Colony Commerce Center East Specific Plan

NOISE IMPACT ANALYSIS

CITY OF ONTARIO

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LIST OF ABBREVIATED TERMS

(1)	Reference
ADT	Average Daily Traffic
ANSI	American National Standards Institute
Calveno	California Vehicle Noise
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
dBA	A-weighted decibels
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
Hz	Hertz
INCE	Institute of Noise Control Engineering
Leq	Equivalent continuous (average) sound level
Lmax	Maximum level measured over the time interval
Lmin	Minimum level measured over the time interval
mph	Miles per hour
OPR	Office of Planning and Research
PPV	Peak particle velocity
Project	Colony Commerce Center East Specific Plan
REMEL	Reference Energy Mean Emission Level
RMS	Root-mean-square
VdB	Vibration Decibels

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EXECUTIVE SUMMARY

Urban Crossroads, Inc. has prepared this noise study to determine the noise exposure and the necessary noise mitigation measures for the proposed Colony Commerce Center East Specific Plan development ("Project"). The Project site is located on the southwest corner of Archibald Avenue and Merrill Avenue in the City of Ontario. The proposed Project would develop and operate the Colony Commerce East Specific Plan. The Specific Plan contains three Planning Areas. Planning Area (PA) 1 and PA2 of the Specific Plan are anticipated to be operational by 2019. The remaining PA3 is proposed to be developed with up to 231,195 square feet (sf) of industrial use; however, the timeline for development is unknown, and is dependent upon economic conditions and full occupancy of PA1 and PA2. This analysis assumes that PA-3 would be developed and operational by year 2040. Since the Project site is located adjacent to the jurisdictional boundaries of the cities of Chino and Eastvale, this study has been prepared to satisfy applicable City of Ontario, Chino, and Eastvale noise standards and significance criteria based on guidance provided by Appendix G of the California Environmental Quality Act (CEQA) Guidelines.

OFF-SITE TRAFFIC NOISE ANALYSIS

Traffic generated by the operation of the proposed Project will influence the traffic noise levels in surrounding off-site areas. To quantify the off-site traffic noise increases on the surrounding off-site areas, the changes in traffic noise levels on 34 study-area roadway segments surrounding the Project site were calculated based on the change in the average daily traffic (ADT) volumes. The traffic noise levels provided in this analysis are based on the traffic forecasts found in the *Colony Commerce Center East Specific Plan Traffic Impact Analysis* prepared by Urban Crossroads, Inc. (1) To assess the off-site noise level impacts associated with the proposed Project, noise contour boundaries were developed for Existing, Opening Year 2019, and Horizon Year 2040 traffic conditions. The analysis shows that the Project-related traffic noise level increases under all traffic scenarios will be *less than significant*.

OPERATIONAL NOISE AND VIBRATION ANALYSIS

Using reference noise levels to represent the expected noise sources from the Colony Commerce Center East Specific Plan site, this analysis estimates the Project-related stationary-source noise levels at nearby sensitive receiver locations. The normal activities associated with the proposed Colony Commerce Center East Specific Plan are anticipated to include idling trucks, delivery truck activities, parking, backup alarms, as well as loading and unloading of dry goods, and roof-top air conditioning units. The operational noise analysis shows that the Project-related stationary-source noise levels due to the idling trucks, delivery truck activities, parking, backup alarms, as well as loading and unloading of dry goods, and roof-top air conditioning units will satisfy the City of Ontario, Chino, and Eastvale noise level standards at the nearby sensitive receiver locations.

Further, this analysis demonstrates that the Project will not contribute an operational noise level impact to the existing ambient noise environment at any of the sensitive receiver locations. Therefore, the operational noise level impacts associated with the proposed 24-hour seven days per week Project activities, such as the idling trucks, delivery truck activities, parking, backup

alarms, as well as loading and unloading of dry goods, and roof-top air conditioning units, will be *less than significant*.

The operation of the Project site will include heavy trucks transiting 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 Colony Commerce Center East Specific Plan heavy truck activity at normal traffic speeds will approach 0.001 in/sec RMS, based on the Federal Transit Administration (FTA) *Transit Noise Impact and Vibration Assessment*. (2) Truck deliveries 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 vibration threshold of 0.05 in/sec RMS, and therefore, will be *less than significant*.

CONSTRUCTION NOISE AND VIBRATION 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 Project site boundary. Using sample reference noise levels to represent the planned construction activities of the Colony Commerce Center East Specific Plan site, this analysis estimates the Project-related construction noise levels at nearby sensitive receiver locations. Since the cities of Ontario and Eastvale General Plan and Municipal Codes do not identify specific construction noise level limits, a 65 dBA Leq noise level threshold for construction activities is used in this noise study based on the City of Chino Municipal Code standards for construction, and consistent with other jurisdictions in the County of San Bernardino. The construction noise analysis shows that the unmitigated construction activities will satisfy the acceptable noise level threshold of 65 dBA Leq at the nearby sensitive receiver locations, and therefore, the noise level impacts at the nearby sensitive receiver locations are considered *less than significant*.

To describe the temporary Project construction noise level contributions to the existing ambient noise environment, the Project construction noise levels were combined with the existing ambient noise levels measurements at the off-site receiver locations. The difference between the combined Project-construction and ambient noise levels are used to describe the construction noise level contributions necessary to assess the level of significance associated with temporary construction noise level impacts. Since neither the City of Ontario or County of San Bernardino identify a *substantial* temporary noise level increase threshold for construction noise levels, the next applicable jurisdictional regulations were reviewed at the State-level. Caltrans' May 2011 *Traffic Noise Analysis Protocol* identifies a 12 dBA Leq noise level increase as *substantial,* and therefore, a 12 dBA Leq temporary noise level increase threshold is used in this noise study to address CEQA Noise Guideline D. (3) While the Caltrans 12 dBA Leq threshold was not created specifically for construction noise, it is applied in the Noise Study as a reasonable threshold to assess temporary, substantial noise level increases during Project construction. (3) No nighttime construction activity is permitted in the City of Ontario Municipal Code, and therefore, is not analyzed in this noise study. The Project will contribute unmitigated, worst-case construction noise level increases ranging from 0.4 to 10.5 dBA Leq during the daytime hours at the closest sensitive receiver locations. Since the worst-case temporary noise level increase of

up to 10.5 dBA Leq during Project construction satisfies the 12 dBA Leq significance threshold, the unmitigated construction noise level increases are considered *less than significant* temporary noise 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. This analysis shows the highest construction vibration levels in root-mean-square (RMS) velocity are expected to approach 0.002 in/sec RMS at the nearby receiver locations. Since the cities of Ontario and Eastvale do not identify specific vibration level thresholds, the vibration level threshold used in this report is based on the City of Chino 0.05 in/sec RMS standard. The construction vibration analysis shows that the proposed Project construction activities will satisfy the vibration standard of 0.05 in/sec RMS at all receiver locations during Project construction. Therefore, the Project-related vibration impacts will be *less than significant* during the construction activities at the Project site.

Further, the Project-related construction vibration levels do not represent levels capable of causing building damage to nearby residential homes. The FTA identifies construction vibration levels capable of building damage ranging from 0.12 to 0.5 in/sec PPV. (2) The peak Project-construction vibration levels, approaching 0.003 in/sec PPV, will not exceed the FTA vibration levels for building damage at the residential homes near the Project site. Further, the impacts at the site of the closest sensitive receivers are unlikely to be sustained during the entire construction period, but will occur rather only during the times that heavy construction equipment is operating adjacent to the Project site perimeter. Construction at the Project site will be restricted to daytime hours consistent with City requirements thereby eliminating potential vibration impact during the sensitive nighttime hours.

CONSTRUCTION NOISE AND VIBRATION ABATEMENT MEASURES

Though construction noise is temporary, intermittent and of short duration, and will not present any long-term impacts, the following abatement measures would reduce noise level increases produced by the construction equipment to the nearby noise-sensitive residential land uses.

- Prior to approval of grading plans and/or issuance of building permits, plans shall include a note indicating that noise-generating Project construction activities shall only occur between the hours of 7:00 a.m. to 6:00 p.m. any weekday, or on Saturday or Sunday from 9:00 a.m. to 6:00 p.m. (City of Ontario Municipal Code, Section 5-29.09).
- 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 (i.e., to the center) during all Project construction.

- The construction contractor shall limit haul truck deliveries to the same hours specified for construction equipment (between the hours of 7:00 a.m. to 6:00 p.m. any weekday, or on Saturday or Sunday from 9:00 a.m. to 6:00 p.m.). The contractor shall design delivery routes to minimize the exposure of sensitive land uses or residential dwellings to delivery truck-related noise.

SUMMARY OF SIGNIFICANCE FINDINGS

The results of this Colony Commerce Center East Specific Plan 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	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	*Less Than Significant*	*n/a*
Construction Vibration		*Less Than Significant*	*n/a*

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

1 INTRODUCTION

This noise analysis has been completed to determine the noise impacts associated with the development of the proposed Colony Commerce Center East Specific Plan ("Project"). This noise study briefly describes the proposed Project, provides information regarding noise fundamentals, describes the local regulatory setting, provides the study methods and procedures for 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 Colony Commerce Center East Specific Plan site is located on the southwest corner of Archibald Avenue and Merrill Avenue in the City of Ontario, as shown on Exhibit 1-A. The Project is contained within Planning Area (PA) 1 and PA 2 of the Colony Commerce East Specific Plan. The remaining PA 3 (Katob Property shown on Exhibit 1-B) is not a part of this Project and is proposed to be developed with up to 231,195 square feet of industrial use in the future. Interstate 15 (I-15) is located approximately two miles east of the Project site. The closest airport is Chino Airport, which is located roughly 1.3 miles west of the Project site; the Los Angeles / Ontario International Airport is located approximately five miles north of the Project site. Existing land uses in the Project study area include existing agricultural uses north, west, and south of the Project site, and residential homes east across Archibald Avenue.

1.2 PROJECT DESCRIPTION

The proposed Project would develop and operate the Colony Commerce East Specific Plan. The Specific Plan contains three Planning Areas. Planning Area (PA) 1 and PA2 of the Specific Plan are anticipated to be operational by 2019. The remaining PA3 is proposed to be developed with up to 231,195 square feet (sf) of industrial use; however, the timeline for development is unknown, and is dependent upon economic conditions and full occupancy of PA1 and PA2. This analysis assumes that PA-3 would be developed and operational by year 2040. As indicated on Exhibit 1-B, the total development of PA1 and PA2 is proposed to consist of up to 168,453-sf of manufacturing use (25 percent of the square footage for Buildings 1 through 8), 505,358-sf of warehousing use (75 percent of the square footage for Buildings 1 through 8), and 998,680-sf high-cube warehouse/distribution center use (Building 9). Similarly, PA3 would develop consist of up to 57,799-sf of manufacturing use (25 percent of the square footage), 173,396-sf of warehousing use (75 percent of the square footage).

At the time this noise analysis was prepared the future tenants of the proposed Project were unknown. To present the potential worst-case noise conditions, this analysis assumes the Project would be operational 24 hours per day, seven days per week. The Project business operations would primarily be conducted within the enclosed buildings, except for traffic movement, parking, as well as loading and unloading of trucks at designated loading bays. The on-site Project-related noise sources are expected to include: idling trucks, delivery truck activities, parking, backup alarms, as well as loading and unloading of dry goods, and roof-top air

conditioning units. This noise analysis is intended to describe noise level impacts associated with the expected typical industrial activities at the Project site.

According to the *Colony Commerce Center East Specific Plan Traffic Impact Analysis* prepared by Urban Crossroads, Inc., under year 2019 conditions, the Project is expected to generate a net total of approximately 3,003 trip-ends per day (actual vehicles) with 279 AM peak hour trips and 316 PM peak hour trips. Under Horizon Year 2040 conditions, the Project is expected to generate a net total of approximately 3,533 trip-ends per day (actual vehicles) with 343 AM peak hour trips and 385 PM peak hour trips. (1) The net Project trip generation includes 764 truck trip-ends per day from the proposed buildings within the Project site under Opening Year 2019 conditions, and 873 truck trip-ends per day under Horizon Year 2040 conditions. This noise study relies on the net Project trips to accurately account for the effect of individual truck trips on the study area roadway network.

EXHIBIT 1-A: LOCATION MAP

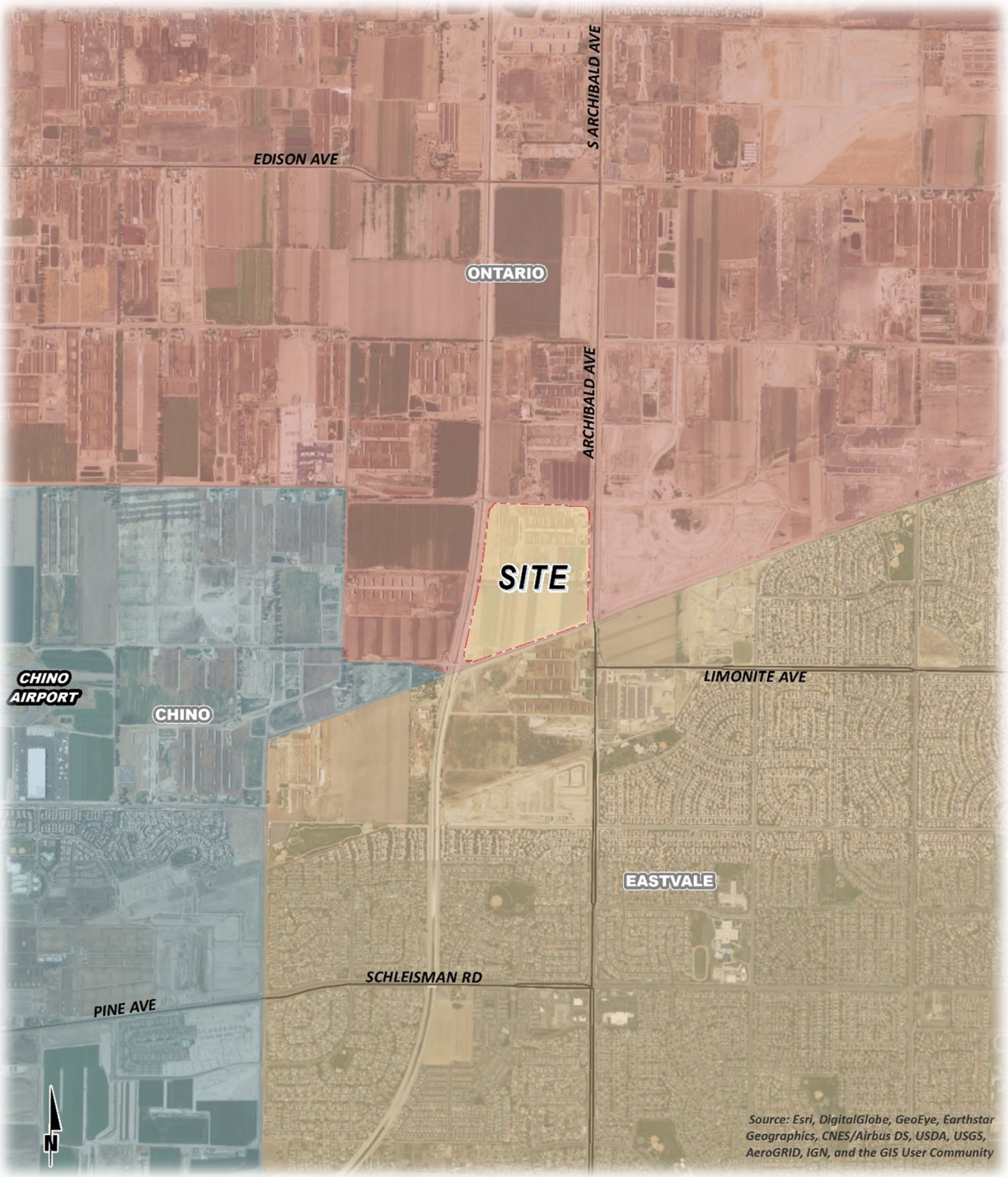
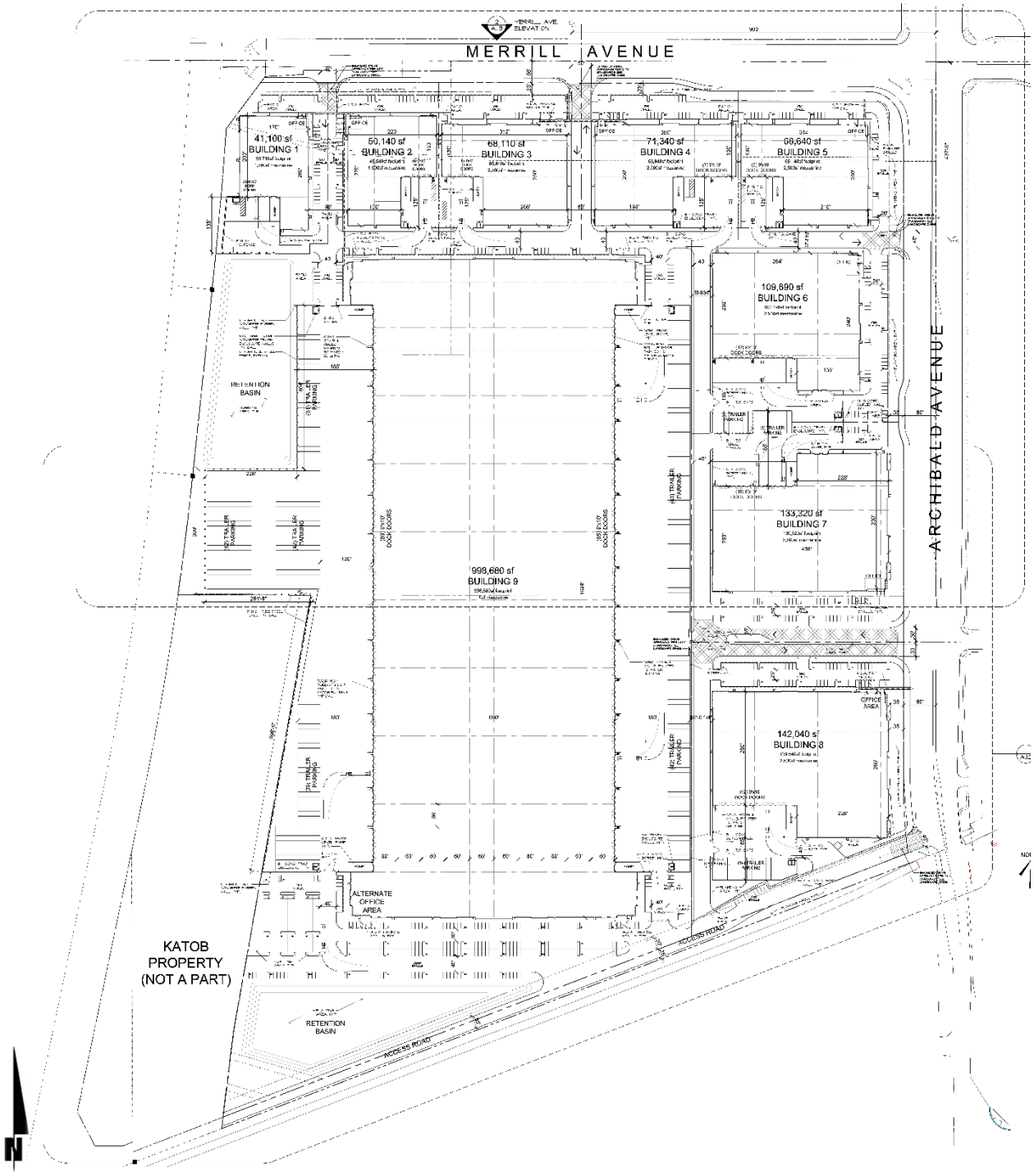


EXHIBIT 1-B: SITE PLAN



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

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

2.2 NOISE DESCRIPTORS

Environmental noise descriptors are generally based on averages, rather than instantaneous, noise levels. The most commonly used figure is the equivalent level (Leq). 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 (Leq) 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 mean noise levels occurring 50 percent of the time, the Leq accounts for the total energy (average) observed for the entire hour. Therefore, the Leq 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 Leq sound levels in the evening from 7:00 p.m. to 10:00 p.m., and the addition of 10 decibels to dBA Leq sound levels at night between 10:00 p.m. and 7:00 a.m. These additions are made to account for the noise sensitive time periods during the evening and night hours when sound appears louder. CNEL does not represent the actual sound level heard at any time, but rather represents the total sound exposure. The City of Ontario relies on the 24-hour CNEL level to assess land use compatibility with transportation related noise sources.

