0	59.3	61.9	69.6	69.7
Vehicle Noise:	72.8	71.1	66.1	64.8	72.6	72.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	245	528	1,137
CNEL:	118	255	549	1,182

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Limonite Av.
Road Segment: e/o Archibald Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,626	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,763	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.55	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-8.07	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.38	-1.84	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	67.9	66.2	61.7	69.6	70.1
Medium Trucks:	68.3	66.6	60.9	60.1	68.0	68.2
Heavy Trucks:	71.8	70.2	61.5	64.1	71.8	71.9
Vehicle Noise:	75.0	73.3	68.3	67.0	74.8	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	159	343	739	1,593
CNEL:	166	357	769	1,656

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Limonite Av.
Road Segment: e/o Harrison Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	51,107	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,111	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.85	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-7.76	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.07	-1.84	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	68.2	66.5	62.0	69.9	70.4
Medium Trucks:	68.6	66.9	61.2	60.4	68.3	68.5
Heavy Trucks:	72.1	70.5	61.8	64.4	72.1	72.2
Vehicle Noise:	75.4	73.6	68.6	67.3	75.1	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	167	360	775	1,670
CNEL:	174	374	806	1,736

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Limonite Av.
Road Segment: e/o Sumner Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	50,421	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,042	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.79	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-7.82	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.13	-1.84	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	68.1	66.4	61.9	69.8	70.3
Medium Trucks:	68.6	66.9	61.1	60.3	68.2	68.5
Heavy Trucks:	72.1	70.4	61.7	64.3	72.0	72.1
Vehicle Noise:	75.3	73.5	68.6	67.3	75.1	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	165	356	768	1,655
CNEL:	172	371	799	1,721

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Limonite Av.
Road Segment: e/o Scholar Wy.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	50,597	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,060	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.81	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-7.81	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.11	-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:	70.2	68.1	66.5	61.9	69.8	70.3
Medium Trucks:	68.6	66.9	61.1	60.3	68.2	68.5
Heavy Trucks:	72.1	70.4	61.7	64.3	72.0	72.1
Vehicle Noise:	75.3	73.5	68.6	67.3	75.1	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	166	357	770	1,658
CNEL:	172	372	801	1,725

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/o Proj w/ Limonite
Road Name: Limonite Av.
Road Segment: e/o Hamner Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	54,934	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,493	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:	74.1%	12.6%	13.3%	91.30%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.70%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	5.17	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-7.45	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.76	-1.84	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	68.5	66.8	62.3	70.2	70.7
Medium Trucks:	69.0	67.3	61.5	60.7	68.6	68.8
Heavy Trucks:	72.5	70.8	62.1	64.7	72.4	72.5
Vehicle Noise:	75.7	73.9	68.9	67.6	75.4	75.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	175	377	813	1,752
CNEL:	182	393	846	1,822

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Central Av.
Road Segment: n/o Chino Hills Pkwy.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,556	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,756	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:	74.1%	12.6%	13.3%	91.34%
Medium Trucks:	81.2%	5.4%	13.4%	4.98%
Heavy Trucks:	82.1%	2.8%	15.1%	3.68%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	3.52	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.12	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.43	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	69.0	67.4	62.8	70.7	71.2
Medium Trucks:	69.5	67.8	62.0	61.2	69.1	69.4
Heavy Trucks:	73.0	71.3	62.6	65.2	72.9	73.0
Vehicle Noise:	76.2	74.4	69.5	68.2	76.0	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	150	324	697	1,502
CNEL:	156	337	725	1,562

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Central Av.
Road Segment: s/o Chino Hills Pkwy.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,776	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,078	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:	74.1%	12.6%	13.3%	91.08%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.93%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.64	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.98	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.01	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	68.1	66.5	61.9	69.9	70.4
Medium Trucks:	68.6	66.9	61.2	60.4	68.3	68.5
Heavy Trucks:	72.4	70.8	62.1	64.7	72.3	72.4
Vehicle Noise:	75.5	73.7	68.7	67.5	75.3	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	134	290	624	1,344
CNEL:	140	301	648	1,397

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Central Av.
Road Segment: s/o El Prado Rd.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,205 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,320 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:	74.1%	12.6%	13.3%	90.87%
Medium Trucks:	81.2%	5.4%	13.4%	5.06%
Heavy Trucks:	82.1%	2.8%	15.1%	4.08%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	46.701
Medium Trucks:	46.511
Heavy Trucks:	46.530

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.96	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-9.59	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.52	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	68.5	66.8	62.3	70.2	70.7
Medium Trucks:	69.0	67.3	61.6	60.8	68.7	68.9
Heavy Trucks:	72.9	71.2	62.5	65.1	72.8	72.9
Vehicle Noise:	75.9	74.1	69.0	67.9	75.7	75.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	309	666	1,434
CNEL:	149	321	691	1,489

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Euclid Av.
Road Segment: n/o SR-60
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	53,897 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,390 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.33%
Medium Trucks:	81.2%	5.4%	13.4%	4.98%
Heavy Trucks:	82.1%	2.8%	15.1%	3.69%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	5.08	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-7.55	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.85	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.8	72.7	71.0	66.5	74.4	74.9
Medium Trucks:	73.2	71.5	65.7	64.9	72.8	73.0
Heavy Trucks:	76.7	75.0	66.3	68.9	76.6	76.7
Vehicle Noise:	79.9	78.1	73.1	71.9	79.6	79.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	369	796	1,714	3,693
CNEL:	384	827	1,783	3,840

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Euclid Av.
Road Segment: s/o SR-60
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	52,762 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,276 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	90.49%
Medium Trucks:	81.2%	5.4%	13.4%	5.15%
Heavy Trucks:	82.1%	2.8%	15.1%	4.37%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.95	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-7.50	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.21	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:	74.6	72.5	70.9	66.3	74.3	74.8
Medium Trucks:	73.2	71.5	65.8	65.0	72.9	73.1
Heavy Trucks:	77.3	75.7	67.0	69.6	77.2	77.3
Vehicle Noise:	80.2	78.4	73.2	72.2	79.9	80.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	387	833	1,796	3,869
CNEL:	401	865	1,864	4,015

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Euclid Av.
Road Segment: s/o Walnut St.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	51,042 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,104 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	84.0 feet
Centerline Dist. to Observer:	84.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	90.49%
Medium Trucks:	81.2%	5.4%	13.4%	5.13%
Heavy Trucks:	82.1%	2.8%	15.1%	4.38%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.81	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	79.45	-7.66	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.35	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:	74.5	72.4	70.7	66.2	74.1	74.6
Medium Trucks:	73.1	71.4	65.6	64.8	72.7	72.9
Heavy Trucks:	77.2	75.5	66.8	69.4	77.1	77.2
Vehicle Noise:	80.0	78.2	73.1	72.0	79.8	80.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	379	816	1,757	3,786
CNEL:	393	846	1,824	3,929

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Euclid Av.
Road Segment: s/o Riverside Dr.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	57,730 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,773 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:	74.1%	12.6%	13.3%	90.61%
Medium Trucks:	81.2%	5.4%	13.4%	5.10%
Heavy Trucks:	82.1%	2.8%	15.1%	4.29%

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	4.48	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.02	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.78	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	77.5	75.4	73.7	69.2	77.1	77.6
Medium Trucks:	75.7	74.0	68.2	67.4	75.3	75.5
Heavy Trucks:	78.9	77.2	68.5	71.1	78.8	78.9
Vehicle Noise:	82.3	80.5	75.7	74.3	82.1	82.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	536	1,155	2,489	5,362
CNEL:	558	1,203	2,591	5,583