2.3 SOUND PROPAGATION

When sound propagates over a distance, it changes in level and frequency content. The way noise is reduced 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.

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.

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 increase noise levels.

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.

2.4 NOISE CONTROL

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

2.5 NOISE BARRIER ATTENUATION

Effective noise barriers can reduce noise levels by 10 to 15 dBA, cutting the loudness of traffic noise in half. A noise barrier is most effective when placed close to the noise source or receptor. Noise barriers, however, do have limitations. For a noise barrier to work, it must be high enough and long enough to block the path of the noise source. (6)

2.6 LAND USE COMPATIBILITY WITH NOISE

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

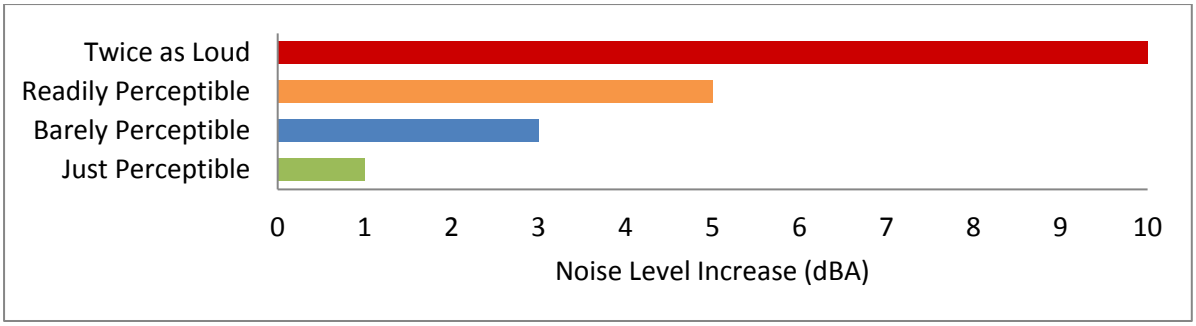
2.7 COMMUNITY RESPONSE TO NOISE

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

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

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

EXHIBIT 2-B: NOISE LEVEL INCREASE PERCEPTION



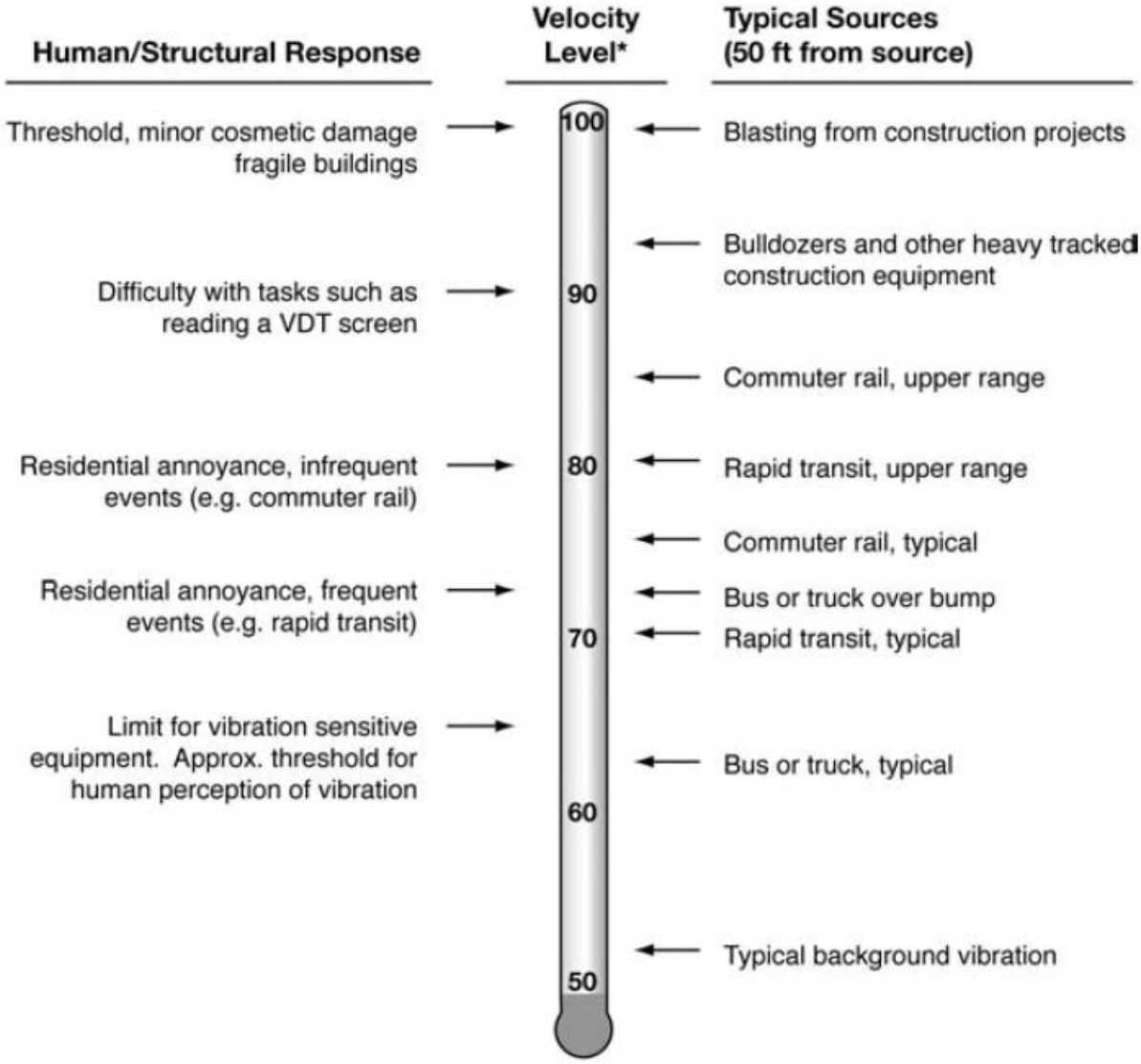
2.8 VIBRATION

Per the Federal Transit Administration (FTA) *Transit Noise Impact and Vibration Assessment* (2), vibration is the periodic oscillation of a medium or object. The rumbling sound caused by the vibration of room surfaces is called structure-borne noise. Sources of ground-borne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or human-made causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, such as factory machinery, or transient, such as explosions. As is the case with airborne sound, ground-borne vibrations may be described by amplitude and frequency.

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

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

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



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

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

3 REGULATORY SETTING

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

3.1 STATE OF CALIFORNIA NOISE REQUIREMENTS

The State of California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise standards, and provides guidance for local land use compatibility. State law requires that each county and city adopt a General Plan that includes a Noise Element which is to be prepared per guidelines adopted by the Governor's Office of Planning and Research (OPR). (9) 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. (10) 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 Leq for any hour of operation, a wall and roof-ceiling combined STC rating of 45, and exterior windows with a minimum STC rating of 40 are required (Section 5.507.4.1).

3.3 CITY OF ONTARIO GENERAL PLAN NOISE ELEMENT

The City of Ontario General Plan (The Ontario Plan) identifies several policies to minimize the impacts of excessive noise levels throughout the community. Section S4, Noise Hazards, of The Ontario Plan is contained within the safety section of the policy plan. The noise hazards section establishes a goal of maintaining *an environment where noise does not adversely affect the public's health, safety, and welfare.* (11) To satisfy this goal, the policy plan identifies six policies related to: noise mitigation; coordination with transportation authorities; airport noise mitigation; truck traffic; roadway design; and airport noise compatibility.

The noise criteria identified in The Ontario Plan Safety Section on Noise Hazards (Table LU-7) are guidelines to evaluate the land use compatibility of transportation-related noise. The *Noise Level Exposure and Land Use Compatibility Guidelines*, shown on Exhibit 3-A, describe categories of compatibility and not specific noise standards. The proposed Colony Commerce Center East Specific Plan industrial warehousing land use is considered *clearly acceptable* with unmitigated exterior noise levels approaching 70 dBA CNEL and *normally acceptable* with noise levels up to 80 dBA CNEL. For noise levels greater than 80 dBA CNEL, industrial land uses are considered *normally unacceptable* and new construction is discouraged. Noise/avigation easements are required for all new construction. If new construction does proceed, a detailed analysis of noise reduction requirements must be made and necessary noise insulation features included in the design.

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

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

LEGEND

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

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

3.4 OPERATIONAL NOISE STANDARDS

To analyze noise impacts originating from a designated fixed location or private property such as the Colony Commerce Center East Specific Plan Project, stationary-source (operational) noise such as the expected idling trucks, delivery truck activities, parking, backup alarms, as well as loading and unloading of dry goods, and roof-top air conditioning units are typically evaluated against standards established under a City's Municipal Code. Although the Project site is located within the City of Ontario, sensitive receivers are also located in the adjacent cities of Chino and Eastvale. Therefore, to accurately describe the potential operational noise levels, this analysis presents the appropriate operational noise standards for each of the noise-sensitive receivers located within the cities of Ontario, Chino, and Eastvale.

3.4.1 CITY OF ONTARIO OPERATIONAL NOISE STANDARDS

The City of Ontario Municipal Code, Title 5, Chapter 29 noise standards are included in Appendix 3.1 for those sensitive receiver locations within the City of Ontario. Section 5-29.04(a) identifies the acceptable daytime and nighttime ambient exterior noise standards for each land use type. For Manufacturing and Industrial land uses (Noise Zone V), such as the Project, ambient exterior noise levels may not exceed 70 dBA Leq. For residential land uses (Noise Zone I), ambient exterior noise levels may not exceed 65 dBA Leq during the daytime hours (7:00 a.m. to 10:00 p.m.), and may not exceed 45 dBA Leq during the nighttime hours (10:00 p.m. to 7:00 a.m.). (12) The maximum acceptable Project-related operational noise levels received at off-site land uses in the City of Ontario are identified on Table 3-1.

3.4.2 CITY OF CHINO OPERATIONAL NOISE STANDARDS

The City of Chino Noise Ordinance included in the Municipal Code (Chapter 9.40) establishes the maximum permissible noise level that may intrude into a neighbor's property. The Noise Ordinance (Section 9.40.040) establishes the exterior noise level criteria for residential properties affected by stationary noise sources. While the Municipal Code identifies noise zones for commercial (Zone II), manufacturing and industrial properties (Zone III), it only establishes exterior noise standards for residential property (Section 9.40.030). For residential properties (Noise Zone 1), the exterior noise level shall not exceed 55 dBA during daytime hours (7:00 a.m. to 10:00 p.m.) and shall not exceed 50 dBA during the nighttime hours (10:00 p.m. to 7:00 a.m.) for more than 30 minutes in any hour. (13) These standards shall apply for a cumulative period of 30 minutes in any hour, as well as plus 5 dBA cannot be exceeded for a cumulative period of more than 15 minutes in any hour, or the standard plus 10 dBA for a cumulative period of more than 5 minutes in any hour, or the standard plus 15 dBA for a cumulative period of more than 1 minute in any hour, or the standard plus 20 dBA for any period of time. The City of Chino Municipal Code operational noise level standards are shown on Table 3-1 and included in Appendix 3.2.

3.4.3 CITY OF EASTVALE OPERATIONAL NOISE STANDARDS

Since the Project would produce noise levels at sensitive receivers in the City of Eastvale, this report considers the City of Eastvale Municipal Code, Title 8, Chapter 52, included in Appendix

3.3. Section 8.52.040 identifies acceptable daytime and nighttime ambient exterior noise standards based on land use type. However, it is important to recognize that the City of Eastvale Municipal Code noise level standards incorrectly identify maximum noise level (Lmax) standards that should instead reflect the average Leq noise levels. This inaccuracy was originally adopted in the Municipal Code by the County of Riverside and subsequently adopted by the City of Eastvale at the time of incorporation. Based on several discussions with the County of Riverside Office of Industrial Hygiene, the Municipal Code stationary source noise level standards should reflect the average Leq noise levels. (14)

As shown on Table 3-1, correcting the City of Eastvale Lmax criteria to Leq brings the stationary source exterior noise level criteria in line with the residential noise standards within the City of Chino. For the residential land uses located in the City of Eastvale near the Project site, ambient exterior noise levels may not exceed 55 dBA Leq during the daytime hours (7:00 a.m. to 10:00 p.m.), and may not exceed 45 dBA Leq during the nighttime hours (10:00 p.m. to 7:00 a.m.). (15) The City of Eastvale Municipal Code noise standards are included in Appendix 3.3.

TABLE 3-1: OPERATIONAL NOISE STANDARDS

City	Land Use	Time Period	Exterior Noise Levels (dBA)[4]					
			Leq (E. Avg.)	L_{50} (30 mins)	L_{25} (15 mins)	L_8 (5 mins)	L_2 (1 min)	L_{max} (Anytime)
Ontario[1]	Residential	Daytime	65	-	65	-	-	85
		Nighttime	45	-	45	-	-	65
Chino[2]	Residential	Daytime	-	55	60	65	70	75
		Nighttime	-	50	55	60	65	70
Eastvale[3]	Residential	Daytime	55	-	-	-	-	-
		Nighttime	45	-	-	-	-	-

[1] Source: Section 5-29.04 of the City of Ontario Municipal Code (Appendix 3.1).
[2] Source: Section9.40.040 of the City of Chino Municipal Code (Appendix 3.2).
[3] Source: Section 8.52.040 of the City of Eastvale Municipal Code (Appendix 3.3).
[4] Leq represents a steady state sound level containing the same total energy as a time varying signal over a given sample period. The percent noise level is the level exceeded "n" percent of the time during the measurement period. L_{25} is the noise level exceeded 25% of the time. "Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.; "E. Avg." = logarithmic (energy) average

3.5 CONSTRUCTION NOISE STANDARDS

To analyze noise impacts originating from the construction of the Colony Commerce Center East Specific Plan, 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 Ontario, Chino, and Eastvale to determine the potential noise impacts at receivers within each jurisdiction. The construction-related noise standards for each City are summarized in Table 3-2.

3.5.1 CITY OF ONTARIO CONSTRUCTION NOISE STANDARDS

The City of Ontario has set restrictions to control noise impacts associated with construction. Section 5-29.09 of the Municipal Code states: *No person, while engaged in construction, remodeling, digging, grading, demolition or any other related building activity, shall operate any tool, equipment or machine in a manner that produces loud noise that disturbs a person of normal sensitivity who works or resides in the vicinity, or a Police or Code Enforcement Officer, on any weekday except between the hours of 7:00 a.m. and 6:00 p.m. or on Saturday or Sunday between the hours of 9:00 a.m. and 6:00 p.m.* (12) While the City establishes limits to the hours during which construction activity may take place, it does not identify specific noise level limits for construction noise levels at potentially affected receiver locations.

3.5.2 CITY OF CHINO CONSTRUCTION NOISE STANDARDS

The City of Chino has set restrictions to control noise impacts associated with construction activities throughout the City. Section 9.40.060(D) of the City's Noise Ordinance indicates that noise sources associated with construction, repair, remodeling, or grading of any real property, are exempt from the provisions of the noise ordinance, provided the construction activities take place between the hours of 7:00 a.m. and 8:00 p.m. Monday through Saturday, with no construction allowed on Sundays and Federal holidays (Section 15.44.030), and provided the noise levels exceeding 65 dBA L_{50} when measured on residential property do not endanger the public health, welfare and safety. (12) However, neither the City's General Plan or Municipal Code establish numeric maximum acceptable construction source noise levels at potentially affected receivers, which would allow for a quantified determination of what CEQA constitutes a *substantial temporary or periodic noise increase*.

3.5.3 CITY OF EASTVALE CONSTRUCTION NOISE STANDARDS

The City of Eastvale has set restrictions to control noise impacts associated with construction. Section 8.52.020 of the Municipal Code states that construction noise is exempt from the Noise ordinance if the construction of the project is one-quarter of a mile from an inhabited dwelling and occurs between the permitted hours of 6:00 a.m. and 6:00 p.m. during the months of June through September, and between 7:00 a.m. and 6:00 p.m. during the months of October through May. (15) While the City establishes limits to the hours during which construction activity may take place, it does not identify specific noise level limits for construction noise levels at potentially affected receivers.

3.5.4 CONSTRUCTION NOISE LEVEL COMPLIANCE THRESHOLD

Although construction noise may not pose a health risk or damage human hearing, it has the potential to adversely affect people's quality of life. Noise annoys, awakens, angers and frustrates people. It disrupts communication and individual thoughts and affects performance capabilities. Noise is one of the biological stressors associated with everyday life. Thus, the numerous effects of noise combine to detract from the quality of people's lives and the environment. (16)

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 Leq 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 Ontario 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 (Lmax).

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

TABLE 3-2: CONSTRUCTION NOISE LEVEL COMPLIANCE STANDARDS

City	Permitted Hours of Construction Activity	Construction Noise Level Standards				
		L_{50} (30 mins)	L_{25} (15 mins)	L_8 (5 mins)	L_2 (1 min)	L_{max} (Anytime)
Ontario[1]	7:00 a.m. to 6:00 p.m. any weekday, or on Saturday or Sunday from 9:00 a.m. to 6:00 p.m.	n/a	n/a	n/a	n/a	n/a
Chino[2]	7:00 a.m. to 8:00 p.m. Monday through Saturday; not allowed on Sundays or Federal Holidays.	65	70	75	80	85
Eastvale[3]	6:00 a.m. to 6:00 p.m. June through September, and 7:00 a.m. to 6:00 p.m. October through May.	n/a	n/a	n/a	n/a	n/a
Acceptable thresholds for determining the relative significance of Project construction noise levels[4]:		65	70	75	80	85

[1] Source: Section 5-29.09 of the City of Ontario Municipal Code (Appendix 3.1).
[2] Source: Section9.40.060 of the City of Chino Municipal Code (Appendix 3.2).
[3] Source: Section 8.52.020 of the City of Eastvale Municipal Code (Appendix 3.3).
[4] Within the County of San Bernardino, construction noise level limits of 65 dBA Leq are identified in the following cities: Rancho Cucamonga (Development Code, Section 17.66.050(D)(4)(a) Noise Standards); Adelanto (Code of Ordinances, Section 17.90.020(d) Construction Practices); and Chino (Municipal Code, Section 9.40.060(D) Special Provisions).
"n/a" = Municipal Code does not identify maximum acceptable construction source noise levels.

3.6 VIBRATION STANDARDS

To analyze vibration impacts originating from the operation and construction of the Colony Commerce Center East Specific Plan, vibration-generating activities are typically evaluated against standards established under a City's Municipal Code. However, neither the City of Ontario or City of Eastvale identify specific vibration level limits. Therefore, the City of Chino Municipal Code vibration level standards are used in this analysis to assess potential impacts at nearby sensitive receiver locations. The vibration standards are summarized on Table 3-3.

3.6.1 OPERATIONAL-SOURCE VIBRATION STANDARDS

City of Chino Noise Ordinance Section 9.40.110 - *Vibration*, states in pertinent part: *it is unlawful for any person to create, maintain or cause any ground vibration which is perceptible without instruments at any point on any affected property adjoining the property on which the vibration source is located*. *For the purpose of this chapter, the perception threshold shall be presumed to be more than 0.05 inches per second (root mean square–RMS) vertical velocity*. (13)

3.6.2 CONSTRUCTION-SOURCE VIBRATION STANDARDS

The City of Chino Noise Ordinance Section 9.40.060(D) states that vibration created by construction activities is exempt from provisions of the Ordinance, if any construction-source vibration does not endanger the public health, welfare, and safety. Therefore, to determine if the vibration levels due to construction will endanger the public health, welfare, and safety of

nearby sensitive receiver locations, the operational vibration level standard of 0.05 inches per second (RMS) is used.

TABLE 3-3: VIBRATION STANDARDS

City	Root-Mean-Square Velocity (in/sec)
Ontario[1]	n/a
Chino[2]	0.05
Eastvale[3]	n/a

[1] "n/a" = The City of Ontario does not identify specific vibration level standards.
[2] Source: Section 9.40.110 of the City of Chino Municipal Code.
[3] "n/a" = The City of Eastvale does not identify specific vibration level standards. The City of Chino RMS velocity of 0.05 in/sec vibration standard is used in this analysis to evaluate the potential impacts at nearby residential receivers in the City of Ontario and the City of Eastvale.

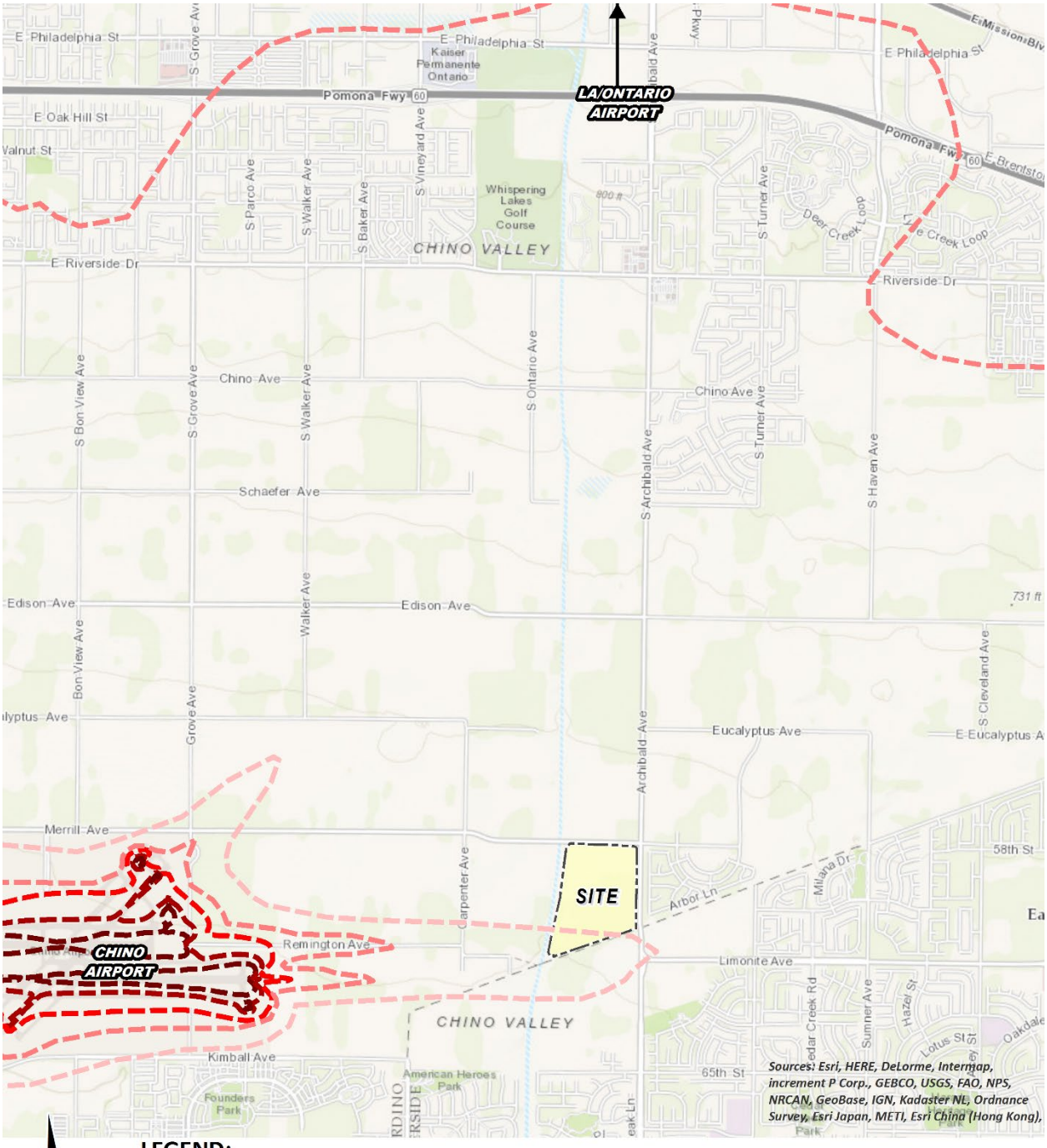
3.7 AIRPORT LAND USE COMPATIBILITY

The closest airport requiring analysis under CEQA guidelines is Chino Airport, which is located roughly 1.3 miles west of the Project site. The Los Angeles / Ontario International Airport (LA/ONT) is located approximately five miles north of the Project site. As shown on Exhibit 3-B, the Project site is partially located within the 55 dBA noise level contour boundaries of Chino Airport but is not located within the noise level contour boundaries of LA/ONT. The *Chino Airport Master Plan*, (17) prepared by the County of San Bernardino, identifies noise compatibility policies based on the *Chino Airport Comprehensive Land Use Plan* (ACLUP). (18) The ACLUP establishes threshold for aircraft noise exposure for new developments. The *Chino Airport Master Plan* shows the noise level contour boundaries for Year 2009, 2015, and 2030 conditions. Based on Year 2030 conditions, the Project site will be partially located within the 55 to 60 dBA CNEL noise contour boundaries, as shown on Exhibit 3-B. Table 2B of the ALUCP indicates that exterior noise levels below 65 dBA CNEL at light 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.* (18)

Since the Project site is still within the airport influence area of LA/ONT, the *LA/Ontario International Airport Land Use Compatibility Plan* Table 2-3 Noise Criteria apply to the Project. (19) Industrial land uses located outside of the 60 dBA CNEL noise level contours of LA/ONT, such as the Project, are considered *normally compatible land use* and must reduce interior noise levels to 50 dBA CNEL. Standard building construction consistent with the 2014 State of California Green Building Standards Code typically provides up to 25 dBA CNEL of attenuation, which will reduce the exterior noise levels of up to 60 dBA CNEL from Chino Airport to interior noise levels within the building of less than the 50 dBA CNEL interior noise level standard of the *LA/Ontario International Airport Land Use Compatibility Plan*. Therefore, since the Project land use is considered *normally acceptable* and standard construction will satisfy the interior noise level

standard of 50 dBA CNEL, 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: AIRPORT NOISE LEVEL CONTOUR BOUNDARIES



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

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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 Ontario General Plan Guidelines provide direction on noise compatibility and establish noise standards by land use type that are sufficient to assess the significance of noise impacts 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 closest airport which would require additional noise analysis under CEQA guidelines E and F is the Chino Airport. Based on Chino Airport noise contours under Year 2030 conditions, the Project site will be partially located within the 55 to 60 dBA CNEL noise contour boundaries, as shown on Exhibit 3-B. Table 2B of the ALUCP indicates that exterior noise levels below 65 dBA CNEL at light 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.* (18)

Since the Project site is also located within the airport influence area of LA/ONT, the *LA/Ontario International Airport Land Use Compatibility Plan* Table 2-3 Noise Criteria apply to the Project. (19) Industrial land uses located outside of the 60 dBA CNEL noise level contours of LA/ONT, such as the Project, are considered *normally compatible land use* and must reduce interior noise levels to 50 dBA CNEL. Standard building construction consistent with the 2014 State of California Green Building Standards Code typically provides up to 25 dBA CNEL of attenuation, which will reduce the exterior noise levels of up to 60 dBA CNEL from Chino Airport to interior noise levels within the building of less than the 50 dBA CNEL interior noise level standard of the *LA/Ontario International Airport Land Use Compatibility Plan*. Therefore, the potential impacts under CEQA guidelines E and F are *less than significant*, and are not further analyzed in this noise study.

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.* (20) 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.

4.1.1 SUBSTANTIAL PERMANENT NOISE LEVEL INCREASES

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) (21) 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. According to the FICON, in areas where the without project noise levels range from 60 to 65 dBA, a 3 dBA *barely perceptible* noise level increase appears to be appropriate for most people. When the without project noise levels already exceed 65 dBA, any increase in community noise louder than 1.5 dBA or greater is considered a significant impact if the noise criteria for a given land use is exceeded, since it likely contributes to an existing noise exposure exceedance. Table 4-1 below provides a summary of the potential noise impact significance criteria, based on guidance from FICON.

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

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

Federal Interagency Committee on Noise (FICON), 1992.

4.1.2 SUBSTANTIAL TEMPORARY OF PERIODIC NOISE LEVEL INCREASES

Due to the temporary, short-term nature of noise-generating construction activities, the temporary or periodic noise level increases over the existing ambient conditions must be considered under CEQA Guideline D for *a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above noise levels existing without the proposed Project*, consistent with the legal case, *Friends of Riverside's Hills v. Riverside Transportation Commission, et al.* (22) Since neither the City of Ontario or County of San Bernardino identify a *substantial* temporary noise level increase threshold for construction noise levels, the next applicable jurisdictional regulations were reviewed at the State-level. Caltrans' May 2011 *Traffic Noise Analysis Protocol* identifies a 12 dBA Leq noise level increase as *substantial,* and therefore, a 12 dBA Leq temporary noise level increase threshold is used in this noise study to address CEQA Noise Guideline D. (3) While the Caltrans 12 dBA Leq threshold was not created specifically for construction noise, it is applied in the Noise Study as a reasonable threshold to assess temporary, substantial noise level increases during Project construction.

Therefore, the Caltrans *Traffic Noise Analysis Protocol* 12 dBA Leq *substantial* noise level increase threshold is used in this analysis to assess temporary noise level increases. (3) If the Project-related construction noise levels generate a temporary noise level increase above the existing ambient noise levels of up to 12 dBA Leq, then the Project construction noise level increases will be considered a potentially significant impact. (3)

4.2 NON-NOISE-SENSITIVE RECEIVERS

The Ontario Plan Safety Section on Noise Hazards (Table LU-7) identifies guidelines to evaluate the land use compatibility of transportation-related noise. The *Noise Level Exposure and Land Use Compatibility Guidelines*, previously shown on Exhibit 3-A, describe categories of compatibility and not specific noise standards. The proposed Colony Commerce Center East Specific Plan industrial warehousing land use is considered *clearly acceptable* with unmitigated exterior noise levels approaching 70 dBA CNEL and *normally acceptable* with noise levels up to 80 dBA CNEL.

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 Ontario Plan Safety Section on Noise Hazards (Table LU-7) *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 Ontario Plan Safety Section on Noise Hazards (Table LU-7) 70 dBA CNEL noise criteria and the Project creates a *readily perceptible* 5 dBA CNEL or greater Project-related noise level increase; or
  - are greater than The Ontario Plan Safety Section on Noise Hazards (Table LU-7) 70 dBA CNEL noise criteria and the Project creates a *barely perceptible* 3 dBA CNEL or greater Project-related noise level increase.

OPERATIONAL NOISE

- If Project-related operational (stationary-source) noise levels:

  exceed the exterior daytime (65 dBA Leq, 65 dBA L_{25}, or 85 dBA Lmax) or nighttime (45 dBA Leq, 45 dBA L_{25}, or 65 dBA Lmax) noise level standards at nearby sensitive residential land uses within the City of Ontario (Section 5-29.04 of the City of Ontario Municipal Code); or
  - exceed the exterior 55 dBA L_{50} daytime or 50 dBA L_{50} nighttime noise level standards for sensitive residential land uses in the City of Chino. 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) (Section9.40.040 of the City of Chino Municipal Code); or
  - exceed the exterior 55 dBA Leq daytime or 45 dBA Leq nighttime noise level standards at nearby sensitive receiver locations in the City of Eastvale (8.52.040 of the City of Eastvale Municipal Code).
- If the existing ambient noise levels at the nearby noise-sensitive receivers near the Project site:
  - are less than 60 dBA and the Project creates a *readily perceptible* 5 dBA or greater Project-related noise level increase; or
  - range from 60 to 65 dBA and the Project creates a *barely perceptible* 3 dBA or greater Project-related noise level increase; or

- already exceed 65 dBA, and the Project creates a community noise level impact of greater than 1.5 dBA (FICON, 1992).

CONSTRUCTION NOISE AND VIBRATION

- If Project-related construction activities:
  - occur at any time other than the permitted hours of 7:00 a.m. to 6:00 p.m. any weekday, or on Saturday or Sunday from 9:00 a.m. to 6:00 p.m. (City of Ontario Municipal Code, Section 5-29.09); or
  - create noise levels at sensitive residential receivers which exceed the construction noise level limit of 65 dBA Leq at nearby sensitive receiver locations (Acceptable construction noise level limit based on the City of Chino Municipal Code, Section 9.40.060(D), and other jurisdictions in the County of San Bernardino); or
  - generate temporary Project construction-related noise level increases which exceed the 12 dBA Leq *substantial* noise level increase threshold at noise-sensitive receiver locations (Caltrans, Traffic Noise Analysis Protocol).
- 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 (Section 9.40.110 of the City of Chino Municipal Code. The City of Ontario and Eastvale do not identify specific vibration level standards.).

TABLE 4-2: SIGNIFICANCE CRITERIA SUMMARY

Analysis	Receiving Land Use	Jurisdiction	Condition(s)	Significance Criteria	
				Daytime	Nighttime
Off-Site	Noise-Sensitive[1]	All	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-Sensitive	Ontario[3]	Hourly Leq	65	45
			≥ 15 Minutes L_{25}	65	45
			Anytime L_{max}	85	65
		Chino[4]	≥ 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
		Eastvale[5]	Hourly Leq	55	45
		All	if ambient is < 60 dBA Leq[1]	≥ 5 dBA Leq Project increase	
			if ambient is 60 - 65 dBA Leq[1]	≥ 3 dBA Leq Project increase	
			if ambient is > 65 dBA Leq[1]	≥ 1.5 dBA Leq Project increase	
Construction	Noise-Sensitive	Ontario[6]	Permitted hours of 7:00 a.m. to 6:00 p.m. any weekday, or on Saturday or Sunday from 9:00 a.m. to 6:00 p.m.		
		All	Noise Level Threshold[7]	65 dBA Leq	n/a
			Noise Level Increase[8]	12 dBA Leq	n/a
			Vibration Level Threshold[9]	0.05 in/sec RMS	n/a

[1] Source: FICON, 1992.
[2] Based on the land use compatibility criteria found in The Ontario Plan Safety Section on Noise Hazards (Table LU-7).
[3] Source: Section 5-29.04 of the City of Ontario Municipal Code (Appendix 3.1).
[4] Source: Section9.40.040 of the City of Chino Municipal Code (Appendix 3.2).
[5] Source: 8.52.040 of the City of Eastvale Municipal Code (Appendix 3.3).
[6] Source: Section 5-29.09 of the City of Ontario Municipal Code (Appendix 3.1).
[7] Acceptable construction noise level threshold based on the City of Chino construction noise level limits of 65 dBA; also identified in the following cities within the County of San Bernardino: Rancho Cucamonga (Development Code, Section 17.66.050(D)(4)(a) Noise Standards); Adelanto (Code of Ordinances, Section 17.90.020(d) Construction Practices); and Chino (Municipal Code, Section 9.40.060(D) Special Provisions).
[8] Source: Caltrans Traffic Noise Analysis Protocol, May 2011.
[9] Source: Section 9.40.110 of the City of Chino Municipal Code. The City of Ontario and Eastvale do not identify specific vibration level standards.
"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.; "n/a" = No nighttime construction activity is permitted, so no nighttime construction noise level limits are identified; "RMS" = root-mean-square

5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, six 24-hour noise level measurements were taken at sensitive receiver locations in the Project study area. The receiver locations were selected to describe and document the existing noise environment within the Project study area. Exhibit 5-A provides the boundaries of the Project study area and the noise level measurement locations. To fully describe the existing noise conditions, noise level measurements were collected by Urban Crossroads, Inc. on Wednesday, January 25th, 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 any part of a private yard, patio, deck, or balcony normally used for human activity when estimating impacts for new development projects. This is demonstrated in the Caltrans general site location guidelines which indicate that, *sites must be free of noise contamination by sources other than sources of interest. Avoid sites located near sources such as barking dogs, lawnmowers, pool pumps, and air conditioners unless it is the express intent of the analyst to measure these sources*. (4) 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*. (2)