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Euclid Av.
Road Segment: s/o Chino Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	61,355 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	6,136 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:	74.1%	12.6%	13.3%	90.68%
Medium Trucks:	81.2%	5.4%	13.4%	5.08%
Heavy Trucks:	82.1%	2.8%	15.1%	4.24%

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	4.74	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-7.77	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.56	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	77.7	75.6	74.0	69.5	77.4	77.9
Medium Trucks:	75.9	74.2	68.4	67.6	75.5	75.8
Heavy Trucks:	79.1	77.5	68.8	71.4	79.0	79.1
Vehicle Noise:	82.5	80.7	76.0	74.5	82.3	82.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	556	1,198	2,582	5,563
CNEL:	579	1,248	2,689	5,793

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Euclid Av.
Road Segment: s/o Schaefer Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	61,833 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	6,183 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:	74.1%	12.6%	13.3%	90.71%
Medium Trucks:	81.2%	5.4%	13.4%	5.06%
Heavy Trucks:	82.1%	2.8%	15.1%	4.22%

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:	33.941
Medium 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	4.78	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-7.75	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.54	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	77.8	75.7	74.0	69.5	77.4	77.9
Medium Trucks:	75.9	74.2	68.5	67.7	75.6	75.8
Heavy Trucks:	79.1	77.5	68.8	71.4	79.0	79.2
Vehicle Noise:	82.6	80.8	76.0	74.5	82.3	82.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	558	1,203	2,592	5,583
CNEL:	581	1,253	2,699	5,814

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Euclid Av.
Road Segment: s/o Edison Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	49,489 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,949 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:	74.1%	12.6%	13.3%	90.64%
Medium Trucks:	81.2%	5.4%	13.4%	5.04%
Heavy Trucks:	82.1%	2.8%	15.1%	4.32%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.81	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.74	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.41	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.8	74.7	73.0	68.5	76.4	76.9
Medium Trucks:	74.9	73.2	67.5	66.7	74.6	74.8
Heavy Trucks:	78.3	76.6	67.9	70.5	78.2	78.3
Vehicle Noise:	81.6	79.8	75.0	73.6	81.4	81.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	484	1,043	2,248	4,843
CNEL:	504	1,086	2,341	5,043

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Euclid Av.
Road Segment: s/o Eucalyptus Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	52,208 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,221 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:	74.1%	12.6%	13.3%	90.75%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	4.26%

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	4.05	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.55	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.24	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	77.0	75.0	73.3	68.8	76.7	77.2
Medium Trucks:	75.1	73.4	67.7	66.9	74.8	75.0
Heavy Trucks:	78.4	76.8	68.1	70.7	78.4	78.5
Vehicle Noise:	81.8	80.0	75.3	73.8	81.6	81.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	499	1,075	2,317	4,991
CNEL:	520	1,120	2,413	5,198

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Euclid Av.
Road Segment: s/o Merrill Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	54,957 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,496 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:	74.1%	12.6%	13.3%	90.77%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	4.23%

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	4.27	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.32	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.04	2.47	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	77.3	75.2	73.5	69.0	76.9	77.4
Medium Trucks:	75.3	73.7	67.9	67.1	75.0	75.2
Heavy Trucks:	78.6	77.0	68.3	70.9	78.5	78.7
Vehicle Noise:	82.1	80.2	75.5	74.0	81.8	82.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	515	1,111	2,393	5,155
CNEL:	537	1,157	2,492	5,368

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Euclid Av.
Road Segment: s/o Kimball Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,113 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,811 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:	74.1%	12.6%	13.3%	90.98%
Medium Trucks:	81.2%	5.4%	13.4%	5.07%
Heavy Trucks:	82.1%	2.8%	15.1%	3.95%

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:	33.941
Medium 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	2.69	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-9.85	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.94	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:	75.7	73.6	71.9	67.4	75.3	75.8
Medium Trucks:	73.8	72.1	66.4	65.6	73.5	73.7
Heavy Trucks:	76.7	75.1	66.4	69.0	76.7	76.8
Vehicle Noise:	80.3	78.5	73.8	72.3	80.1	80.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	396	854	1,840	3,964
CNEL:	413	890	1,917	4,131

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Euclid Av.
Road Segment: s/o Bickmore Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,618 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,762 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:	74.1%	12.6%	13.3%	91.03%
Medium Trucks:	81.2%	5.4%	13.4%	4.93%
Heavy Trucks:	82.1%	2.8%	15.1%	4.04%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.64	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-10.03	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.89	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:	75.6	73.5	71.9	67.3	75.3	75.8
Medium Trucks:	73.6	71.9	66.2	65.4	73.3	73.5
Heavy Trucks:	76.8	75.1	66.4	69.0	76.7	76.8
Vehicle Noise:	80.3	78.5	73.8	72.3	80.1	80.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	394	849	1,830	3,942
CNEL:	411	885	1,906	4,107

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Euclid Av.
Road Segment: s/o Pine Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	59,028	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,903	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:	74.1%	12.6%	13.3%	91.14%
Medium Trucks:	81.2%	5.4%	13.4%	4.98%
Heavy Trucks:	82.1%	2.8%	15.1%	3.88%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	33.941
Medium Trucks:	33.679
Heavy Trucks:	33.705

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.60	2.42	-1.20	-4.75	0.000	0.000
Medium Trucks:	82.40	-8.02	2.47	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.11	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:	77.6	75.5	73.8	69.3	77.2	77.7
Medium Trucks:	75.7	74.0	68.2	67.4	75.3	75.5
Heavy Trucks:	78.5	76.9	68.2	70.8	78.5	78.6
Vehicle Noise:	82.2	80.4	75.7	74.2	82.0	82.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	527	1,135	2,444	5,266
CNEL:	549	1,183	2,548	5,490

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Flight Av.
Road Segment: n/o Kimball Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,808	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	681	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:	74.1%	12.6%	13.3%	90.65%
Medium Trucks:	81.2%	5.4%	13.4%	5.07%
Heavy Trucks:	82.1%	2.8%	15.1%	4.28%

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	-3.42	3.26	-1.20	-4.49	0.000	0.000
Medium Trucks:	77.72	-15.95	3.33	-1.20	-4.86	0.000	0.000
Heavy Trucks:	82.99	-16.68	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:	65.2	63.1	61.4	56.9	64.8	65.3
Medium Trucks:	63.9	62.2	56.4	55.6	63.5	63.8
Heavy Trucks:	68.4	66.8	58.1	60.7	68.4	68.5
Vehicle Noise:	71.0	69.3	63.9	63.1	70.8	71.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	158	341
CNEL:	35	76	164	354

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Hellman Av.
Road Segment: s/o Kimball Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,553	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,355	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	51	feet

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:	74.1%	12.6%	13.3%	91.32%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.69%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.49	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-11.14	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-12.45	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	67.7	66.0	61.5	69.4	69.9
Medium Trucks:	68.2	66.5	60.7	59.9	67.8	68.0
Heavy Trucks:	71.6	70.0	61.3	63.9	71.6	71.7
Vehicle Noise:	74.9	73.1	68.1	66.8	74.6	74.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	215	463	998
CNEL:	104	224	482	1,038

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Edison Av.
Road Segment: w/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,028	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,903	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:	74.1%	12.6%	13.3%	91.41%
Medium Trucks:	81.2%	5.4%	13.4%	4.94%
Heavy Trucks:	82.1%	2.8%	15.1%	3.65%