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. (2) In other words, the area represented by the receiver shares similar shielding, terrain, and geometric relationship to the reference noise source. Receivers represent a location of noise sensitive areas and are used to estimate the future noise level impacts. Collecting reference ambient noise level measurements at the nearby sensitive receiver locations allows for a comparison of the before and after Project noise levels

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

5.3 NOISE MEASUREMENT RESULTS

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

- Location L1 represents the noise levels Located west of the Project site on Merrill Avenue adjacent to existing agricultural land use. The noise level measurements collected show an overall 24-hour exterior noise level of 71.1 dBA CNEL. The hourly noise levels measured at location L1 ranged from 62.0 to 67.9 dBA Leq during the daytime hours and from 56.6 to 69.2 dBA Leq during the nighttime hours. The energy (logarithmic) average daytime noise level was calculated at 65.6 dBA Leq with an average nighttime noise level of 64.2 dBA Leq.
- Location L2 represents the noise levels north of the Project site adjacent to an existing residential home on agricultural land use. The noise level measurements collected show an overall 24-hour exterior noise level of 60.4 dBA CNEL. The hourly noise levels measured at location L2 ranged from 38.5 to 61.5 dBA Leq during the daytime hours and from 42.6 to 55.4 dBA Leq during the nighttime hours. The energy (logarithmic) average daytime noise level was calculated at 54.8 dBA Leq with an average nighttime noise level of 53.8 dBA Leq.
- Location L3 represents the noise levels east of the Project site on Merrill Avenue adjacent to existing residential homes. The 24-hour CNEL indicates that the overall exterior noise level is 70.0 dBA CNEL. At location L3 the background ambient noise levels ranged from 53.2 to 67.7 dBA Leq during the daytime hours to levels of 58.5 to 66.5 dBA Leq during the nighttime hours. The energy (logarithmic) average daytime noise level was calculated at 62.9 dBA Leq with an average nighttime noise level of 63.4 dBA Leq.
- Located east of the Project site, location L4 represents the noise levels across Archibald Avenue adjacent to existing residential homes. The noise level measurements collected show an overall 24-hour exterior noise level of 70.3 dBA CNEL. The hourly noise levels measured at location L4 ranged from 61.7 to 68.1 dBA Leq during the daytime hours and from 57.6 to 68.1 dBA Leq during the nighttime hours. The energy (logarithmic) average daytime noise level was calculated at 65.2 dBA Leq with an average nighttime noise level of 63.3 dBA Leq.
- Location L5 represents the noise levels adjacent to the southeast Project site boundary on Archibald Avenue, north of existing agricultural land use. The noise level measurements collected show an overall 24-hour exterior noise level of 71.4 dBA CNEL. The hourly noise levels measured at location L5 ranged from 62.4 to 68.4 dBA Leq during the daytime hours and from 59.5 to 68.6 dBA Leq during the nighttime hours. The energy (logarithmic) average daytime noise level was calculated at 65.8 dBA Leq with an average nighttime noise level of 64.4 dBA Leq.
- Location L6 represents the noise levels southwest of the Project site on Remington Avenue adjacent to existing agricultural land use. The noise level measurements collected show an overall 24-hour exterior noise level of 61.5 dBA CNEL. The hourly noise levels measured at location L6 ranged from 51.7 to 62.7 dBA Leq during the daytime hours and from 48.4 to 59.1 dBA Leq during

the nighttime hours. The energy (logarithmic) average daytime noise level was calculated at 57.5 dBA Leq with an average nighttime noise level of 53.9 dBA Leq.

Table 5-1 provides the (energy average) noise levels used to describe the daytime and nighttime ambient conditions. These daytime and nighttime energy average noise levels represent the average of all hourly noise levels observed during these time periods expressed as a single number. Appendix 5.2 provides summary worksheets of the noise levels for each hour as well as the minimum, maximum, L_1, L_2, L_5, L_8, L_{25}, L_{50}, L_{90}, L_{95}, and L_{99} percentile noise levels observed during the daytime and nighttime periods.

The background ambient noise levels in the Project study area are dominated by the transportation-related noise associated with the arterial roadway network and Chino Airport. This includes the auto and heavy truck activities on Archibald Avenue and aircraft activity from Chino Airport near the noise level measurement locations. The 24-hour existing noise level measurements are shown on Table 5-1.

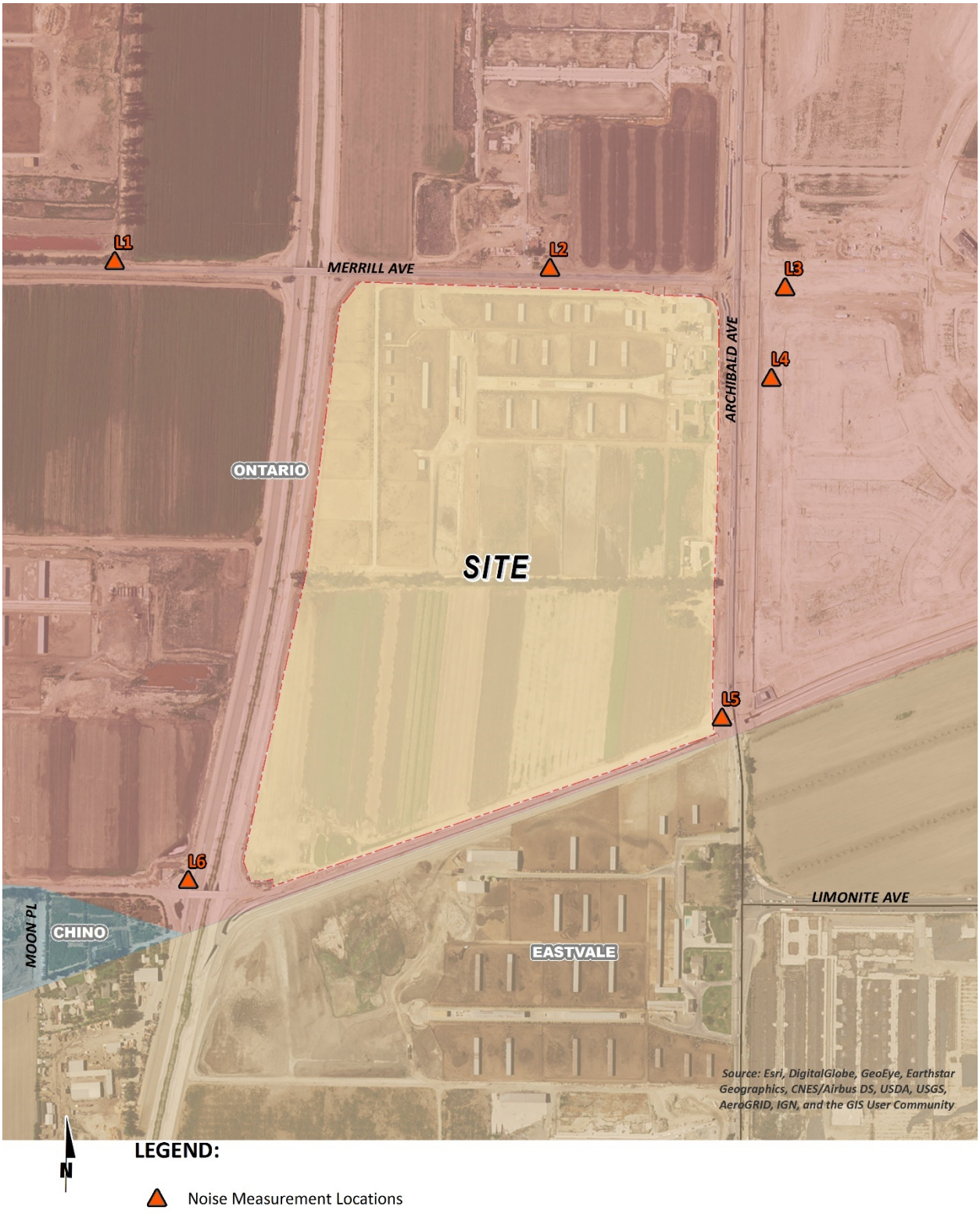
TABLE 5-1: 24-HOUR AMBIENT NOISE LEVEL MEASUREMENTS

Location[1]	Distance to Project Boundary (Feet)	Description	Energy Average Hourly Noise Level (dBA Leq)[2]		CNEL
			Daytime	Nighttime	
L1	1,000'	Located west of the Project site on Merrill Avenue adjacent to existing agricultural land use.	65.6	64.2	71.1
L2	90'	Located north of the Project site adjacent to an existing residential home on agricultural land use.	54.8	53.8	60.4
L3	305'	Located east of the Project site on Merrill Avenue adjacent to existing residential homes.	62.9	63.4	70.0
L4	230'	Located east of the Project site across Archibald Avenue adjacent to existing residential homes.	65.2	63.3	70.3
L5	40'	Located adjacent to the southeast Project site boundary on Archibald Avenue, north of existing agricultural land use.	65.8	64.4	71.4
L6	250'	Located southwest of the Project site on Remington Avenue adjacent to existing agricultural land use.	57.5	53.9	61.5

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

[2] Energy (logarithmic) average hourly levels. The long-term 24-hour measurement worksheets are included in Appendix 5.2. "Daytime" = 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



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 34 study area roadway segments, the distance from the centerline to adjacent land use based on the functional roadway classifications per the City of Ontario, Chino, and Eastvale General Plan Circulation Elements, and the posted vehicle speeds. The ADT volumes used in this study are presented on Table 6-2 were obtained from the *Colony Commerce Center East Specific Plan Traffic Impact Analysis* prepared by Urban Crossroads, Inc., for the following traffic scenarios: Existing, Opening Year Cumulative 2019, and Horizon Year 2040 conditions. (1) Table 6-3 provides the time of day (daytime, evening, and nighttime) vehicle splits.

TABLE 6-1: OFF-SITE ROADWAY PARAMETERS

ID	Roadway	Segment	Adjacent Planned Land Use[1]	Distance from Centerline to Nearest Adjacent Land Use (Feet)[2]	Posted Vehicle Speed (mph)
1	Euclid Av.	s/o Merrill Av.	Public	103'	55
2	Euclid Av.	s/o Kimball Av.	Office Commercial	103'	55
3	Euclid Av.	s/o Pine Av.	Urban Reserve	103'	55
4	Euclid Av.	e/o SR-71	Urban Reserve	103'	45
5	Archibald Av.	s/o SR-60 Ramps	Commercial	74'	50
6	Archibald Av.	s/o Walnut St.	Residential	74'	50
7	Archibald Av.	s/o Riverside Dr.	Residential	74'	55
8	Archibald Av.	s/o Chino Rd.	Residential	74'	55
9	Archibald Av.	s/o Schaefer Av.	Residential	74'	55
10	Archibald Av.	s/o Ontario Ranch Rd.	Residential	74'	55
11	Archibald Av.	s/o Eucalyptus Av.	Residential	74'	55
12	Archibald Av.	s/o Merrill Av.	Residential	74'	55
13	Archibald Av.	s/o Limonite Av.	Commercial	76'	50
14	Ontario Ranch Rd.	e/o Archibald Av,	Residential	80'	50
15	Ontario Ranch Rd.	e/o Hamner Av.	Industrial	80'	50
16	Merrill Av.	e/o Euclid Av.	Commercial	44'	50
17	Merrill Av.	e/o Grove Av.	Business Park	44'	50
18	Merrill Av.	e/o Flight Av.	Business Park	44'	50
19	Merrill Av.	e/o Hellman Av.	Industrial	44'	50
20	Merrill Av.	e/o Archibald Av,	Residential	44'	50
21	Bellgrave Av.	w/o Hamner Av.	Residential	44'	50
22	Kimball Av.	e/o Hellman Av.	Industrial	76'	50
23	Limonite	e/o Archibald Av.	Commercial	76'	45
24	Limonite	e/o Harrison Av.	Residential	76'	45
25	Limonite	e/o Sumner Av.	Residential	76'	45
26	Limonite	e/o Scholar Wy.	Residential	76'	45
27	Limonite	e/o Hamner Av.	Commercial	76'	45
28	SR-71	n/o Euclid Av.	Urban Reserve	140'	70
29	SR-71	s/o Euclid Av.	Urban Reserve	140'	70
30	I-15	n/o Cantu-Galleano Ranch Rd.	Business Park	140'	70
31	I-15	s/o Cantu-Galleano Ranch Rd.	Industrial	140'	70
32	I-15	s/o Limonite Av.	Commercial	140'	70
33	SR-60	w/o Archibald Av.	Commercial	130'	70
34	SR-60	e/o Archibald Av.	Residential	130'	70

[1] Sources: The Ontario Plan Exhibit LU-01, City of Chino General Plan Land Use Element Figure LU-2, and the City of Eastvale Land Use Map.
[2] Distance to adjacent land use is based upon the right-of-way distances for each functional roadway classification provided in the General Plan Circulation Elements.

TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES

ID	Roadway	Segment	Average Daily Traffic Volumes[1]					
			Existing (2017)		Opening Year Cumulative 2019		Horizon Year 2040	
			Without Project	With Project	Without Project	With Project	Without Project	With Project
1	Euclid Av.	s/o Merrill Av.	24,881	25,034	40,459	40,612	55,339	55,492
2	Euclid Av.	s/o Kimball Av.	20,461	20,614	31,828	31,981	38,277	38,447
3	Euclid Av.	s/o Pine Av.	32,895	33,160	45,837	46,102	58,717	58,955
4	Euclid Av.	e/o SR-71	34,531	34,796	47,537	47,802	56,050	56,288
5	Archibald Av.	s/o SR-60 Ramps	33,921	34,450	33,921	34,450	42,014	42,489
6	Archibald Av.	s/o Walnut St.	26,892	27,421	41,961	42,490	33,883	34,358
7	Archibald Av.	s/o Riverside Dr.	23,618	24,192	37,474	38,048	41,501	42,010
8	Archibald Av.	s/o Chino Rd.	20,131	20,727	34,983	35,579	40,241	40,767
9	Archibald Av.	s/o Schaefer Av.	20,126	20,722	35,302	35,898	37,657	38,200
10	Archibald Av.	s/o Ontario Ranch Rd.	24,009	25,296	42,937	44,224	44,907	45,907
11	Archibald Av.	s/o Eucalyptus Av.	23,656	24,943	42,860	44,147	45,932	46,949
12	Archibald Av.	s/o Merrill Av.	25,859	26,581	45,412	46,134	47,201	47,752
13	Archibald Av.	s/o Limonite Av.	24,997	25,512	43,128	43,643	45,662	45,831
14	Ontario Ranch Rd.	e/o Archibald Av,	7,693	8,361	18,122	18,790	26,926	27,384
15	Ontario Ranch Rd.	e/o Hamner Av.	17,771	18,349	37,965	38,543	41,761	42,219
16	Merrill Av.	e/o Euclid Av.	7,525	7,902	22,840	23,217	30,367	30,639
17	Merrill Av.	e/o Grove Av.	6,143	6,744	18,535	19,136	33,785	34,124
18	Merrill Av.	e/o Flight Av.	9,380	9,981	21,297	21,898	31,884	32,257
19	Merrill Av.	e/o Hellman Av.	9,380	9,981	20,251	20,852	30,068	30,560
20	Merrill Av.	e/o Archibald Av.	3,049	3,049	7,433	7,433	7,745	7,847
21	Bellgrave Av.	w/o Hamner Av.	6,723	6,723	9,087	9,087	10,904	11,006
22	Kimball Av.	e/o Hellman Av.	n/a	n/a	n/a	n/a	29,112	29,315
23	Limonite	e/o Archibald Av.	18,773	19,374	33,056	33,657	47,452	47,910
24	Limonite	e/o Harrison Av.	21,183	21,761	39,523	40,101	50,961	51,402
25	Limonite	e/o Sumner Av.	22,767	23,323	42,041	42,597	50,301	50,725
26	Limonite	e/o Scholar Wy.	26,195	26,706	44,892	45,403	50,503	50,910
27	Limonite	e/o Hamner Av.	32,173	32,572	50,620	51,019	54,674	55,013
28	SR-71	n/o Euclid Av.	72,830	72,830	76,350	76,350	131,390	131,390
29	SR-71	s/o Euclid Av.	76,410	76,675	85,570	85,835	145,930	146,168
30	I-15	n/o Cantu-Galleano Ranch Rd.	112,490	112,979	128,860	129,349	89,480	89,887
31	I-15	s/o Cantu-Galleano Ranch Rd.	102,050	102,050	114,960	114,960	86,590	86,590
32	I-15	s/o Limonite Av.	105,600	105,887	122,710	122,997	100,660	100,915
33	SR-60	w/o Archibald Av.	117,030	117,273	131,980	132,223	142,920	143,141
34	SR-60	e/o Archibald Av.	116,720	116,873	131,940	132,093	145,470	145,623

[1] Source: Colony Commerce Center East Specific Plan Traffic Impact Analysis, Urban Crossroads, Inc., October 2017.
"n/a" = Roadway segment does not have an ADT volume because it does not yet exist.

TABLE 6-3: TIME OF DAY VEHICLE SPLITS

Vehicle Type	Time of Day Splits[1]			Total of Time of Day Splits
	Daytime	Evening	Nighttime	
Autos	70.86%	12.94%	16.20%	100.00%
Medium Trucks	81.91%	5.06%	13.02%	100.00%
Heavy Trucks	72.05%	6.03%	21.92%	100.00%

[1] Based on existing 24-hour classification counts by vehicle type taken on 12/7/2016 at Archibald Avenue north of Riverside Drive (Colony Commerce Center East Traffic Impact Analysis, Urban Crossroads, Inc., October 2017).
"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.

According to the *Colony Commerce Center East Specific Plan Traffic Impact Analysis* prepared by Urban Crossroads, Inc., under year 2019 conditions, the Project is expected to generate a net total of approximately 3,003 trip-ends per day (actual vehicles) with 279 AM peak hour trips and 316 PM peak hour trips. Under Horizon Year 2040 conditions, the Project is expected to generate a net total of approximately 3,533 trip-ends per day (actual vehicles) with 343 AM peak hour trips and 385 PM peak hour trips. (1) The net Project trip generation includes 764 truck trip-ends per day from the proposed buildings within the Project site under Opening Year 2019 conditions, and 873 truck trip-ends per day under Horizon Year 2040 conditions. This noise study relies on the net Project trips to accurately account for the effect of individual truck trips on the study area roadway network.

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

The daily Project truck trip-ends were assigned to the individual off-site study area roadway segments based on the Project truck trip distribution percentages documented in the *Traffic Impact Analysis*. Using the Project truck trips in combination with the Project trip distribution, Urban Crossroads, Inc. calculated the number of additional Project truck trips and vehicle mix percentages for each of the study area roadway segments. Table 6-4 shows the traffic flow by vehicle type (vehicle mix) used for all without Project traffic scenarios, and Tables 6-5 to 6-7 show the vehicle mixes used for the with Project traffic scenarios.

TABLE 6-4: WITHOUT PROJECT CONDITIONS VEHICLE MIX

Classification	Total % Traffic Flow[1]			Total
	Autos	Medium Trucks	Heavy Trucks	
All Segments	91.41%	4.57%	4.02%	100.00%

[1] Based on existing 24-hour classification counts by vehicle type taken on 12/7/2016 at Archibald Avenue north of Riverside Drive (Colony Commerce Center East Traffic Impact Analysis, Urban Crossroads, Inc., October 2017). Total of vehicle mix percentage values rounded to the nearest one-hundredth.

TABLE 6-5: EXISTING WITH PROJECT CONDITIONS VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Euclid Av.	s/o Merrill Av.	90.85%	4.68%	4.47%	100.00%
2	Euclid Av.	s/o Kimball Av.	90.73%	4.70%	4.56%	100.00%
3	Euclid Av.	s/o Pine Av.	91.02%	4.64%	4.34%	100.00%
4	Euclid Av.	e/o SR-71	91.04%	4.63%	4.33%	100.00%
5	Archibald Av.	s/o SR-60 Ramps	90.66%	4.70%	4.64%	100.00%
6	Archibald Av.	s/o Walnut St.	90.46%	4.74%	4.80%	100.00%
7	Archibald Av.	s/o Riverside Dr.	90.35%	4.75%	4.90%	100.00%
8	Archibald Av.	s/o Chino Rd.	90.19%	4.77%	5.04%	100.00%
9	Archibald Av.	s/o Schaefer Av.	90.19%	4.77%	5.04%	100.00%
10	Archibald Av.	s/o Ontario Ranch Rd.	90.03%	4.75%	5.21%	100.00%
11	Archibald Av.	s/o Eucalyptus Av.	90.01%	4.76%	5.23%	100.00%
12	Archibald Av.	s/o Merrill Av.	90.78%	4.64%	4.57%	100.00%
13	Archibald Av.	s/o Limonite Av.	91.58%	4.48%	3.94%	100.00%
14	Ontario Ranch Rd.	e/o Archibald Av,	90.27%	4.62%	5.11%	100.00%
15	Ontario Ranch Rd.	e/o Hamner Av.	90.85%	4.61%	4.54%	100.00%
16	Merrill Av.	e/o Euclid Av.	89.88%	4.79%	5.32%	100.00%
17	Merrill Av.	e/o Grove Av.	89.91%	4.68%	5.41%	100.00%
18	Merrill Av.	e/o Flight Av.	90.40%	4.64%	4.96%	100.00%
19	Merrill Av.	e/o Hellman Av.	90.40%	4.64%	4.96%	100.00%
20	Merrill Av.	e/o Archibald Av.	91.41%	4.57%	4.02%	100.00%
21	Bellgrave Av.	w/o Hamner Av.	91.41%	4.57%	4.02%	100.00%
22	Kimball Av.	e/o Hellman Av.	91.41%	4.57%	4.02%	100.00%
23	Limonite	e/o Archibald Av.	90.89%	4.61%	4.51%	100.00%
24	Limonite	e/o Harrison Av.	90.94%	4.61%	4.46%	100.00%
25	Limonite	e/o Sumner Av.	90.96%	4.61%	4.43%	100.00%
26	Limonite	e/o Scholar Wy.	91.00%	4.61%	4.39%	100.00%
27	Limonite	e/o Hamner Av.	91.05%	4.62%	4.33%	100.00%
28	SR-71	n/o Euclid Av.	91.41%	4.57%	4.02%	100.00%
29	SR-71	s/o Euclid Av.	91.24%	4.60%	4.16%	100.00%
30	I-15	n/o Cantu-Galleano Ranch Rd.	91.31%	4.58%	4.11%	100.00%
31	I-15	s/o Cantu-Galleano Ranch Rd.	91.41%	4.57%	4.02%	100.00%
32	I-15	s/o Limonite Av.	91.29%	4.59%	4.12%	100.00%
33	SR-60	w/o Archibald Av.	91.30%	4.59%	4.11%	100.00%
34	SR-60	e/o Archibald Av.	91.29%	4.59%	4.12%	100.00%

[1] Source: Colony Commerce Center East Specific Plan Traffic Impact Analysis, Urban Crossroads, Inc., October 2017.

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

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

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Euclid Av.	s/o Merrill Av.	91.07%	4.64%	4.30%	100.00%
2	Euclid Av.	s/o Kimball Av.	90.97%	4.66%	4.37%	100.00%
3	Euclid Av.	s/o Pine Av.	91.13%	4.62%	4.25%	100.00%
4	Euclid Av.	e/o SR-71	91.14%	4.62%	4.25%	100.00%
5	Archibald Av.	s/o SR-60 Ramps	90.66%	4.70%	4.64%	100.00%
6	Archibald Av.	s/o Walnut St.	90.80%	4.68%	4.52%	100.00%
7	Archibald Av.	s/o Riverside Dr.	90.74%	4.68%	4.58%	100.00%
8	Archibald Av.	s/o Chino Rd.	90.70%	4.69%	4.61%	100.00%
9	Archibald Av.	s/o Schaefer Av.	90.70%	4.69%	4.61%	100.00%
10	Archibald Av.	s/o Ontario Ranch Rd.	90.62%	4.67%	4.70%	100.00%
11	Archibald Av.	s/o Eucalyptus Av.	90.62%	4.67%	4.70%	100.00%
12	Archibald Av.	s/o Merrill Av.	91.05%	4.61%	4.34%	100.00%
13	Archibald Av.	s/o Limonite Av.	91.51%	4.51%	3.97%	100.00%
14	Ontario Ranch Rd.	e/o Archibald Av,	90.90%	4.59%	4.51%	100.00%
15	Ontario Ranch Rd.	e/o Hamner Av.	91.14%	4.59%	4.27%	100.00%
16	Merrill Av.	e/o Euclid Av.	90.89%	4.64%	4.46%	100.00%
17	Merrill Av.	e/o Grove Av.	90.88%	4.61%	4.51%	100.00%
18	Merrill Av.	e/o Flight Av.	90.95%	4.60%	4.45%	100.00%
19	Merrill Av.	e/o Hellman Av.	90.92%	4.60%	4.47%	100.00%
20	Merrill Av.	e/o Archibald Av.	91.41%	4.57%	4.02%	100.00%
21	Bellgrave Av.	w/o Hamner Av.	91.41%	4.57%	4.02%	100.00%
22	Kimball Av.	e/o Hellman Av.	91.41%	4.57%	4.02%	100.00%
23	Limonite	e/o Archibald Av.	91.11%	4.59%	4.30%	100.00%
24	Limonite	e/o Harrison Av.	91.15%	4.59%	4.26%	100.00%
25	Limonite	e/o Sumner Av.	91.16%	4.59%	4.25%	100.00%
26	Limonite	e/o Scholar Wy.	91.17%	4.59%	4.24%	100.00%
27	Limonite	e/o Hamner Av.	91.18%	4.60%	4.22%	100.00%
28	SR-71	n/o Euclid Av.	91.41%	4.57%	4.02%	100.00%
29	SR-71	s/o Euclid Av.	91.26%	4.59%	4.15%	100.00%
30	I-15	n/o Cantu-Galleano Ranch Rd.	91.33%	4.58%	4.10%	100.00%
31	I-15	s/o Cantu-Galleano Ranch Rd.	91.41%	4.57%	4.02%	100.00%
32	I-15	s/o Limonite Av.	91.31%	4.59%	4.11%	100.00%
33	SR-60	w/o Archibald Av.	91.31%	4.59%	4.10%	100.00%
34	SR-60	e/o Archibald Av.	91.31%	4.59%	4.11%	100.00%

[1] Source: Colony Commerce Center East Specific Plan Traffic Impact Analysis, Urban Crossroads, Inc., October 2017.

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

TABLE 6-7: HORIZON YEAR 2040 WITH PROJECT CONDITIONS VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Euclid Av.	s/o Merrill Av.	91.16%	4.62%	4.22%	100.00%
2	Euclid Av.	s/o Kimball Av.	91.05%	4.64%	4.30%	100.00%
3	Euclid Av.	s/o Pine Av.	91.19%	4.61%	4.20%	100.00%
4	Euclid Av.	e/o SR-71	91.18%	4.61%	4.21%	100.00%
5	Archibald Av.	s/o SR-60 Ramps	90.79%	4.69%	4.52%	100.00%
6	Archibald Av.	s/o Walnut St.	90.64%	4.72%	4.64%	100.00%
7	Archibald Av.	s/o Riverside Dr.	90.79%	4.69%	4.52%	100.00%
8	Archibald Av.	s/o Chino Rd.	90.77%	4.69%	4.54%	100.00%
9	Archibald Av.	s/o Schaefer Av.	90.73%	4.70%	4.57%	100.00%
10	Archibald Av.	s/o Ontario Ranch Rd.	90.60%	4.71%	4.69%	100.00%
11	Archibald Av.	s/o Eucalyptus Av.	90.62%	4.70%	4.68%	100.00%
12	Archibald Av.	s/o Merrill Av.	91.03%	4.63%	4.34%	100.00%
13	Archibald Av.	s/o Limonite Av.	91.44%	4.55%	4.01%	100.00%
14	Ontario Ranch Rd.	e/o Archibald Av,	91.00%	4.63%	4.38%	100.00%
15	Ontario Ranch Rd.	e/o Hamner Av.	91.14%	4.61%	4.25%	100.00%
16	Merrill Av.	e/o Euclid Av.	90.99%	4.65%	4.36%	100.00%
17	Merrill Av.	e/o Grove Av.	91.05%	4.63%	4.32%	100.00%
18	Merrill Av.	e/o Flight Av.	91.04%	4.63%	4.33%	100.00%
19	Merrill Av.	e/o Hellman Av.	91.05%	4.62%	4.34%	100.00%
20	Merrill Av.	e/o Archibald Av.	91.52%	4.51%	3.97%	100.00%
21	Bellgrave Av.	w/o Hamner Av.	91.49%	4.53%	3.98%	100.00%
22	Kimball Av.	e/o Hellman Av.	91.47%	4.54%	3.99%	100.00%
23	Limonite	e/o Archibald Av.	91.17%	4.60%	4.22%	100.00%
24	Limonite	e/o Harrison Av.	91.19%	4.60%	4.21%	100.00%
25	Limonite	e/o Sumner Av.	91.18%	4.60%	4.22%	100.00%
26	Limonite	e/o Scholar Wy.	91.18%	4.60%	4.22%	100.00%
27	Limonite	e/o Hamner Av.	91.19%	4.61%	4.21%	100.00%
28	SR-71	n/o Euclid Av.	91.41%	4.57%	4.02%	100.00%
29	SR-71	s/o Euclid Av.	91.32%	4.59%	4.09%	100.00%
30	I-15	n/o Cantu-Galleano Ranch Rd.	91.28%	4.59%	4.13%	100.00%
31	I-15	s/o Cantu-Galleano Ranch Rd.	91.41%	4.57%	4.02%	100.00%
32	I-15	s/o Limonite Av.	91.28%	4.59%	4.13%	100.00%
33	SR-60	w/o Archibald Av.	91.32%	4.59%	4.10%	100.00%
34	SR-60	e/o Archibald Av.	91.31%	4.59%	4.10%	100.00%

[1] Source: Colony Commerce Center East Specific Plan Traffic Impact Analysis, Urban Crossroads, Inc., October 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 6-8. 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 6-8: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

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

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

7 OFF-SITE TRANSPORTATION NOISE IMPACTS

To assess the off-site transportation CNEL noise level impacts associated with the proposed Project, noise contours were developed based on the *Colony Commerce Center East Specific Plan Traffic Impact Analysis*. (1) 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 / With Project: This scenario refers to the existing present-day noise conditions, without and with the proposed Project.
- Opening Year 2019 Cumulative Without / With Project: This scenario 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*.
- Horizon Year 2040 Without / With Project: This scenario refers to the background noise conditions at future Year 2040 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*, in addition to the trips generated by PA3 of the Colony Commerce Center East Specific Plan.

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 4-1, a 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 Ontario Plan Safety Section on Noise Hazards (Table LU-7) 70 dBA CNEL noise criteria and the Project creates a *readily perceptible* 5 dBA CNEL or greater Project-related noise level increase; or
    - are greater than The Ontario Plan Safety Section on Noise Hazards (Table LU-7) 70 dBA CNEL noise criteria and the Project creates a *barely perceptible* 3 dBA CNEL 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 7-6 present a summary of the exterior traffic noise levels, without barrier attenuation, for the 34 study area roadway segments analyzed from the without Project to the with Project conditions in each of the three timeframes: Existing, Opening Year Cumulative 2019, and Horizon Year 2040 conditions. Appendix 7.1 includes a summary of the traffic noise level contours for each of the six traffic scenarios.

TABLE 7-1: EXISTING WITHOUT PROJECT CONDITIONS NOISE CONTOURS

ID	Road	Segment	Adjacent Planned Land Use[1]	CNEL at Nearest Adjacent Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Euclid Av.	s/o Merrill Av.	Public	74.5	206	444	956
2	Euclid Av.	s/o Kimball Av.	Office Commercial	73.7	181	390	839
3	Euclid Av.	s/o Pine Av.	Urban Reserve	75.7	248	535	1152
4	Euclid Av.	e/o SR-71	Urban Reserve	74.2	195	421	906
5	Archibald Av.	s/o SR-60 Ramps	Commercial	76.1	190	409	880
6	Archibald Av.	s/o Walnut St.	Residential	75.1	162	350	754
7	Archibald Av.	s/o Riverside Dr.	Residential	75.4	170	366	788
8	Archibald Av.	s/o Chino Rd.	Residential	74.7	153	329	708
9	Archibald Av.	s/o Schaefer Av.	Residential	74.7	153	329	708
10	Archibald Av.	s/o Ontario Ranch Rd.	Residential	75.5	172	370	797
11	Archibald Av.	s/o Eucalyptus Av.	Residential	75.4	170	366	789
12	Archibald Av.	s/o Merrill Av.	Residential	75.8	180	389	837
13	Archibald Av.	s/o Limonite Av.	Commercial	74.0	140	302	651
14	Ontario Ranch Rd.	e/o Archibald Av,	Residential	69.9	RW	170	366
15	Ontario Ranch Rd.	e/o Hamner Av.	Industrial	73.5	138	297	640
16	Merrill Av.	e/o Euclid Av.	Commercial	71.9	59	127	274
17	Merrill Av.	e/o Grove Av.	Business Park	71.0	52	111	240
18	Merrill Av.	e/o Flight Av.	Business Park	72.9	68	148	318
19	Merrill Av.	e/o Hellman Av.	Industrial	72.9	68	148	318
20	Merrill Av.	e/o Archibald Av.	Residential	68.0	RW	70	150
21	Bellgrave Av.	w/o Hamner Av.	Residential	71.4	55	118	255
22	Kimball Av.	e/o Hellman Av.	Industrial	n/a	n/a	n/a	n/a
23	Limonite	e/o Archibald Av.	Commercial	71.8	101	217	467
24	Limonite	e/o Harrison Av.	Residential	72.4	109	235	506
25	Limonite	e/o Sumner Av.	Residential	72.7	114	247	531
26	Limonite	e/o Scholar Wy.	Residential	73.3	126	271	583
27	Limonite	e/o Hamner Av.	Commercial	74.2	144	310	669
28	SR-71	n/o Euclid Av.	Urban Reserve	77.5	445	959	2066
29	SR-71	s/o Euclid Av.	Urban Reserve	77.7	460	990	2133
30	I-15	n/o Cantu-Galleano Ranch Rd.	Business Park	79.4	595	1281	2761
31	I-15	s/o Cantu-Galleano Ranch Rd.	Industrial	79.0	557	1201	2587
32	I-15	s/o Limonite Av.	Commercial	79.1	570	1228	2647
33	SR-60	w/o Archibald Av.	Commercial	80.2	624	1345	2898
34	SR-60	e/o Archibald Av.	Residential	80.2	623	1343	2893

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

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

"RW" = Location of the respective noise contour falls within the right-of-way of the road; "n/a" = Roadway segment does not exist in the given scenario.

TABLE 7-2: EXISTING WITH PROJECT CONDITIONS NOISE CONTOURS

ID	Road	Segment	Adjacent Planned Land Use[1]	CNEL at Nearest Adjacent Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Euclid Av.	s/o Merrill Av.	Public	74.8	215	462	996
2	Euclid Av.	s/o Kimball Av.	Office Commercial	74.0	190	409	882
3	Euclid Av.	s/o Pine Av.	Urban Reserve	75.9	256	552	1189
4	Euclid Av.	e/o SR-71	Urban Reserve	74.4	202	435	937
5	Archibald Av.	s/o SR-60 Ramps	Commercial	76.5	202	435	938
6	Archibald Av.	s/o Walnut St.	Residential	75.6	176	379	816
7	Archibald Av.	s/o Riverside Dr.	Residential	76.0	185	399	859
8	Archibald Av.	s/o Chino Rd.	Residential	75.4	169	363	783
9	Archibald Av.	s/o Schaefer Av.	Residential	75.4	169	363	783
10	Archibald Av.	s/o Ontario Ranch Rd.	Residential	76.3	195	420	904
11	Archibald Av.	s/o Eucalyptus Av.	Residential	76.3	193	416	897
12	Archibald Av.	s/o Merrill Av.	Residential	76.2	192	414	891
13	Archibald Av.	s/o Limonite Av.	Commercial	74.0	141	304	654
14	Ontario Ranch Rd.	e/o Archibald Av,	Residential	70.8	91	196	422
15	Ontario Ranch Rd.	e/o Hamner Av.	Industrial	74.0	147	317	683
16	Merrill Av.	e/o Euclid Av.	Commercial	72.8	68	146	315
17	Merrill Av.	e/o Grove Av.	Business Park	72.2	61	132	285
18	Merrill Av.	e/o Flight Av.	Business Park	73.6	77	166	358
19	Merrill Av.	e/o Hellman Av.	Industrial	73.6	77	166	358
20	Merrill Av.	e/o Archibald Av.	Residential	68.0	RW	70	150
21	Bellgrave Av.	w/o Hamner Av.	Residential	71.4	55	118	255
22	Kimball Av.	e/o Hellman Av.	Industrial	n/a	n/a	n/a	n/a
23	Limonite	e/o Archibald Av.	Commercial	72.2	107	231	498
24	Limonite	e/o Harrison Av.	Residential	72.7	115	249	536
25	Limonite	e/o Sumner Av.	Residential	73.0	121	260	560
26	Limonite	e/o Scholar Wy.	Residential	73.6	132	283	610
27	Limonite	e/o Hamner Av.	Commercial	74.4	149	322	694
28	SR-71	n/o Euclid Av.	Urban Reserve	77.5	445	959	2066
29	SR-71	s/o Euclid Av.	Urban Reserve	77.8	465	1002	2159
30	I-15	n/o Cantu-Galleano Ranch Rd.	Business Park	79.5	600	1293	2785
31	I-15	s/o Cantu-Galleano Ranch Rd.	Industrial	79.0	557	1201	2587
32	I-15	s/o Limonite Av.	Commercial	79.2	575	1240	2670
33	SR-60	w/o Archibald Av.	Commercial	80.3	629	1356	2922
34	SR-60	e/o Archibald Av.	Residential	80.3	628	1353	2916

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

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

"RW" = Location of the respective noise contour falls within the right-of-way of the road; "n/a" = Roadway segment does not exist in the given scenario.