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:	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	2.40	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	-11.58	0.37	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	67.9	66.2	61.7	69.6	70.1
Medium Trucks:	68.3	66.6	60.9	60.1	68.0	68.2
Heavy Trucks:	71.8	70.2	61.5	64.1	71.8	71.9
Vehicle Noise:	75.1	73.3	68.3	67.0	74.8	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	126	272	585	1,261
CNEL:	131	283	609	1,311

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Eucalyptus Av.
Road Segment: w/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	5,547 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	555 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	40 mph		
Near/Far Lane Distance:	36 feet		
Site Data			
Barrier Height:	**0.0 feet**		
Barrier Type (0-Wall, 1-Berm):	0.0		
Centerline Dist. to Barrier:	44.0 feet		
Centerline Dist. to Observer:	44.0 feet		
Barrier Distance to Observer:	0.0 feet		
Observer Height (Above Pad):	5.0 feet		
Pad Elevation:	0.0 feet		
Road Elevation:	0.0 feet		
Road Grade:	0.0%		
Left View:	-90.0 degrees		
Right View:	90.0 degrees		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.69%
Medium Trucks:	81.2%	5.4%	13.4%	4.78%
Heavy Trucks:	82.1%	2.8%	15.1%	3.54%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos: 40.460
Medium Trucks: 40.241
Heavy Trucks: 40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.26	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	77.72	-17.09	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-18.40	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.3	60.2	58.6	54.0	61.9	62.5
Medium Trucks:	60.7	59.0	53.3	52.5	60.4	60.6
Heavy Trucks:	64.7	63.1	54.3	56.9	64.6	64.7
Vehicle Noise:	67.7	65.9	60.8	59.7	67.4	67.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	297
CNEL:	31	67	143	309

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Chino Hills Pkwy.
Road Segment: w/o SR-71
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	44,789 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	4,479 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	40 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		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.32%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	3.69%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos: 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:	66.51	4.79	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	77.72	-7.84	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-9.14	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	69.0	67.4	62.8	70.7	71.2
Medium Trucks:	69.7	68.0	62.3	61.5	69.4	69.6
Heavy Trucks:	73.7	72.0	63.3	65.9	73.6	73.7
Vehicle Noise:	76.6	74.8	69.7	68.6	76.4	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	281	606	1,305
CNEL:	136	292	629	1,355

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Chino Hills Pkwy.
Road Segment: e/o SR-71
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	28,723 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	2,872 vehicles	Heavy Trucks (3+ Axles):	15
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		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	90.96%
Medium Trucks:	81.2%	5.4%	13.4%	5.05%
Heavy Trucks:	82.1%	2.8%	15.1%	4.00%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos: 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	2.33	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-10.22	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.24	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:	70.6	68.5	66.8	62.3	70.2	70.7
Medium Trucks:	69.1	67.4	61.6	60.8	68.7	68.9
Heavy Trucks:	72.9	71.2	62.5	65.1	72.8	72.9
Vehicle Noise:	75.9	74.1	69.1	67.9	75.7	75.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	117	252	543	1,171
CNEL:	122	262	565	1,216

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Chino Hills Pkwy.
Road Segment: e/o Ramona Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	28,964 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	2,896 vehicles	Heavy Trucks (3+ Axles):	15
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		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	91.01%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	3.97%

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:	68.46	2.37	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	79.45	-10.21	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.23	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:	70.6	68.5	66.9	62.4	70.3	70.8
Medium Trucks:	69.1	67.4	61.6	60.8	68.7	68.9
Heavy Trucks:	72.9	71.2	62.5	65.1	72.8	72.9
Vehicle Noise:	75.9	74.1	69.1	67.9	75.7	75.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	117	253	545	1,174
CNEL:	122	263	566	1,220

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Chino Hills Pkwy.
Road Segment: e/o Monte Vista Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,888 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,389 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:	74.1%	12.6%	13.3%	90.95%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	4.03%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.53	0.34	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	79.45	-11.05	0.37	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-12.01	0.37	-1.20	*-5.34*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	67.0	65.4	60.8	68.8	69.3
Medium Trucks:	67.6	65.9	60.1	59.3	67.2	67.4
Heavy Trucks:	71.4	69.8	61.1	63.7	71.3	71.4
Vehicle Noise:	74.4	72.6	67.6	66.4	74.2	74.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	247	532	1,146
CNEL:	119	256	552	1,190

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: El Prado Rd.
Road Segment: e/o Central Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,287 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,029 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:	74.1%	12.6%	13.3%	90.26%
Medium Trucks:	81.2%	5.4%	13.4%	5.07%
Heavy Trucks:	82.1%	2.8%	15.1%	4.67%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.79	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	79.45	-11.71	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	84.25	-12.08	1.31	-1.20	*-5.50*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	67.2	65.6	61.0	68.9	69.5
Medium Trucks:	67.8	66.2	60.4	59.6	67.5	67.7
Heavy Trucks:	72.3	70.6	61.9	64.5	72.2	72.3
Vehicle Noise:	75.0	73.2	68.0	67.0	74.8	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	426	917
CNEL:	95	205	442	951

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Kimball Av.
Road Segment: e/o El Prado Rd.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,932 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,293 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:	74.1%	12.6%	13.3%	90.38%
Medium Trucks:	81.2%	5.4%	13.4%	5.07%
Heavy Trucks:	82.1%	2.8%	15.1%	4.55%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.87	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-11.64	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-12.11	1.31	-1.20	*-5.50*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	69.1	67.4	62.9	70.8	71.3
Medium Trucks:	69.5	67.8	62.0	61.2	69.1	69.3
Heavy Trucks:	73.4	71.7	63.0	65.6	73.3	73.4
Vehicle Noise:	76.4	74.6	69.6	68.4	76.2	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	245	527	1,136
CNEL:	118	254	548	1,181

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Kimball Av.
Road Segment: e/o Mountain Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,756 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,076 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:	74.1%	12.6%	13.3%	90.28%
Medium Trucks:	81.2%	5.4%	13.4%	5.07%
Heavy Trucks:	82.1%	2.8%	15.1%	4.64%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.43	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-12.07	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-12.45	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:	70.7	68.6	66.9	62.4	70.3	70.8
Medium Trucks:	69.0	67.3	61.6	60.8	68.7	68.9
Heavy Trucks:	73.0	71.4	62.7	65.3	73.0	73.1
Vehicle Noise:	76.0	74.2	69.2	68.0	75.8	76.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	231	497	1,070
CNEL:	111	240	516	1,112

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Kimball Av.
Road Segment: e/o San Antonio Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,565 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,057 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	44.0 feet
Centerline Dist. to Observer:	44.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	74.1%	12.6%	13.3%	90.27%
Medium Trucks:	81.2%	5.4%	13.4%	5.07%
Heavy Trucks:	82.1%	2.8%	15.1%	4.65%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.39	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	-12.49	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:	70.7	68.6	66.9	62.4	70.3	70.8
Medium Trucks:	69.0	67.3	61.5	60.7	68.6	68.9
Heavy Trucks:	73.0	71.4	62.6	65.2	72.9	73.0
Vehicle Noise:	76.0	74.2	69.1	68.0	75.8	76.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	229	494	1,065
CNEL:	111	238	513	1,106

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Kimball Av.
Road Segment: e/o Fern Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,254 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,125 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:	74.1%	12.6%	13.3%	90.31%
Medium Trucks:	81.2%	5.4%	13.4%	5.07%
Heavy Trucks:	82.1%	2.8%	15.1%	4.62%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.54	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-11.97	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.37	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	68.7	67.1	62.5	70.4	70.9
Medium Trucks:	69.1	67.4	61.7	60.9	68.8	69.0
Heavy Trucks:	73.1	71.5	62.8	65.4	73.0	73.1
Vehicle Noise:	76.1	74.3	69.3	68.1	75.9	76.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	234	504	1,086
CNEL:	113	243	523	1,128

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Kimball Av.
Road Segment: e/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,889 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,589 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:	74.1%	12.6%	13.3%	89.14%
Medium Trucks:	81.2%	5.4%	13.4%	5.09%
Heavy Trucks:	82.1%	2.8%	15.1%	5.77%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.34	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.09	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-10.56	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	69.3	67.6	63.1	71.0	71.5
Medium Trucks:	69.7	68.1	62.3	61.5	69.4	69.6
Heavy Trucks:	74.7	73.0	64.3	66.9	74.6	74.7
Vehicle Noise:	77.2	75.4	70.1	69.2	77.0	77.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	309	665	1,432
CNEL:	148	320	689	1,484

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Kimball Av.
Road Segment: w/o Rincon Meadows Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,696 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,370 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:	74.1%	12.6%	13.3%	90.88%
Medium Trucks:	81.2%	5.4%	13.4%	4.97%
Heavy Trucks:	82.1%	2.8%	15.1%	4.15%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.04	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.58	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.37	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	69.0	67.3	62.8	70.7	71.2
Medium Trucks:	69.3	67.6	61.8	61.0	68.9	69.1
Heavy Trucks:	72.8	71.2	62.5	65.1	72.8	72.9
Vehicle Noise:	76.1	74.3	69.4	68.1	75.8	76.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	120	259	558	1,202
CNEL:	125	269	580	1,250

Wednesday, July 26, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Kimball Av.
Road Segment: e/o Rincon Meadows Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,125 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,813 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:	74.1%	12.6%	13.3%	90.92%
Medium Trucks:	81.2%	5.4%	13.4%	4.99%
Heavy Trucks:	82.1%	2.8%	15.1%	4.09%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	42.140
Medium Trucks:	41.929
Heavy Trucks:	41.950

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.78	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-10.82	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-11.69	1.04	-1.20	-5.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	69.7	68.0	63.5	71.4	71.9
Medium Trucks:	70.0	68.3	62.6	61.8	69.7	69.9
Heavy Trucks:	73.5	71.9	63.2	65.8	73.5	73.6
Vehicle Noise:	76.8	75.0	70.1	68.8	76.6	76.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	134	289	622	1,341
CNEL:	140	301	648	1,395

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Kimball Av.
Road Segment: e/o Mill Creek Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,036 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,404 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:	74.1%	12.6%	13.3%	90.97%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	4.03%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.61	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-9.99	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-10.93	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:	72.6	70.5	68.9	64.3	72.3	72.8
Medium Trucks:	70.9	69.2	63.4	62.6	70.5	70.7
Heavy Trucks:	74.3	72.6	63.9	66.5	74.2	74.3
Vehicle Noise:	77.6	75.8	70.9	69.6	77.4	77.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	152	327	704	1,516
CNEL:	158	340	732	1,578

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Kimball Av.
Road Segment: e/o Main St.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	46,356 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,636 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:	74.1%	12.6%	13.3%	91.05%
Medium Trucks:	81.2%	5.4%	13.4%	5.01%
Heavy Trucks:	82.1%	2.8%	15.1%	3.94%

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	3.96	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-8.64	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-9.67	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:	74.0	71.9	70.2	65.7	73.6	74.1
Medium Trucks:	72.2	70.5	64.7	63.9	71.8	72.1
Heavy Trucks:	75.5	73.9	65.2	67.8	75.5	75.6
Vehicle Noise:	78.9	77.1	72.2	70.9	78.7	78.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	185	399	859	1,851
CNEL:	193	415	894	1,927

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Kimball Av.
Road Segment: e/o Flight Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,057 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,506 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:	74.1%	12.6%	13.3%	90.99%
Medium Trucks:	81.2%	5.4%	13.4%	5.01%
Heavy Trucks:	82.1%	2.8%	15.1%	4.00%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	1.28	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.31	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.28	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	69.2	67.5	63.0	70.9	71.4
Medium Trucks:	69.5	67.8	62.1	61.3	69.2	69.4
Heavy Trucks:	72.9	71.3	62.6	65.2	72.9	73.0
Vehicle Noise:	76.2	74.4	69.6	68.2	76.0	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	266	573	1,234
CNEL:	128	277	596	1,284

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Kimball Av.
Road Segment: e/o Meadow Valley Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,658	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,466	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:	74.1%	12.6%	13.3%	90.96%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	4.02%

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:	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	1.21	1.01	-1.20	-4.64	0.000	0.000
Medium Trucks:	81.00	-11.37	1.04	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.34	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:	71.2	69.1	67.5	62.9	70.9	71.4
Medium Trucks:	69.5	67.8	62.0	61.2	69.1	69.3
Heavy Trucks:	72.9	71.2	62.5	65.1	72.8	72.9
Vehicle Noise:	76.2	74.4	69.5	68.2	76.0	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	122	263	567	1,223
CNEL:	127	274	591	1,272

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Pine Av.
Road Segment: e/o Euclid Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,945	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,094	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:	74.1%	12.6%	13.3%	91.22%
Medium Trucks:	81.2%	5.4%	13.4%	5.00%
Heavy Trucks:	82.1%	2.8%	15.1%	3.79%

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	3.89	0.34	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-8.73	0.37	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.93	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:	71.5	69.4	67.7	63.2	71.1	71.6
Medium Trucks:	69.9	68.2	62.4	61.6	69.5	69.8
Heavy Trucks:	73.5	71.8	63.1	65.7	73.4	73.5
Vehicle Noise:	76.6	74.8	69.9	68.6	76.4	76.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	161	346	746	1,607
CNEL:	167	360	775	1,670

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Limonite Av.
Road Segment: e/o Hellman Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,267	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,927	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:	74.1%	12.6%	13.3%	91.02%
Medium Trucks:	81.2%	5.4%	13.4%	5.02%
Heavy Trucks:	82.1%	2.8%	15.1%	3.97%

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	2.42	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-10.17	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.19	-1.84	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	65.7	64.1	59.5	67.4	68.0
Medium Trucks:	66.2	64.5	58.8	58.0	65.9	66.1
Heavy Trucks:	70.0	68.4	59.7	62.3	69.9	70.1
Vehicle Noise:	73.1	71.3	66.3	65.1	72.9	73.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	118	254	547	1,178
CNEL:	122	264	568	1,224

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Limonite Av.
Road Segment: e/o Archibald Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	48,191	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,819	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:	74.1%	12.6%	13.3%	91.13%
Medium Trucks:	81.2%	5.4%	13.4%	5.01%
Heavy Trucks:	82.1%	2.8%	15.1%	3.86%

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:	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	4.59	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-8.01	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.14	-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:	70.0	67.9	66.2	61.7	69.6	70.1
Medium Trucks:	68.4	66.7	60.9	60.1	68.0	68.3
Heavy Trucks:	72.1	70.4	61.7	64.3	72.0	72.1
Vehicle Noise:	75.2	73.4	68.4	67.2	75.0	75.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	163	351	756	1,628
CNEL:	169	365	786	1,693