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

ID	Road	Segment	Adjacent Planned Land Use[1]	CNEL at Nearest Adjacent Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Euclid Av.	s/o Merrill Av.	Public	76.6	285	614	1322
2	Euclid Av.	s/o Kimball Av.	Office Commercial	75.6	243	523	1127
3	Euclid Av.	s/o Pine Av.	Urban Reserve	77.2	310	667	1437
4	Euclid Av.	e/o SR-71	Urban Reserve	75.6	242	521	1121
5	Archibald Av.	s/o SR-60 Ramps	Commercial	76.1	190	409	880
6	Archibald Av.	s/o Walnut St.	Residential	77.1	219	471	1015
7	Archibald Av.	s/o Riverside Dr.	Residential	77.4	231	498	1072
8	Archibald Av.	s/o Chino Rd.	Residential	77.1	221	475	1024
9	Archibald Av.	s/o Schaefer Av.	Residential	77.2	222	478	1030
10	Archibald Av.	s/o Ontario Ranch Rd.	Residential	78.0	253	545	1174
11	Archibald Av.	s/o Eucalyptus Av.	Residential	78.0	253	544	1173
12	Archibald Av.	s/o Merrill Av.	Residential	78.2	263	566	1219
13	Archibald Av.	s/o Limonite Av.	Commercial	76.4	202	435	937
14	Ontario Ranch Rd.	e/o Archibald Av,	Residential	73.6	140	301	648
15	Ontario Ranch Rd.	e/o Hamner Av.	Industrial	76.8	229	493	1062
16	Merrill Av.	e/o Euclid Av.	Commercial	76.7	124	267	575
17	Merrill Av.	e/o Grove Av.	Business Park	75.8	108	232	501
18	Merrill Av.	e/o Flight Av.	Business Park	76.4	118	255	549
19	Merrill Av.	e/o Hellman Av.	Industrial	76.2	114	246	531
20	Merrill Av.	e/o Archibald Av.	Residential	71.9	59	126	272
21	Bellgrave Av.	w/o Hamner Av.	Residential	72.7	67	144	311
22	Kimball Av.	e/o Hellman Av.	Industrial	n/a	n/a	n/a	n/a
23	Limonite	e/o Archibald Av.	Commercial	74.3	147	316	681
24	Limonite	e/o Harrison Av.	Residential	75.1	165	356	767
25	Limonite	e/o Sumner Av.	Residential	75.3	172	371	799
26	Limonite	e/o Scholar Wy.	Residential	75.6	180	388	835
27	Limonite	e/o Hamner Av.	Commercial	76.1	195	420	905
28	SR-71	n/o Euclid Av.	Urban Reserve	77.7	459	990	2132
29	SR-71	s/o Euclid Av.	Urban Reserve	78.2	496	1068	2300
30	I-15	n/o Cantu-Galleano Ranch Rd.	Business Park	80.0	651	1403	3022
31	I-15	s/o Cantu-Galleano Ranch Rd.	Industrial	79.5	603	1300	2801
32	I-15	s/o Limonite Av.	Commercial	79.8	630	1358	2925
33	SR-60	w/o Archibald Av.	Commercial	80.7	677	1458	3140
34	SR-60	e/o Archibald Av.	Residential	80.7	676	1457	3140

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

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

"RW" = Location of the respective noise contour falls within the right-of-way of the road; "n/a" = Roadway segment does not exist in the given scenario.

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

ID	Road	Segment	Adjacent Planned Land Use[1]	CNEL at Nearest Adjacent Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Euclid Av.	s/o Merrill Av.	Public	76.8	292	630	1356
2	Euclid Av.	s/o Kimball Av.	Office Commercial	75.8	251	540	1164
3	Euclid Av.	s/o Pine Av.	Urban Reserve	77.3	317	683	1471
4	Euclid Av.	e/o SR-71	Urban Reserve	75.7	248	533	1149
5	Archibald Av.	s/o SR-60 Ramps	Commercial	76.5	202	435	938
6	Archibald Av.	s/o Walnut St.	Residential	77.4	230	496	1068
7	Archibald Av.	s/o Riverside Dr.	Residential	77.8	244	526	1133
8	Archibald Av.	s/o Chino Rd.	Residential	77.5	234	504	1087
9	Archibald Av.	s/o Schaefer Av.	Residential	77.5	235	507	1093
10	Archibald Av.	s/o Ontario Ranch Rd.	Residential	78.5	272	587	1264
11	Archibald Av.	s/o Eucalyptus Av.	Residential	78.5	272	586	1263
12	Archibald Av.	s/o Merrill Av.	Residential	78.5	272	587	1264
13	Archibald Av.	s/o Limonite Av.	Commercial	76.4	202	436	940
14	Ontario Ranch Rd.	e/o Archibald Av,	Residential	74.1	149	321	692
15	Ontario Ranch Rd.	e/o Hamner Av.	Industrial	77.0	236	508	1095
16	Merrill Av.	e/o Euclid Av.	Commercial	77.1	130	280	604
17	Merrill Av.	e/o Grove Av.	Business Park	76.2	115	247	533
18	Merrill Av.	e/o Flight Av.	Business Park	76.8	125	269	580
19	Merrill Av.	e/o Hellman Av.	Industrial	76.6	121	261	562
20	Merrill Av.	e/o Archibald Av.	Residential	71.9	59	126	272
21	Bellgrave Av.	w/o Hamner Av.	Residential	72.7	67	144	311
22	Kimball Av.	e/o Hellman Av.	Industrial	n/a	n/a	n/a	n/a
23	Limonite	e/o Archibald Av.	Commercial	74.5	152	328	707
24	Limonite	e/o Harrison Av.	Residential	75.3	170	367	791
25	Limonite	e/o Sumner Av.	Residential	75.5	177	382	823
26	Limonite	e/o Scholar Wy.	Residential	75.8	185	398	858
27	Limonite	e/o Hamner Av.	Commercial	76.3	200	430	926
28	SR-71	n/o Euclid Av.	Urban Reserve	77.7	459	990	2132
29	SR-71	s/o Euclid Av.	Urban Reserve	78.3	501	1080	2326
30	I-15	n/o Cantu-Galleano Ranch Rd.	Business Park	80.1	656	1414	3046
31	I-15	s/o Cantu-Galleano Ranch Rd.	Industrial	79.5	603	1300	2801
32	I-15	s/o Limonite Av.	Commercial	79.9	635	1368	2948
33	SR-60	w/o Archibald Av.	Commercial	80.8	681	1468	3163
34	SR-60	e/o Archibald Av.	Residential	80.8	681	1467	3161

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

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

"RW" = Location of the respective noise contour falls within the right-of-way of the road; "n/a" = Roadway segment does not exist in the given scenario.

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

ID	Road	Segment	Adjacent Planned Land Use[1]	CNEL at Nearest Adjacent Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Euclid Av.	s/o Merrill Av.	Public	78.0	351	756	1629
2	Euclid Av.	s/o Kimball Av.	Office Commercial	76.4	275	592	1274
3	Euclid Av.	s/o Pine Av.	Urban Reserve	78.2	365	787	1695
4	Euclid Av.	e/o SR-71	Urban Reserve	76.3	270	581	1252
5	Archibald Av.	s/o SR-60 Ramps	Commercial	77.1	219	471	1015
6	Archibald Av.	s/o Walnut St.	Residential	76.1	190	408	880
7	Archibald Av.	s/o Riverside Dr.	Residential	77.9	247	533	1148
8	Archibald Av.	s/o Chino Rd.	Residential	77.7	242	522	1124
9	Archibald Av.	s/o Schaefer Av.	Residential	77.4	232	499	1076
10	Archibald Av.	s/o Ontario Ranch Rd.	Residential	78.2	261	561	1210
11	Archibald Av.	s/o Eucalyptus Av.	Residential	78.3	265	570	1228
12	Archibald Av.	s/o Merrill Av.	Residential	78.4	269	580	1250
13	Archibald Av.	s/o Limonite Av.	Commercial	76.6	210	452	973
14	Ontario Ranch Rd.	e/o Archibald Av,	Residential	75.4	182	392	844
15	Ontario Ranch Rd.	e/o Hamner Av.	Industrial	77.3	244	525	1131
16	Merrill Av.	e/o Euclid Av.	Commercial	78.0	150	323	696
17	Merrill Av.	e/o Grove Av.	Business Park	78.4	161	347	747
18	Merrill Av.	e/o Flight Av.	Business Park	78.2	155	334	719
19	Merrill Av.	e/o Hellman Av.	Industrial	77.9	149	321	691
20	Merrill Av.	e/o Archibald Av.	Residential	72.1	60	130	280
21	Bellgrave Av.	w/o Hamner Av.	Residential	73.5	76	163	351
22	Kimball Av.	e/o Hellman Av.	Industrial	74.7	155	335	721
23	Limonite	e/o Archibald Av.	Commercial	75.9	187	402	867
24	Limonite	e/o Harrison Av.	Residential	76.2	196	422	909
25	Limonite	e/o Sumner Av.	Residential	76.1	194	418	901
26	Limonite	e/o Scholar Wy.	Residential	76.1	195	419	903
27	Limonite	e/o Hamner Av.	Commercial	76.5	205	442	952
28	SR-71	n/o Euclid Av.	Urban Reserve	80.1	660	1421	3062
29	SR-71	s/o Euclid Av.	Urban Reserve	80.6	707	1524	3284
30	I-15	n/o Cantu-Galleano Ranch Rd.	Business Park	78.4	511	1100	2370
31	I-15	s/o Cantu-Galleano Ranch Rd.	Industrial	78.3	500	1076	2319
32	I-15	s/o Limonite Av.	Commercial	78.9	552	1190	2563
33	SR-60	w/o Archibald Av.	Commercial	81.1	713	1537	3311
34	SR-60	e/o Archibald Av.	Residential	81.2	722	1555	3351

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

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

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

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

ID	Road	Segment	Adjacent Planned Land Use[1]	CNEL at Nearest Adjacent Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Euclid Av.	s/o Merrill Av.	Public	78.1	358	770	1660
2	Euclid Av.	s/o Kimball Av.	Office Commercial	76.6	282	608	1309
3	Euclid Av.	s/o Pine Av.	Urban Reserve	78.4	372	801	1726
4	Euclid Av.	e/o SR-71	Urban Reserve	76.4	275	593	1278
5	Archibald Av.	s/o SR-60 Ramps	Commercial	77.4	230	496	1068
6	Archibald Av.	s/o Walnut St.	Residential	76.5	202	435	937
7	Archibald Av.	s/o Riverside Dr.	Residential	78.2	260	560	1206
8	Archibald Av.	s/o Chino Rd.	Residential	78.1	255	549	1183
9	Archibald Av.	s/o Schaefer Av.	Residential	77.8	245	527	1136
10	Archibald Av.	s/o Ontario Ranch Rd.	Residential	78.6	279	601	1296
11	Archibald Av.	s/o Eucalyptus Av.	Residential	78.7	283	610	1313
12	Archibald Av.	s/o Merrill Av.	Residential	78.6	279	600	1293
13	Archibald Av.	s/o Limonite Av.	Commercial	76.6	210	452	974
14	Ontario Ranch Rd.	e/o Archibald Av,	Residential	75.6	190	409	880
15	Ontario Ranch Rd.	e/o Hamner Av.	Industrial	77.4	250	540	1163
16	Merrill Av.	e/o Euclid Av.	Commercial	78.2	155	335	721
17	Merrill Av.	e/o Grove Av.	Business Park	78.7	166	358	772
18	Merrill Av.	e/o Flight Av.	Business Park	78.4	160	345	744
19	Merrill Av.	e/o Hellman Av.	Industrial	78.2	155	333	718
20	Merrill Av.	e/o Archibald Av.	Residential	72.1	60	130	281
21	Bellgrave Av.	w/o Hamner Av.	Residential	73.5	76	163	352
22	Kimball Av.	e/o Hellman Av.	Industrial	74.7	156	335	722
23	Limonite	e/o Archibald Av.	Commercial	76.0	191	412	889
24	Limonite	e/o Harrison Av.	Residential	76.3	200	432	930
25	Limonite	e/o Sumner Av.	Residential	76.3	199	428	922
26	Limonite	e/o Scholar Wy.	Residential	76.3	199	429	925
27	Limonite	e/o Hamner Av.	Commercial	76.6	210	452	973
28	SR-71	n/o Euclid Av.	Urban Reserve	80.1	660	1421	3062
29	SR-71	s/o Euclid Av.	Urban Reserve	80.6	712	1534	3304
30	I-15	n/o Cantu-Galleano Ranch Rd.	Business Park	78.5	516	1112	2396
31	I-15	s/o Cantu-Galleano Ranch Rd.	Industrial	78.3	500	1076	2319
32	I-15	s/o Limonite Av.	Commercial	79.0	557	1201	2587
33	SR-60	w/o Archibald Av.	Commercial	81.1	718	1547	3333
34	SR-60	e/o Archibald Av.	Residential	81.2	726	1565	3372

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

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

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

7.2 EXISTING CONDITION PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-1 presents the Existing without Project conditions CNEL noise levels. The Exiting without Project exterior noise levels are expected to range from 68.0 to 80.2 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-2 shows the Existing with Project conditions will range from 68.0 to 80.3 dBA CNEL. As shown on Table 7-7 the Project will generate noise level increases of up to 1.2 dBA CNEL on the study area roadway segments. Based on the significance criteria in Section 4 for noise-sensitive land uses, experiencing Project-related traffic noise level increases of up to 1.2 dBA CNEL, the Project-related increases represent a *less than significant* impact under Existing plus Project conditions.

7.3 OPENING YEAR 2019 PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-8 presents a comparison of the Opening Year 2019 without and with Project conditions CNEL noise levels. Table 7-3 shows that the exterior noise levels without accounting for any noise attenuation features are expected to range from 71.9 to 80.7 dBA CNEL without the Project. Table 7-4 presents the Opening Year 2019 with Project conditions noise level contours that are expected to range from 71.9 to 80.8 dBA CNEL. Based on the significance criteria in Section 4 for noise-sensitive land uses, experiencing Project-related traffic noise level increases of up to 0.5 dBA CNEL, the Project-related increases represent a *less than significant* impact under Opening Year 2019 with Project conditions.

7.4 HORIZON YEAR 2040 PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-9 presents a comparison of the Horizon Year 2040 without and with Project conditions (that include operation of PA-1, PA-2, and PA-3) CNEL noise levels. Table 7-5 shows that the exterior noise levels without accounting for any noise attenuation features are expected to range from 72.1 to 81.2 dBA CNEL without the Project. Table 7-6 presents the Horizon Year 2040 with Project conditions noise level contours that are expected to range from 72.1 to 81.2 dBA CNEL. Based on the significance criteria in Section 4 for noise-sensitive land uses, which will experience Project-related traffic noise level increases of up to 0.4 dBA CNEL, the Project-related increases represent a *less than significant* impact under Horizon Year 2040 conditions, with operation of all three PAs.

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

ID	Road	Segment	CNEL at Adjacent Land Use (dBA)[1]			Noise-Sensitive Land Use?	Threshold Exceeded?[2]
			No Project	With Project	Project Addition		
1	Euclid Av.	s/o Merrill Av.	74.5	74.8	0.3	No	No
2	Euclid Av.	s/o Kimball Av.	73.7	74.0	0.3	No	No
3	Euclid Av.	s/o Pine Av.	75.7	75.9	0.2	No	No
4	Euclid Av.	e/o SR-71	74.2	74.4	0.2	No	No
5	Archibald Av.	s/o SR-60 Ramps	76.1	76.5	0.4	No	No
6	Archibald Av.	s/o Walnut St.	75.1	75.6	0.5	Yes	No
7	Archibald Av.	s/o Riverside Dr.	75.4	76.0	0.6	Yes	No
8	Archibald Av.	s/o Chino Rd.	74.7	75.4	0.7	Yes	No
9	Archibald Av.	s/o Schaefer Av.	74.7	75.4	0.7	Yes	No
10	Archibald Av.	s/o Ontario Ranch Rd.	75.5	76.3	0.8	Yes	No
11	Archibald Av.	s/o Eucalyptus Av.	75.4	76.3	0.9	Yes	No
12	Archibald Av.	s/o Merrill Av.	75.8	76.2	0.4	Yes	No
13	Archibald Av.	s/o Limonite Av.	74.0	74.0	0.0	No	No
14	Ontario Ranch Rd.	e/o Archibald Av,	69.9	70.8	0.9	Yes	No
15	Ontario Ranch Rd.	e/o Hamner Av.	73.5	74.0	0.5	No	No
16	Merrill Av.	e/o Euclid Av.	71.9	72.8	0.9	No	No
17	Merrill Av.	e/o Grove Av.	71.0	72.2	1.2	No	No
18	Merrill Av.	e/o Flight Av.	72.9	73.6	0.7	No	No
19	Merrill Av.	e/o Hellman Av.	72.9	73.6	0.7	No	No
20	Merrill Av.	e/o Archibald Av.	68.0	68.0	0.0	Yes	No
21	Bellgrave Av.	w/o Hamner Av.	71.4	71.4	0.0	Yes	No
22	Kimball Av.	e/o Hellman Av.	n/a	n/a	n/a	n/a	n/a
23	Limonite	e/o Archibald Av.	71.8	72.2	0.4	No	No
24	Limonite	e/o Harrison Av.	72.4	72.7	0.3	Yes	No
25	Limonite	e/o Sumner Av.	72.7	73.0	0.3	Yes	No
26	Limonite	e/o Scholar Wy.	73.3	73.6	0.3	Yes	No
27	Limonite	e/o Hamner Av.	74.2	74.4	0.2	No	No
28	SR-71	n/o Euclid Av.	77.5	77.5	0.0	Yes	No
29	SR-71	s/o Euclid Av.	77.7	77.8	0.1	Yes	No
30	I-15	n/o Cantu-Galleano Ranch Rd.	79.4	79.5	0.1	No	No
31	I-15	s/o Cantu-Galleano Ranch Rd.	79.0	79.0	0.0	No	No
32	I-15	s/o Limonite Av.	79.1	79.2	0.1	No	No
33	SR-60	w/o Archibald Av.	80.2	80.3	0.1	No	No
34	SR-60	e/o Archibald Av.	80.2	80.3	0.1	Yes	No

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

[2] Significance Criteria (Section 4).

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

TABLE 7-8: OPENING YEAR OFF-SITE PROJECT-RELATED TRAFFIC NOISE IMPACTS

ID	Road	Segment	CNEL at Adjacent Land Use (dBA)[1]			Noise-Sensitive Land Use?	Threshold Exceeded?[2]
			No Project	With Project	Project Addition		
1	Euclid Av.	s/o Merrill Av.	76.6	76.8	0.2	No	No
2	Euclid Av.	s/o Kimball Av.	75.6	75.8	0.2	No	No
3	Euclid Av.	s/o Pine Av.	77.2	77.3	0.1	No	No
4	Euclid Av.	e/o SR-71	75.6	75.7	0.1	No	No
5	Archibald Av.	s/o SR-60 Ramps	76.1	76.5	0.4	No	No
6	Archibald Av.	s/o Walnut St.	77.1	77.4	0.3	Yes	No
7	Archibald Av.	s/o Riverside Dr.	77.4	77.8	0.4	Yes	No
8	Archibald Av.	s/o Chino Rd.	77.1	77.5	0.4	Yes	No
9	Archibald Av.	s/o Schaefer Av.	77.2	77.5	0.3	Yes	No
10	Archibald Av.	s/o Ontario Ranch Rd.	78.0	78.5	0.5	Yes	No
11	Archibald Av.	s/o Eucalyptus Av.	78.0	78.5	0.5	Yes	No
12	Archibald Av.	s/o Merrill Av.	78.2	78.5	0.3	Yes	No
13	Archibald Av.	s/o Limonite Av.	76.4	76.4	0.0	No	No
14	Ontario Ranch Rd.	e/o Archibald Av,	73.6	74.1	0.5	Yes	No
15	Ontario Ranch Rd.	e/o Hamner Av.	76.8	77.0	0.2	No	No
16	Merrill Av.	e/o Euclid Av.	76.7	77.1	0.4	No	No
17	Merrill Av.	e/o Grove Av.	75.8	76.2	0.4	No	No
18	Merrill Av.	e/o Flight Av.	76.4	76.8	0.4	No	No
19	Merrill Av.	e/o Hellman Av.	76.2	76.6	0.4	No	No
20	Merrill Av.	e/o Archibald Av.	71.9	71.9	0.0	Yes	No
21	Bellgrave Av.	w/o Hamner Av.	72.7	72.7	0.0	Yes	No
22	Kimball Av.	e/o Hellman Av.	n/a	n/a	n/a	n/a	n/a
23	Limonite	e/o Archibald Av.	74.3	74.5	0.2	No	No
24	Limonite	e/o Harrison Av.	75.1	75.3	0.2	Yes	No
25	Limonite	e/o Sumner Av.	75.3	75.5	0.2	Yes	No
26	Limonite	e/o Scholar Wy.	75.6	75.8	0.2	Yes	No
27	Limonite	e/o Hamner Av.	76.1	76.3	0.2	No	No
28	SR-71	n/o Euclid Av.	77.7	77.7	0.0	Yes	No
29	SR-71	s/o Euclid Av.	78.2	78.3	0.1	Yes	No
30	I-15	n/o Cantu-Galleano Ranch Rd.	80.0	80.1	0.1	No	No
31	I-15	s/o Cantu-Galleano Ranch Rd.	79.5	79.5	0.0	No	No
32	I-15	s/o Limonite Av.	79.8	79.9	0.1	No	No
33	SR-60	w/o Archibald Av.	80.7	80.8	0.1	No	No
34	SR-60	e/o Archibald Av.	80.7	80.8	0.1	Yes	No

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

[2] Significance Criteria (Section 4).

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

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

ID	Road	Segment	CNEL at Adjacent Land Use (dBA)[1]			Noise-Sensitive Land Use?	Threshold Exceeded?[2]
			No Project	With Project	Project Addition		
1	Euclid Av.	s/o Merrill Av.	78.0	78.1	0.1	No	No
2	Euclid Av.	s/o Kimball Av.	76.4	76.6	0.2	No	No
3	Euclid Av.	s/o Pine Av.	78.2	78.4	0.2	No	No
4	Euclid Av.	e/o SR-71	76.3	76.4	0.1	No	No
5	Archibald Av.	s/o SR-60 Ramps	77.1	77.4	0.3	No	No
6	Archibald Av.	s/o Walnut St.	76.1	76.5	0.4	Yes	No
7	Archibald Av.	s/o Riverside Dr.	77.9	78.2	0.3	Yes	No
8	Archibald Av.	s/o Chino Rd.	77.7	78.1	0.4	Yes	No
9	Archibald Av.	s/o Schaefer Av.	77.4	77.8	0.4	Yes	No
10	Archibald Av.	s/o Ontario Ranch Rd.	78.2	78.6	0.4	Yes	No
11	Archibald Av.	s/o Eucalyptus Av.	78.3	78.7	0.4	Yes	No
12	Archibald Av.	s/o Merrill Av.	78.4	78.6	0.2	Yes	No
13	Archibald Av.	s/o Limonite Av.	76.6	76.6	0.0	No	No
14	Ontario Ranch Rd.	e/o Archibald Av,	75.4	75.6	0.2	Yes	No
15	Ontario Ranch Rd.	e/o Hamner Av.	77.3	77.4	0.1	No	No
16	Merrill Av.	e/o Euclid Av.	78.0	78.2	0.2	No	No
17	Merrill Av.	e/o Grove Av.	78.4	78.7	0.3	No	No
18	Merrill Av.	e/o Flight Av.	78.2	78.4	0.2	No	No
19	Merrill Av.	e/o Hellman Av.	77.9	78.2	0.3	No	No
20	Merrill Av.	e/o Archibald Av.	72.1	72.1	0.0	Yes	No
21	Bellgrave Av.	w/o Hamner Av.	73.5	73.5	0.0	Yes	No
22	Kimball Av.	e/o Hellman Av.	74.7	74.7	0.0	No	No
23	Limonite	e/o Archibald Av.	75.9	76.0	0.1	No	No
24	Limonite	e/o Harrison Av.	76.2	76.3	0.1	Yes	No
25	Limonite	e/o Sumner Av.	76.1	76.3	0.2	Yes	No
26	Limonite	e/o Scholar Wy.	76.1	76.3	0.2	Yes	No
27	Limonite	e/o Hamner Av.	76.5	76.6	0.1	No	No
28	SR-71	n/o Euclid Av.	80.1	80.1	0.0	Yes	No
29	SR-71	s/o Euclid Av.	80.6	80.6	0.0	Yes	No
30	I-15	n/o Cantu-Galleano Ranch Rd.	78.4	78.5	0.1	No	No
31	I-15	s/o Cantu-Galleano Ranch Rd.	78.3	78.3	0.0	No	No
32	I-15	s/o Limonite Av.	78.9	79.0	0.1	No	No
33	SR-60	w/o Archibald Av.	81.1	81.1	0.0	No	No
34	SR-60	e/o Archibald Av.	81.2	81.2	0.0	Yes	No

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

[2] Significance Criteria (Section 4).

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

8 RECEIVER LOCATIONS

To assess the potential for long-term operational and short-term construction noise impacts, the following five 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.

Representative sensitive receivers near the Project site include single-family residential homes at location R2, and existing agriculture uses at locations R1 and R3 to R5. The closest sensitive receiver is represented by location R1 where an existing agricultural use and residential home is located approximately 119 feet north of the Project site boundary. 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 119 feet north of the Project site, R1 represents an existing agricultural use with residential home on Merrill Avenue. A long-term noise measurement was taken near this location, L2, to describe the existing ambient noise environment.

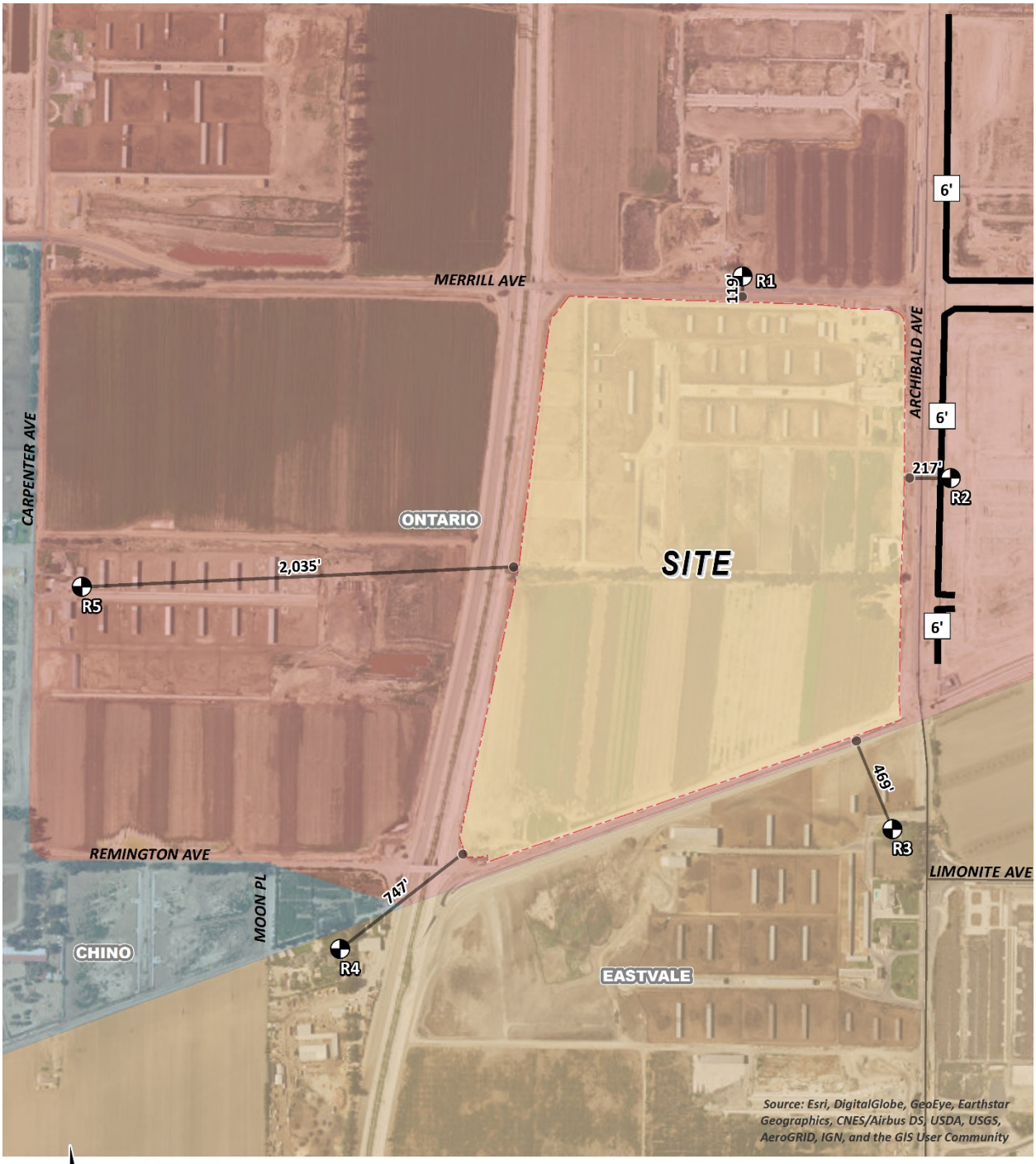
R2: Location R2 represents existing residential homes located roughly 217 feet east of the Project site across Archibald Avenue. A long-term noise measurement was taken near this location, L4, to describe the existing ambient noise environment.

R3: Location R3 represents the existing agriculture use situated south of the Project site at approximately 469 fee, west of Archibald Avenue. A long-term noise measurement was taken near this location, L5, to describe the existing ambient noise environment.

R4: Location R4 represents the existing agriculture use located southwest of the Project site at approximately 747 feet, on Moon Place. A long-term noise was taken near this location, L6, to describe the existing ambient noise environment.

R5: Location R5 represents the existing agriculture use located west of the Project site at approximately 2,035 feet on Carpenter Avenue.

EXHIBIT 8-A: 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 Colony Commerce Center East Specific Plan Project. Exhibit 9-A identifies the representative receiver locations and noise source locations used to assess the operational noise levels from Planning Areas 1 and 2. Exhibit 9-B shows the operational noise sources for Planning Areas 1, 2, and 3.

9.1 OPERATIONAL NOISE SOURCES

At the time this noise analysis was prepared the future tenants of the proposed Project were unknown. To present the potential worst-case noise conditions, this analysis assumes the Project would be operational 24 hours per day, seven days per week. The Project business operations would primarily be conducted within the enclosed buildings, except for traffic movement, parking, as well as loading and unloading of trucks at designated loading bays. The on-site Project-related noise sources are expected to include: idling trucks, delivery truck activities, parking, backup alarms, as well as loading and unloading of dry goods, and roof-top air conditioning units. This noise analysis is intended to describe noise level impacts associated with the expected typical industrial activities at the Project site.

9.2 REFERENCE NOISE LEVELS

Since the future tenants of the proposed Project are unknown, the Project's operational noise levels were estimated based on reference noise level measurements of similar operational activities. The reference noise levels are intended to describe the expected operational noise sources that may include idling trucks, delivery truck activities, parking, backup alarms, as well as loading and unloading of dry goods, and roof-top air conditioning units. To estimate the Project off-site operational noise impacts associated with the Colony Commerce Center East Specific Plan, the following reference noise level measurements were collected from existing logistics industrial warehouse operations containing similar operational noise sources, as shown on Table 9-1. Appendix 9.1 includes reference noise source photos for each location.

9.2.1 MOTIVATIONAL FULFILLMENT & LOGISTICS SERVICES DISTRIBUTION FACILITY (DRY GOODS)

Short-term reference noise level measurements were collected on Wednesday, January 7th, 2015, by Urban Crossroads, Inc. at the Motivational Fulfillment & Logistics Services distribution facility located at 6810 Bickmore Avenue in the City of Chino. The noise level measurements represent the typical weekday dry goods logistics warehouse operation in a single building 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.

UNLOADING/DOCKING ACTIVITY

The unloading/docking activity noise level measurement was taken over a 15-minute period and represents multiple noise sources taken from the center of loading dock activities generating a

reference noise level of 67.2 dBA Leq and 64.2 dBA L_{50} at a uniform 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.

While the specific noise levels at the Project site will depend on the actual tenant, the intensity and the daytime / nighttime hours of operation, a reference noise level of 67.2 dBA Leq for the unloading/docking activity at a normalized distance of 50 feet is used to describe the peak Project operational noise activity since it represents similar operational characteristics. The reference noise level of 67.2 dBA Leq at 50 feet is intended to describe the worst-case noise levels associated with the expected typical warehouse and distribution storage operations at the Project site.

9.2.2 ROOF-TOP AIR CONDITIONING UNITS

To assess the impacts created by the roof-top air conditioning units at the Project buildings, reference noise levels measurements were taken at the Santee Walmart on July 27th, 2015. Located at 170 Town Center Parkway in the City of Santee, the noise level measurements describe a 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 noise level is 57.2 dBA Leq. The operating conditions of the reference noise level measurement reflect peak summer cooling requirements with measured temperatures approaching 96 degrees Fahrenheit (°F) with average daytime temperatures of 82°F. The noise attenuation provided by a parapet wall is not reflected in this reference noise level measurement.

TABLE 9-1: REFERENCE NOISE LEVEL MEASUREMENTS

Noise Source	Duration (hh:mm:ss)	Ref. Dist. (Feet)	Noise Source Height (Feet)	Noise Level (dBA Leq)		Noise Level (dBA L_{50})	
				@ Ref. Distance	@ 50 Feet	@ Ref. Distance	@ 50 Feet
Unloading/Docking Activity[1]	00:15:00	30'	8'	67.2	62.8	64.2	59.8
Roof-Top Air Conditioning Units[2]	96:00:00	5'	25'	77.2	57.2	74.4	54.4

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

9.3 PROJECT OPERATIONAL NOISE LEVELS

Using the reference noise levels to represent the proposed warehouse operations that include idling trucks, delivery truck activities, parking, backup alarms, as well as loading and unloading of dry goods, and roof-top air conditioning units, 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, 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. With geometric spreading, sound levels attenuate (or decrease) at a rate of 6 dB for each doubling of distance from a point source (e.g. idling trucks, delivery truck activities, parking, backup alarms, as well as loading and unloading of dry goods, and roof-top air conditioning units).

9.3.1 PLANNING AREA 1 AND 2 OPERATIONAL NOISE LEVELS

Table 9-2 shows the individual operational noise level contributions from PAs 1 and 2 of the Project based on 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 31.0 to 43.7 dBA Leq, 28.0 to 40.9 dBA L_{50}, 27.4 to 41.4 dBA L_{25}, 31.3 to 46.0 dBA L_8, 35.0 to 49.8 dBA L_2, and 43.1 to 54.2 dBA Lmax at the sensitive receiver locations.

Table 9-3 presents the combined total Project-only operational noise level projections at the nearby sensitive receiver locations for a comparison with the City of Ontario, City of Chino, and City of Eastvale Municipal Code exterior noise level standards. The Project operational noise levels at the nearby sensitive receiver locations are shown to range from 31.0 to 43.7 dBA Leq, 28.0 to 40.9 dBA L_{50}, 27.4 to 41.4 dBA L_{25}, 31.3 to 46.0 dBA L_8, 35.0 to 49.8 dBA L_2, and 43.1 to 54.2 dBA Lmax. Based on the results of this analysis, the Project operational noise levels associated with the Colony Commerce Center East Specific Plan will satisfy the City of Ontario, City of Chino, and City of Eastvale Municipal Code daytime and nighttime exterior noise level standards, previously shown on Table 3-1. The operational noise level calculations are included in Appendix 9.2.