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Limonite Av.
Road Segment: e/o Harrison Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	51,672 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,167 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:	74.1%	12.6%	13.3%	91.14%
Medium Trucks:	81.2%	5.4%	13.4%	5.01%
Heavy Trucks:	82.1%	2.8%	15.1%	3.85%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	4.89	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-7.71	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.85	-1.84	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	68.2	66.5	62.0	69.9	70.4
Medium Trucks:	68.7	67.0	61.2	60.4	68.3	68.6
Heavy Trucks:	72.4	70.7	62.0	64.6	72.3	72.4
Vehicle Noise:	75.5	73.7	68.7	67.5	75.3	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	170	367	791	1,704
CNEL:	177	382	822	1,771

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Limonite Av.
Road Segment: e/o Sumner Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	50,986 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,099 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:	74.1%	12.6%	13.3%	91.14%
Medium Trucks:	81.2%	5.4%	13.4%	5.01%
Heavy Trucks:	82.1%	2.8%	15.1%	3.85%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	4.83	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-7.77	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.90	-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:	70.2	68.1	66.5	61.9	69.9	70.4
Medium Trucks:	68.6	66.9	61.2	60.4	68.3	68.5
Heavy Trucks:	72.3	70.7	62.0	64.6	72.2	72.3
Vehicle Noise:	75.4	73.6	68.6	67.4	75.2	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	169	364	784	1,689
CNEL:	176	378	815	1,756

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Limonite Av.
Road Segment: e/o Scholar Wy.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	51,162 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,116 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:	74.1%	12.6%	13.3%	91.14%
Medium Trucks:	81.2%	5.4%	13.4%	5.01%
Heavy Trucks:	82.1%	2.8%	15.1%	3.85%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	4.85	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-7.75	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.89	-1.84	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	68.2	66.5	62.0	69.9	70.4
Medium Trucks:	68.7	67.0	61.2	60.4	68.3	68.5
Heavy Trucks:	72.3	70.7	62.0	64.6	72.2	72.4
Vehicle Noise:	75.4	73.7	68.7	67.4	75.2	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	169	365	786	1,693
CNEL:	176	379	817	1,760

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY 2040 w/ Proj w/ Limonite
Road Name: Limonite Av.
Road Segment: e/o Hamner Av.
Project Name: Altitude
Job Number: 9776

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	55,313 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,531 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:	74.1%	12.6%	13.3%	91.12%
Medium Trucks:	81.2%	5.4%	13.4%	5.03%
Heavy Trucks:	82.1%	2.8%	15.1%	3.85%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	5.19	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-7.40	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.55	-1.84	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	68.5	66.8	62.3	70.2	70.7
Medium Trucks:	69.0	67.3	61.5	60.8	68.7	68.9
Heavy Trucks:	72.7	71.0	62.3	64.9	72.6	72.7
Vehicle Noise:	75.8	74.0	69.0	67.8	75.6	75.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	178	384	828	1,785
CNEL:	185	400	861	1,855

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APPENDIX 9.1:

OPERATIONAL STATIONARY-SOURCE NOISE CALCULATIONS

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STATIONARY SOURCE NOISE PREDICTION MODEL

1/2/2018

Observer Location: **R1**
Source: Air Conditioning Unit (Roof-Top)
Condition: Operational

Project Name: Kimball
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	164.0	feet	***Barrier Height:***	**6.0**	**feet**
Noise Distance to Barrier:	154.0	feet	*Noise Source Height:*	5.0	feet
Barrier Distance to Observer:	10.0	feet	*Observer Height:*	5.0	feet
Observer Elevation:	0.0	feet	*Barrier Type (0-Wall, 1-Berm):*	0	
Noise Source Elevation:	30.0	feet	*Drop Off Coefficient:*	20.0	
Barrier Elevation:	0.0	feet			

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	5.0	0.0	74.4	76.1	77.4	77.7	78.2
Distance Attenuation	164.0	-30.3	-30.3	-30.3	-30.3	-30.3	-30.3
Shielding (Barrier Attenuation)	154.0	-5.3	-5.3	-5.3	-5.3	-5.3	-5.3
Raw (Distance + Barrier)		-35.6	38.8	40.5	41.8	42.1	42.6
39 Minute Hourly Adjustment		**-37.5**	**36.9**	**38.6**	**39.9**	**40.2**	**40.7**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/2/2018

Observer Location: **R1**
Source: Truck Unloading/Docking Activity
Condition: Operational

Project Name: Kimball
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	224.0	feet	***Barrier Height:***	**6.0**	**feet**
Noise Distance to Barrier:	214.0	feet	*Noise Source Height:*	8.0	feet
Barrier Distance to Observer:	10.0	feet	*Observer Height:*	5.0	feet
Observer Elevation:	0.0	feet	*Barrier Type (0-Wall, 1-Berm):*	0	
Noise Source Elevation:	0.0	feet	*Drop Off Coefficient:*	20.0	
Barrier Elevation:	0.0	feet			

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	30.0	0.0	64.2	67.2	71.8	75.6	80.0
Distance Attenuation	224.0	-17.5	-17.5	-17.5	-17.5	-17.5	-17.5
Shielding (Barrier Attenuation)	214.0	-5.4	-5.4	-5.4	-5.4	-5.4	-5.4
Raw (Distance + Barrier)		-22.9	41.3	44.3	48.9	52.7	57.1
60 Minute Hourly Adjustment		**-22.9**	**41.3**	**44.3**	**48.9**	**52.7**	**57.1**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/2/2018

Observer Location: **R1**
Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: Kimball
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	76.0 feet	***Barrier Height:***	**6.0 feet**
Noise Distance to Barrier:	66.0 feet	*Noise Source Height:*	5.0 feet
Barrier Distance to Observer:	10.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	0.0 feet	*Drop Off Coefficient:*	15.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	10.0	0.0	49.0	50.0	55.0	61.0	71.9
Distance Attenuation	76.0	-13.2	-13.2	-13.2	-13.2	-13.2	-13.2
Shielding (Barrier Attenuation)	66.0	-5.6	-5.6	-5.6	-5.6	-5.6	-5.6
Raw (Distance + Barrier)		-18.8	30.2	31.2	36.2	42.2	53.1
60 Minute Hourly Adjustment		**-18.8**	**30.2**	**31.2**	**36.2**	**42.2**	**53.1**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/2/2018

Observer Location: **R1**
Source: Storage Activity
Condition: Operational

Project Name: Kimball
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	843.0 feet	***Barrier Height:***	**6.0 feet**
Noise Distance to Barrier:	833.0 feet	*Noise Source Height:*	4.0 feet
Barrier Distance to Observer:	10.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	0.0 feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	10.0	0.0	66.6	70.0	73.0	76.0	77.4
Distance Attenuation	843.0	-38.5	-38.5	-38.5	-38.5	-38.5	-38.5
Shielding (Barrier Attenuation)	833.0	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5
Raw (Distance + Barrier)		-44.0	22.6	26.0	29.0	32.0	33.4
60 Minute Hourly Adjustment		**-44.0**	**22.6**	**26.0**	**29.0**	**32.0**	**33.4**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/2/2018

Observer Location: **R2**
Source: Air Conditioning Unit (Roof-Top)
Condition: Operational

Project Name: Kimball
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	1,497.0	feet	***Barrier Height:***	**6.0 feet**
Noise Distance to Barrier:	70.0	feet	*Noise Source Height:*	5.0 feet
Barrier Distance to Observer:	1,427.0	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	1,497.0	-49.5	-49.5	-49.5	-49.5	-49.5	-49.5
Shielding (Barrier Attenuation)	70.0	-15.5	-15.5	-15.5	-15.5	-15.5	-15.5
Raw (Distance + Barrier)		-65.0	9.4	11.1	12.4	12.7	13.2
39 Minute Hourly Adjustment		**-66.9**	**7.5**	**9.2**	**10.5**	**10.8**	**11.3**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/2/2018

Observer Location: **R2**
Source: Truck Unloading/Docking Activity
Condition: Operational

Project Name: Kimball
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	1,587.0	feet	***Barrier Height:***	**6.0 feet**
Noise Distance to Barrier:	70.0	feet	*Noise Source Height:*	8.0 feet
Barrier Distance to Observer:	1,517.0	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	1,587.0	-34.5	-34.5	-34.5	-34.5	-34.5	-34.5
Shielding (Barrier Attenuation)	70.0	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6
Raw (Distance + Barrier)		-39.1	25.1	28.1	32.7	36.5	40.9
60 Minute Hourly Adjustment		**-39.1**	**25.1**	**28.1**	**32.7**	**36.5**	**40.9**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/2/2018

Observer Location: **R2**
Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: Kimball
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	1,438.0	feet	***Barrier Height:***	**6.0 feet**
Noise Distance to Barrier:	30.0	feet	*Noise Source Height:*	5.0 feet
Barrier Distance to Observer:	1,408.0	feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0	feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	0.0	feet	*Drop Off Coefficient:*	15.0
Barrier Elevation:	0.0	feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	10.0	0.0	49.0	50.0	55.0	61.0	71.9
Distance Attenuation	1,438.0	-32.4	-32.4	-32.4	-32.4	-32.4	-32.4
Shielding (Barrier Attenuation)	30.0	-5.2	-5.2	-5.2	-5.2	-5.2	-5.2
Raw (Distance + Barrier)		-37.6	11.4	12.4	17.4	23.4	34.3
60 Minute Hourly Adjustment		**-37.6**	**11.4**	**12.4**	**17.4**	**23.4**	**34.3**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/2/2018

Observer Location: **R2**
Source: Storage Activity
Condition: Operational

Project Name: Kimball
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	2,306.0	feet	***Barrier Height:***	**6.0 feet**
Noise Distance to Barrier:	2,306.0	feet	*Noise Source Height:*	4.0 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	66.6	70.0	73.0	76.0	77.4
Distance Attenuation	2,306.0	-47.3	-47.3	-47.3	-47.3	-47.3	-47.3
Shielding (Barrier Attenuation)	2,306.0	-10.2	-10.2	-10.2	-10.2	-10.2	-10.2
Raw (Distance + Barrier)		-57.5	9.1	12.5	15.5	18.5	19.9
60 Minute Hourly Adjustment		**-57.5**	**9.1**	**12.5**	**15.5**	**18.5**	**19.9**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/2/2018

Observer Location: **R3**
Source: Air Conditioning Unit (Roof-Top)
Condition: Operational

Project Name: Kimball
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	164.0 feet	***Barrier Height:***	**6.0 feet**
Noise Distance to Barrier:	154.0 feet	*Noise Source Height:*	5.0 feet
Barrier Distance to Observer:	10.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	30.0 feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	5.0	0.0	74.4	76.1	77.4	77.7	78.2
Distance Attenuation	164.0	-30.3	-30.3	-30.3	-30.3	-30.3	-30.3
Shielding (Barrier Attenuation)	154.0	-5.3	-5.3	-5.3	-5.3	-5.3	-5.3
Raw (Distance + Barrier)		-35.6	38.8	40.5	41.8	42.1	42.6
39 Minute Hourly Adjustment		**-37.5**	**36.9**	**38.6**	**39.9**	**40.2**	**40.7**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/2/2018

Observer Location: **R3**
Source: Truck Unloading/Docking Activity
Condition: Operational

Project Name: Kimball
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	368.0 feet	***Barrier Height:***	**6.0 feet**
Noise Distance to Barrier:	358.0 feet	*Noise Source Height:*	8.0 feet
Barrier Distance to Observer:	10.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	0.0 feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	30.0	0.0	64.2	67.2	71.8	75.6	80.0
Distance Attenuation	368.0	-21.8	-21.8	-21.8	-21.8	-21.8	-21.8
Shielding (Barrier Attenuation)	358.0	-5.4	-5.4	-5.4	-5.4	-5.4	-5.4
Raw (Distance + Barrier)		-27.2	37.0	40.0	44.6	48.4	52.8
60 Minute Hourly Adjustment		**-27.2**	**37.0**	**40.0**	**44.6**	**48.4**	**52.8**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/2/2018

Observer Location: **R3**
Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: Kimball
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	85.0 feet	***Barrier Height:***	**6.0 feet**
Noise Distance to Barrier:	75.0 feet	*Noise Source Height:*	5.0 feet
Barrier Distance to Observer:	10.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	0.0 feet	*Drop Off Coefficient:*	15.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	10.0	0.0	49.0	50.0	55.0	61.0	71.9
Distance Attenuation	85.0	-13.9	-13.9	-13.9	-13.9	-13.9	-13.9
Shielding (Barrier Attenuation)	75.0	-5.6	-5.6	-5.6	-5.6	-5.6	-5.6
Raw (Distance + Barrier)		-19.5	29.5	30.5	35.5	41.5	52.4
60 Minute Hourly Adjustment		**-19.5**	**29.5**	**30.5**	**35.5**	**41.5**	**52.4**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/2/2018

Observer Location: **R3**
Source: Storage Activity
Condition: Operational

Project Name: Kimball
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	1,074.0 feet	***Barrier Height:***	**6.0 feet**
Noise Distance to Barrier:	1,064.0 feet	*Noise Source Height:*	4.0 feet
Barrier Distance to Observer:	10.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	0.0 feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	10.0	0.0	66.6	70.0	73.0	76.0	77.4
Distance Attenuation	1,074.0	-40.6	-40.6	-40.6	-40.6	-40.6	-40.6
Shielding (Barrier Attenuation)	1,064.0	-5.5	-5.5	-5.5	-5.5	-5.5	-5.5
Raw (Distance + Barrier)		-46.1	20.5	23.9	26.9	29.9	31.3
60 Minute Hourly Adjustment		**-46.1**	**20.5**	**23.9**	**26.9**	**29.9**	**31.3**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/2/2018

Observer Location: **R4**
Source: Air Conditioning Unit (Roof-Top)
Condition: Operational

Project Name: Kimball
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	239.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	239.0 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	239.0	-33.6	-33.6	-33.6	-33.6	-33.6	-33.6
Shielding (Barrier Attenuation)	239.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-33.6	40.8	42.5	43.8	44.1	44.6
39 Minute Hourly Adjustment		**-35.5**	**38.9**	**40.6**	**41.9**	**42.2**	**42.7**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/2/2018

Observer Location: **R4**
Source: Truck Unloading/Docking Activity
Condition: Operational

Project Name: Kimball
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	300.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	300.0 feet	*Noise Source Height:*	8.0 feet
Barrier Distance to Observer:	0.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	0.0 feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	30.0	0.0	64.2	67.2	71.8	75.6	80.0
Distance Attenuation	300.0	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Shielding (Barrier Attenuation)	300.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-20.0	44.2	47.2	51.8	55.6	60.0
60 Minute Hourly Adjustment		**-20.0**	**44.2**	**47.2**	**51.8**	**55.6**	**60.0**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/2/2018

Observer Location: **R4**
Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: Kimball
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	147.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	147.0 feet	*Noise Source Height:*	5.0 feet
Barrier Distance to Observer:	0.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	0.0 feet	*Drop Off Coefficient:*	15.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	10.0	0.0	49.0	50.0	55.0	61.0	71.9
Distance Attenuation	147.0	-17.5	-17.5	-17.5	-17.5	-17.5	-17.5
Shielding (Barrier Attenuation)	147.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-17.5	31.5	32.5	37.5	43.5	54.4
60 Minute Hourly Adjustment		**-17.5**	**31.5**	**32.5**	**37.5**	**43.5**	**54.4**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/2/2018

Observer Location: **R4**
Source: Storage Activity
Condition: Operational

Project Name: Kimball
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	1,605.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	1,605.0 feet	*Noise Source Height:*	4.0 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	66.6	70.0	73.0	76.0	77.4
Distance Attenuation	1,605.0	-44.1	-44.1	-44.1	-44.1	-44.1	-44.1
Shielding (Barrier Attenuation)	1,605.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-44.1	22.5	25.9	28.9	31.9	33.3
60 Minute Hourly Adjustment		**-44.1**	**22.5**	**25.9**	**28.9**	**31.9**	**33.3**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/2/2018

Observer Location: **R5**
Source: Air Conditioning Unit (Roof-Top)
Condition: Operational

Project Name: Kimball
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	348.0	feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	348.0	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	348.0	-36.9	-36.9	-36.9	-36.9	-36.9	-36.9
Shielding (Barrier Attenuation)	348.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-36.9	37.5	39.2	40.5	40.8	41.3
39 Minute Hourly Adjustment		**-38.8**	**35.6**	**37.3**	**38.6**	**38.9**	**39.4**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/2/2018

Observer Location: **R5**
Source: Truck Unloading/Docking Activity
Condition: Operational

Project Name: Kimball
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	476.0	feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	476.0	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	476.0	-24.0	-24.0	-24.0	-24.0	-24.0	-24.0
Shielding (Barrier Attenuation)	476.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-24.0	40.2	43.2	47.8	51.6	56.0
60 Minute Hourly Adjustment		**-24.0**	**40.2**	**43.2**	**47.8**	**51.6**	**56.0**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/2/2018

Observer Location: **R5**
Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: Kimball
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	269.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	269.0 feet	*Noise Source Height:*	5.0 feet
Barrier Distance to Observer:	0.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	0.0 feet	*Drop Off Coefficient:*	15.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	10.0	0.0	49.0	50.0	55.0	61.0	71.9
Distance Attenuation	269.0	-21.4	-21.4	-21.4	-21.4	-21.4	-21.4
Shielding (Barrier Attenuation)	269.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-21.4	27.6	28.6	33.6	39.6	50.5
60 Minute Hourly Adjustment		**-21.4**	**27.6**	**28.6**	**33.6**	**39.6**	**50.5**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/2/2018

Observer Location: **R5**
Source: Storage Activity
Condition: Operational

Project Name: Kimball
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	2,131.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	2,131.0 feet	*Noise Source Height:*	4.0 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	66.6	70.0	73.0	76.0	77.4
Distance Attenuation	2,131.0	-46.6	-46.6	-46.6	-46.6	-46.6	-46.6
Shielding (Barrier Attenuation)	2,131.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-46.6	20.0	23.4	26.4	29.4	30.8
60 Minute Hourly Adjustment		**-46.6**	**20.0**	**23.4**	**26.4**	**29.4**	**30.8**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/2/2018

Observer Location: **R6**
Source: Air Conditioning Unit (Roof-Top)
Condition: Operational

Project Name: Kimball
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	2,060.0	feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	2,060.0	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	2,060.0	-52.3	-52.3	-52.3	-52.3	-52.3	-52.3
Shielding (Barrier Attenuation)	2,060.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-52.3	22.1	23.8	25.1	25.4	25.9
39 Minute Hourly Adjustment		**-54.2**	**20.2**	**21.9**	**23.2**	**23.5**	**24.0**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/2/2018

Observer Location: **R6**
Source: Truck Unloading/Docking Activity
Condition: Operational

Project Name: Kimball
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	2,195.0	feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	2,195.0	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	2,195.0	-37.3	-37.3	-37.3	-37.3	-37.3	-37.3
Shielding (Barrier Attenuation)	2,195.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-37.3	26.9	29.9	34.5	38.3	42.7
60 Minute Hourly Adjustment		**-37.3**	**26.9**	**29.9**	**34.5**	**38.3**	**42.7**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/2/2018

Observer Location: **R6**
Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: Kimball
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	1,975.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	1,975.0 feet	*Noise Source Height:*	5.0 feet
Barrier Distance to Observer:	0.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	0.0 feet	*Drop Off Coefficient:*	15.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	10.0	0.0	49.0	50.0	55.0	61.0	71.9
Distance Attenuation	1,975.0	-34.4	-34.4	-34.4	-34.4	-34.4	-34.4
Shielding (Barrier Attenuation)	1,975.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-34.4	14.6	15.6	20.6	26.6	37.5
60 Minute Hourly Adjustment		**-34.4**	**14.6**	**15.6**	**20.6**	**26.6**	**37.5**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/2/2018

Observer Location: **R6**
Source: Storage Activity
Condition: Operational

Project Name: Kimball
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	2,920.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	2,920.0 feet	*Noise Source Height:*	4.0 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	66.6	70.0	73.0	76.0	77.4
Distance Attenuation	2,920.0	-49.3	-49.3	-49.3	-49.3	-49.3	-49.3
Shielding (Barrier Attenuation)	2,920.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-49.3	17.3	20.7	23.7	26.7	28.1
60 Minute Hourly Adjustment		**-49.3**	**17.3**	**20.7**	**23.7**	**26.7**	**28.1**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/2/2018

Observer Location: **R7**
Source: Air Conditioning Unit (Roof-Top)
Condition: Operational

Project Name: Kimball
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	1,326.0	feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	1,326.0	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	1,326.0	-48.5	-48.5	-48.5	-48.5	-48.5	-48.5
Shielding (Barrier Attenuation)	1,326.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-48.5	25.9	27.6	28.9	29.2	29.7
39 Minute Hourly Adjustment		**-50.4**	**24.0**	**25.7**	**27.0**	**27.3**	**27.8**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/2/2018

Observer Location: **R7**
Source: Truck Unloading/Docking Activity
Condition: Operational

Project Name: Kimball
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	1,164.0	feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	1,164.0	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	1,164.0	-31.8	-31.8	-31.8	-31.8	-31.8	-31.8
Shielding (Barrier Attenuation)	1,164.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-31.8	32.4	35.4	40.0	43.8	48.2
60 Minute Hourly Adjustment		**-31.8**	**32.4**	**35.4**	**40.0**	**43.8**	**48.2**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/2/2018

Observer Location: **R7**
Source: Parking Lot Vehicle Movements
Condition: Operational

Project Name: Kimball
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	1,242.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	1,242.0 feet	*Noise Source Height:*	5.0 feet
Barrier Distance to Observer:	0.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	0.0 feet	*Drop Off Coefficient:*	15.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	10.0	0.0	49.0	50.0	55.0	61.0	71.9
Distance Attenuation	1,242.0	-31.4	-31.4	-31.4	-31.4	-31.4	-31.4
Shielding (Barrier Attenuation)	1,242.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-31.4	17.6	18.6	23.6	29.6	40.5
60 Minute Hourly Adjustment		**-31.4**	**17.6**	**18.6**	**23.6**	**29.6**	**40.5**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/2/2018

Observer Location: **R7**
Source: Storage Activity
Condition: Operational

Project Name: Kimball
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	2,686.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	2,686.0 feet	*Noise Source Height:*	4.0 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	66.6	70.0	73.0	76.0	77.4
Distance Attenuation	2,686.0	-48.6	-48.6	-48.6	-48.6	-48.6	-48.6
Shielding (Barrier Attenuation)	2,686.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		-48.6	18.0	21.4	24.4	27.4	28.8
60 Minute Hourly Adjustment		**-48.6**	**18.0**	**21.4**	**24.4**	**27.4**	**28.8**

APPENDIX 10.1:

CONSTRUCTION NOISE BARRIER ATTENUATION CALCULATIONS

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STATIONARY SOURCE NOISE PREDICTION MODEL

7/26/2017

Observer Location: **R1**
Source: Peak Construction Activity
Condition: Construction

Project Name: Altitude
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	62.0 feet	***Barrier Height:***	**6.0 feet**
Noise Distance to Barrier:	52.0 feet	*Noise Source Height:*	8.0 feet
Barrier Distance to Observer:	10.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	0.0 feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	50.0	79.6	0.0	0.0	0.0	0.0	0.0
Distance Attenuation	62.0	-1.9	-1.9	-1.9	-1.9	-1.9	-1.9
Shielding (Barrier Attenuation)	52.0	-5.2	-5.2	-5.2	-5.2	-5.2	-5.2

STATIONARY SOURCE NOISE PREDICTION MODEL

7/26/2017

Observer Location: **R2**
Source: Peak Construction Activity
Condition: Construction

Project Name: Altitude
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	1,439.0 feet	***Barrier Height:***	**6.0 feet**
Noise Distance to Barrier:	52.0 feet	*Noise Source Height:*	8.0 feet
Barrier Distance to Observer:	1,387.0 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)	50.0	79.6	0.0	0.0	0.0	0.0	0.0
Distance Attenuation	1,439.0	-29.2	-29.2	-29.2	-29.2	-29.2	-29.2
Shielding (Barrier Attenuation)	52.0	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6

STATIONARY SOURCE NOISE PREDICTION MODEL

7/26/2017

Observer Location: **R3**
Source: Peak Construction Activity
Condition: Construction

Project Name: Altitude
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	101.0 feet	***Barrier Height:***	**6.0 feet**
Noise Distance to Barrier:	91.0 feet	*Noise Source Height:*	8.0 feet
Barrier Distance to Observer:	10.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	0.0 feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	50.0	79.6	0.0	0.0	0.0	0.0	0.0
Distance Attenuation	101.0	-6.1	-6.1	-6.1	-6.1	-6.1	-6.1
Shielding (Barrier Attenuation)	91.0	-5.3	-5.3	-5.3	-5.3	-5.3	-5.3

STATIONARY SOURCE NOISE PREDICTION MODEL

7/26/2017

Observer Location: **R4**
Source: Peak Construction Activity
Condition: Construction

Project Name: Altitude
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	66.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	66.0 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)	50.0	79.6	0.0	0.0	0.0	0.0	0.0
Distance Attenuation	66.0	-2.4	-2.4	-2.4	-2.4	-2.4	-2.4
Shielding (Barrier Attenuation)	66.0	0.0	0.0	0.0	0.0	0.0	0.0

STATIONARY SOURCE NOISE PREDICTION MODEL

7/26/2017

Observer Location: **R5**
Source: Peak Construction Activity
Condition: Construction

Project Name: Altitude
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	211.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	211.0 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)	50.0	79.6	0.0	0.0	0.0	0.0	0.0
Distance Attenuation	211.0	-12.5	-12.5	-12.5	-12.5	-12.5	-12.5
Shielding (Barrier Attenuation)	211.0	0.0	0.0	0.0	0.0	0.0	0.0

STATIONARY SOURCE NOISE PREDICTION MODEL

7/26/2017

Observer Location: **R6**
Source: Peak Construction Activity
Condition: Construction

Project Name: Altitude
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	1,905.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	1,905.0 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)	50.0	79.6	0.0	0.0	0.0	0.0	0.0
Distance Attenuation	1,905.0	-31.6	-31.6	-31.6	-31.6	-31.6	-31.6
Shielding (Barrier Attenuation)	1,905.0	0.0	0.0	0.0	0.0	0.0	0.0

STATIONARY SOURCE NOISE PREDICTION MODEL

7/26/2017

Observer Location: **R7**
Source: Peak Construction Activity
Condition: Construction

Project Name: Altitude
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	1,163.0	feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	1,163.0	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)	50.0	79.6	0.0	0.0	0.0	0.0	0.0
Distance Attenuation	1,163.0	-27.3	-27.3	-27.3	-27.3	-27.3	-27.3
Shielding (Barrier Attenuation)	1,163.0	0.0	0.0	0.0	0.0	0.0	0.0

STATIONARY SOURCE NOISE PREDICTION MODEL

2/1/2018

Observer Location: **R4**
Source: Peak Construction Activity
Condition: Construction Mitigation

Project Name: Altitude
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	66.0 feet	***Barrier Height:***	**8.0 feet**
Noise Distance to Barrier:	10.0 feet	*Noise Source Height:*	8.0 feet
Barrier Distance to Observer:	56.0 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)	50.0	79.6	0.0	0.0	0.0	0.0	0.0
Distance Attenuation	66.0	-2.4	-2.4	-2.4	-2.4	-2.4	-2.4
Shielding (Barrier Attenuation)	10.0	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1

STATIONARY SOURCE NOISE PREDICTION MODEL

2/1/2018

Observer Location: **R5**
Source: Peak Construction Activity
Condition: Construction Mitigation

Project Name: Altitude
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	211.0 feet	***Barrier Height:***	**8.0 feet**
Noise Distance to Barrier:	60.0 feet	*Noise Source Height:*	8.0 feet
Barrier Distance to Observer:	151.0 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)	50.0	79.6	0.0	0.0	0.0	0.0	0.0
Distance Attenuation	211.0	-12.5	-12.5	-12.5	-12.5	-12.5	-12.5
Shielding (Barrier Attenuation)	60.0	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1

STATIONARY SOURCE NOISE PREDICTION MODEL

2/1/2018

Observer Location: **R8**
Source: Peak Construction Activity
Condition: Construction Mitigation

Project Name: Altitude
Job Number: 9776
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	103.0	feet	***Barrier Height:***	**8.0 feet**
Noise Distance to Barrier:	10.0	feet	*Noise Source Height:*	8.0 feet
Barrier Distance to Observer:	93.0	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)	50.0	79.6	0.0	0.0	0.0	0.0	0.0
Distance Attenuation	103.0	-6.3	-6.3	-6.3	-6.3	-6.3	-6.3
Shielding (Barrier Attenuation)	10.0	-4.9	-4.9	-4.9	-4.9	-4.9	-4.9

APPENDIX 10.2:

TEMPORARY CONSTRUCTION NOISE BARRIER EXAMPLE PHOTOS

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Temporary Construction Noise Barrier Examples



I-Beam & Acoustic Material 01



I-Beam & Acoustic Material 02



I-Beam & Acoustic Material 03



K-Rail Plywood & Acoustic Material



K-Rail Temporary Fence & Acoustic Material



K-Rail-Mounted Acoustic Material 01

Temporary Construction Noise Barrier Examples



Pillar & Acoustic Material



Straw Bales 01



Straw Bales 02



Temporary Fence & Acoustic Material 01



Temporary Fence & Acoustic Material 02