EXHIBIT 9-A: PLANNING AREA 1 AND 2 OPERATIONAL NOISE SOURCE LOCATIONS

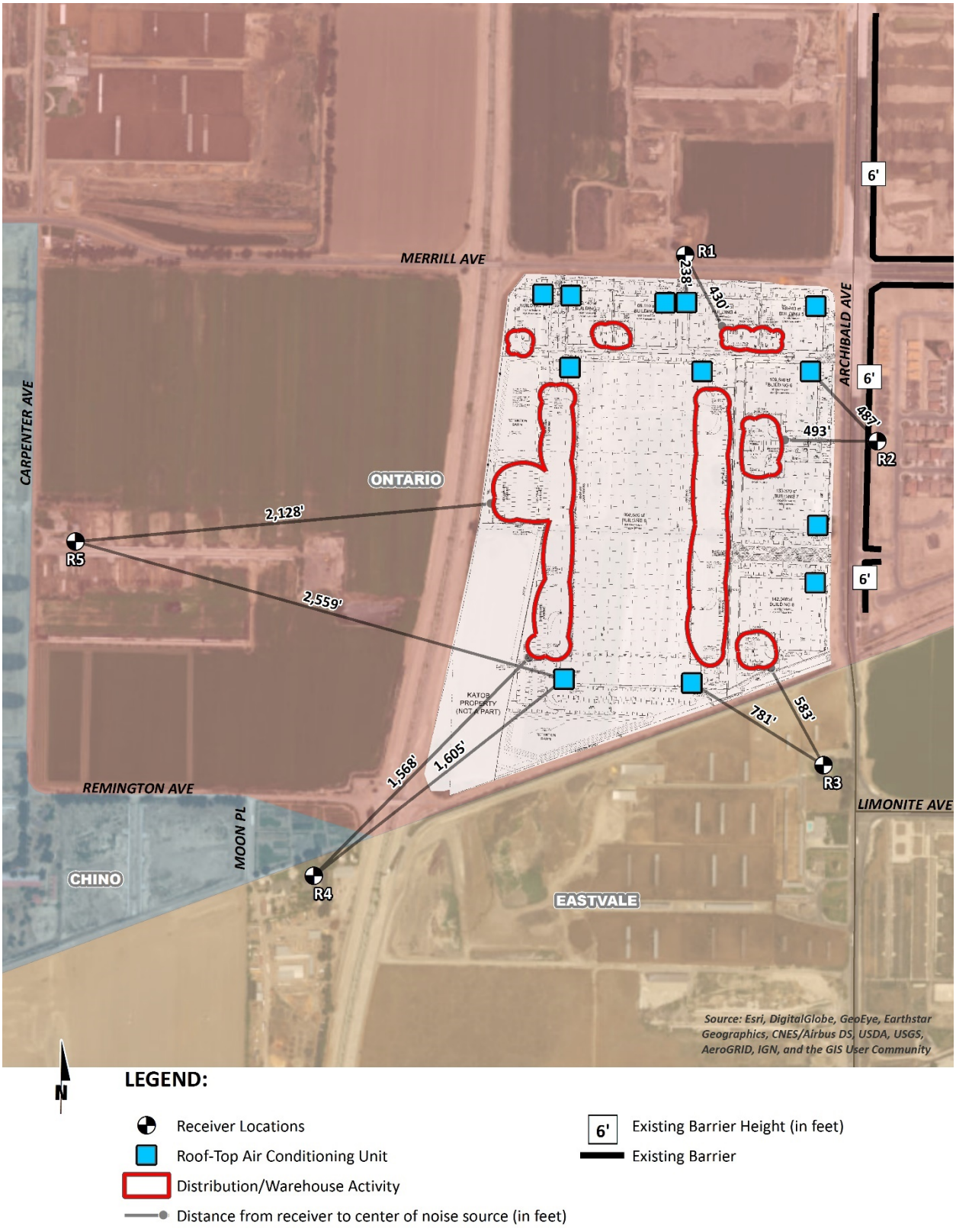


TABLE 9-2: PLANNING AREA 1 AND 2-ONLY OPERATIONAL NOISE LEVELS

Receiver Location[1]	Noise Source[2]	Project Operational Noise Levels (dBA)[3]					
		Leq (E. Avg.)	L_{50} (30 mins)	L_{25} (15 mins)	L_8 (5 mins)	L_2 (1 min)	L_{max} (Anytime)
R1	Unloading/Docking Activity	26.5	23.5	26.5	31.1	34.9	39.3
	Roof-Top Air Conditioning Units	43.6	40.8	20.1	17.9	16.5	44.6
	Combined Noise Level:	43.7	40.9	27.4	31.3	35.0	45.7
R2	Unloading/Docking Activity	37.5	34.5	37.5	42.1	45.9	50.3
	Roof-Top Air Conditioning Units	32.3	29.5	8.8	6.6	5.2	33.3
	Combined Noise Level:	38.6	35.7	37.5	42.1	45.9	50.4
R3	Unloading/Docking Activity	41.4	38.4	41.4	46.0	49.8	54.2
	Roof-Top Air Conditioning Units	33.3	30.5	9.8	7.6	6.2	34.3
	Combined Noise Level:	42.0	39.1	41.4	46.0	49.8	54.2
R4	Unloading/Docking Activity	32.8	29.8	32.8	37.4	41.2	45.6
	Roof-Top Air Conditioning Units	27.1	24.3	3.6	1.4	0.0	28.1
	Combined Noise Level:	33.8	30.9	32.8	37.4	41.2	45.7
R5	Unloading/Docking Activity	30.2	27.2	30.2	34.8	38.6	43.0
	Roof-Top Air Conditioning Units	23.0	20.2	0.0	0.0	0.0	24.0
	Combined Noise Level:	31.0	28.0	30.2	34.8	38.6	43.1

[1] See Exhibit 9-A for the receiver and noise source locations.
[2] Reference noise sources as shown on Table 9-1.
[3] Operational noise level calculations are provided in Appendix 9.2.
"E. Avg." = logarithmic (energy) average

TABLE 9-3: PLANNING AREA 1 AND 2 OPERATIONAL NOISE LEVEL COMPLIANCE

Receiver Location[1]	Noise Level at Receiver Locations (dBA)[2]						Threshold Exceeded?[3]	
	Leq (E. Avg.)	L_{50} (30 mins)	L_{25} (15 mins)	L_8 (5 mins)	L_2 (1 min)	L_{max} (Anytime)	Daytime	Nighttime
R1	43.7	40.9	27.4	31.3	35.0	45.7	No	No
R2	38.6	35.7	37.5	42.1	45.9	50.4	No	No
R3	42.0	39.1	41.4	46.0	49.8	54.2	No	No
R4	33.8	30.9	32.8	37.4	41.2	45.7	No	No
R5	31.0	28.0	30.2	34.8	38.6	43.1	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.; "E. Avg." = logarithmic (energy) average

9.3.2 PLANNING AREA 1, 2, AND 3 OPERATIONAL NOISE LEVELS

Table 9-4 shows the operational noise level contributions from PA 1, 2, and 3 of the Project based on each noise source at each of the nearby sensitive receiver locations. As indicated on Table 9-4, the Project-related operational noise levels from PA 1, 2, and 3 will range from 31.6 to 43.7 dBA Leq, 28.7 to 40.9 dBA L_{50}, 27.4 to 41.4 dBA L_{25}, 31.3 to 46.0 dBA L_8, 35.0 to 49.8 dBA L_2, and 43.5 to 54.2 dBA Lmax at the sensitive receiver locations.

Table 9-5 presents the combined total Project-related operational noise levels from PA 1, 2, and 3 at the nearby sensitive receiver locations for a comparison with the City of Ontario, City of Chino, and City of Eastvale Municipal Code exterior noise level standards. The Project operational noise levels at the nearby sensitive receiver locations are shown to range from 31.6 to 43.7 dBA Leq, 28.7 to 40.9 dBA L_{50}, 27.4 to 41.4 dBA L_{25}, 31.3 to 46.0 dBA L_8, 35.0 to 49.8 dBA L_2, and 43.5 to 54.2 dBA Lmax. Based on the results of this analysis, the Project operational noise levels associated with the Colony Commerce Center East Specific Plan will satisfy the City of Ontario, City of Chino, and City of Eastvale Municipal Code daytime and nighttime exterior noise level standards, previously shown on Table 3-1. The operational noise level calculations are included in Appendix 9.2.

EXHIBIT 9-B: PLANNING AREAS 1,2, AND 3 OPERATIONAL NOISE SOURCE LOCATIONS

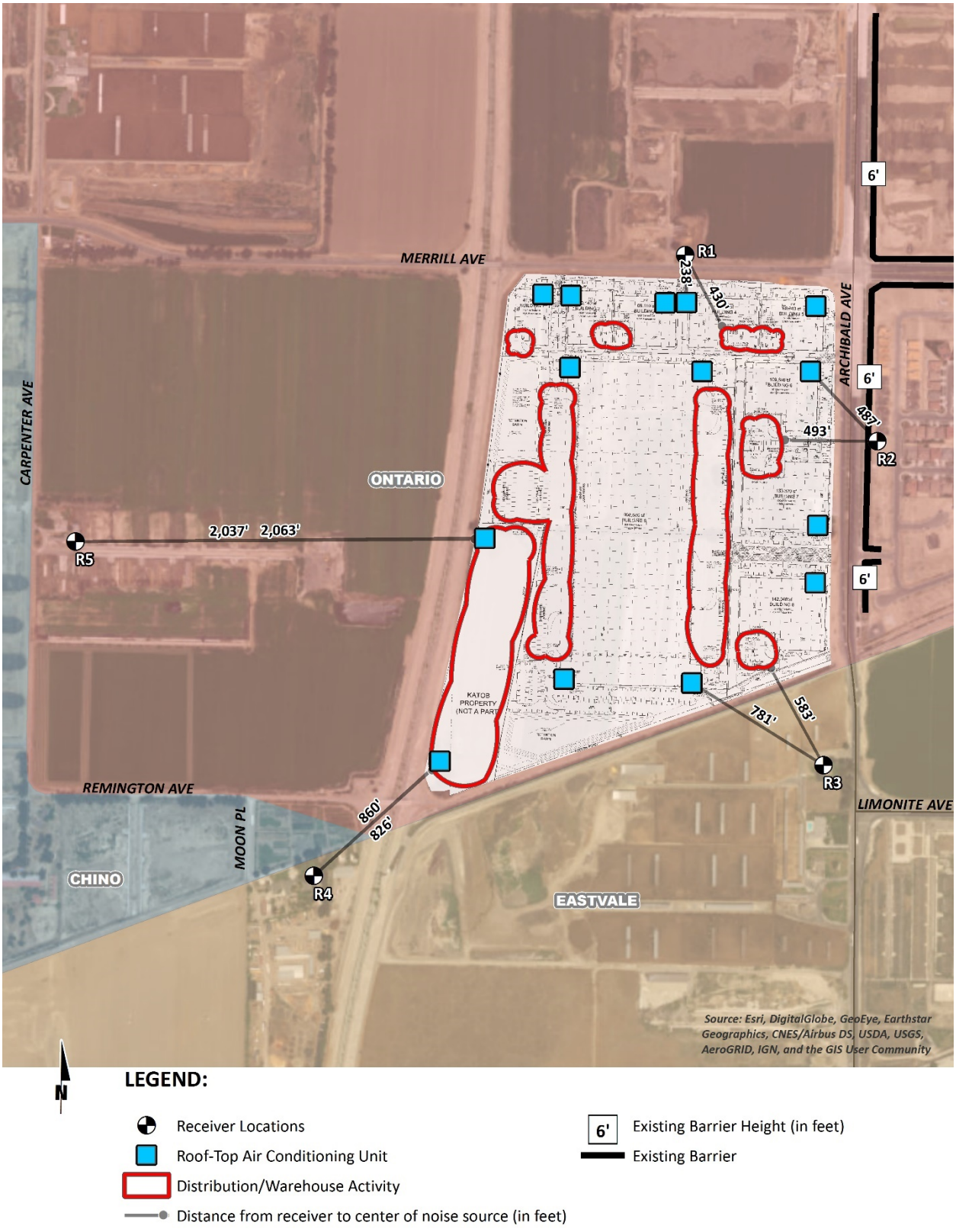


TABLE 9-4: PLANNING AREA 1, 2, AND 3-ONLY OPERATIONAL NOISE LEVELS

Receiver Location[1]	Noise Source[2]	Project Operational Noise Levels (dBA)[3]					
		Leq (E. Avg.)	L_{50} (30 mins)	L_{25} (15 mins)	L_8 (5 mins)	L_2 (1 min)	L_{max} (Anytime)
R1	Unloading/Docking Activity	26.5	23.5	26.5	31.1	34.9	39.3
	Roof-Top Air Conditioning Units	43.6	40.8	20.1	17.9	16.5	44.6
	Combined Noise Level:	43.7	40.9	27.4	31.3	35.0	45.7
R2	Unloading/Docking Activity	37.5	34.5	37.5	42.1	45.9	50.3
	Roof-Top Air Conditioning Units	32.3	29.5	8.8	6.6	5.2	33.3
	Combined Noise Level:	38.6	35.7	37.5	42.1	45.9	50.4
R3	Unloading/Docking Activity	41.4	38.4	41.4	46.0	49.8	54.2
	Roof-Top Air Conditioning Units	33.3	30.5	9.8	7.6	6.2	34.3
	Combined Noise Level:	42.0	39.1	41.4	46.0	49.8	54.2
R4	Unloading/Docking Activity	38.4	35.4	38.4	43.0	46.8	51.2
	Roof-Top Air Conditioning Units	32.5	29.7	9.0	6.8	5.4	33.5
	Combined Noise Level:	39.4	36.4	38.4	43.0	46.8	51.3
R5	Unloading/Docking Activity	30.6	27.6	30.6	35.2	39.0	43.4
	Roof-Top Air Conditioning Units	24.9	22.1	1.4	0.0	0.0	25.9
	Combined Noise Level:	31.6	28.7	30.6	35.2	39.0	43.5

[1] See Exhibit 9-B for the receiver and noise source locations.
[2] Reference noise sources as shown on Table 9-1.
[3] Operational noise level calculations are provided in Appendix 9.2.
"E. Avg." = logarithmic (energy) average

TABLE 9-5: PLANNING AREA 1, 2, AND 3 OPERATIONAL NOISE LEVEL COMPLIANCE

Receiver Location[1]	Noise Level at Receiver Locations (dBA)[2]						Threshold Exceeded?[3]	
	Leq (E. Avg.)	L_{50} (30 mins)	L_{25} (15 mins)	L_8 (5 mins)	L_2 (1 min)	L_{max} (Anytime)	Daytime	Nighttime
R1	43.7	40.9	27.4	31.3	35.0	45.7	No	No
R2	38.6	35.7	37.5	42.1	45.9	50.4	No	No
R3	42.0	39.1	41.4	46.0	49.8	54.2	No	No
R4	39.4	36.4	38.4	43.0	46.8	51.3	No	No
R5	31.6	28.7	30.6	35.2	39.0	43.5	No	No

[1] See Exhibit 9-B for the receiver and noise source locations.
[2] Estimated Project operational noise levels as shown on Table 9-3.
[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.; "E. Avg." = logarithmic (energy) average

9.4 PROJECT OPERATIONAL NOISE CONTRIBUTION

To describe the worst-case Project operational noise level contributions, the Project-related operational noise levels from all Planning Areas (1, 2, and 3) are combined with the existing ambient noise levels measurements for the nearby receiver locations potentially impacted by Project operational noise sources. Since the units used to measure noise, decibels (dB), are logarithmic units, the Project-operational and existing ambient noise levels cannot be combined using standard arithmetic equations. (4) Instead, they must be logarithmically added using the following base equation:

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

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 ambient daytime and nighttime conditions are presented on Tables 9-4 and 9-5.

As indicated on Table 9-6, the worst-case daytime operational noise level increase due to operational noise levels from Planning Areas 1, 2, and 3 over the existing ambient conditions will approach 0.9 dBA L_{50}. During the nighttime hours, the highest operational noise level increase will approach 0.4 dBA Leq, as shown on Table 9-7. Since the Project-related operational noise level contributions will not exceed the significance criteria discussed in Section 4 under worst-case conditions, 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 9-6: PROJECT DAYTIME NOISE LEVEL CONTRIBUTIONS

Location		Type of Noise	Noise Levels (dBA)						Threshold Exceeded?[7]
Rec.[1]	Meas.[2]		Leq (E. Avg.)	L_{50} (30 mins)	L_{25} (15 mins)	L_8 (5 mins)	L_2 (1 min)	L_{max} (Anytime)	
R1	L2	Project Noise Level[3]	43.7	40.9	27.4	31.3	35.0	45.7	No
		Ambient Noise Level[4]	54.8	47.0	47.8	49.1	50.5	72.4	
		Combined[5]	55.1	47.9	47.8	49.2	50.6	72.4	
		Project Contribution[6]	0.3	0.9	0.0	0.1	0.1	0.0	
R2	L4	Project Noise Level[3]	38.6	35.7	37.5	42.1	45.9	50.4	No
		Ambient Noise Level[4]	65.2	60.9	63.7	67.3	71.7	92.8	
		Combined[5]	65.2	60.9	63.7	67.3	71.7	92.8	
		Project Contribution[6]	0.0	0.0	0.0	0.0	0.0	0.0	
R3	L5	Project Noise Level[3]	42.0	39.1	41.4	46.0	49.8	54.2	No
		Ambient Noise Level[4]	65.8	63.1	65.7	68.1	71.5	89.9	
		Combined[5]	65.8	63.1	65.7	68.1	71.5	89.9	
		Project Contribution[6]	0.0	0.0	0.0	0.0	0.0	0.0	
R4	L6	Project Noise Level[3]	39.4	36.4	38.4	43.0	46.8	51.3	No
		Ambient Noise Level[4]	57.5	49.4	52.3	57.4	63.6	85.1	
		Combined[5]	57.6	49.6	52.5	57.6	63.7	85.1	
		Project Contribution[6]	0.1	0.2	0.2	0.2	0.1	0.0	
R5	L6	Project Noise Level[3]	31.6	28.7	30.6	35.2	39.0	43.5	No
		Ambient Noise Level[4]	57.5	49.4	52.3	57.4	63.6	85.1	
		Combined[5]	57.5	49.4	52.3	57.4	63.6	85.1	
		Project Contribution[6]	0.0	0.0	0.0	0.0	0.0	0.0	

[1] See Exhibit 9-A for the receiver and noise source locations.
[2] Measurement locations as shown on Exhibit 5-A.
[3] Total operational noise levels as shown on Table 9-2.
[4] Existing ambient noise level measurements provided in Appendix 5.2.
[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 of Noise Impacts (Section 4).

TABLE 9-7: PROJECT NIGHTTIME NOISE LEVEL CONTRIBUTIONS

Location		Type of Noise	Noise Levels (dBA)						Threshold Exceeded?[7]
Rec.[1]	Meas.[2]		Leq (E. Avg.)	L_{50} (30 mins)	L_{25} (15 mins)	L_8 (5 mins)	L_2 (1 min)	L_{max} (Anytime)	
R1	L2	Project Noise Level[3]	43.7	40.9	27.4	31.3	35.0	45.7	No
		Ambient Noise Level[4]	53.8	51.8	51.9	52.0	52.7	69.5	
		Combined[5]	54.2	52.1	51.9	52.0	52.8	69.5	
		Project Contribution[6]	0.4	0.3	0.0	0.0	0.1	0.0	
R2	L4	Project Noise Level[3]	38.6	35.7	37.5	42.1	45.9	50.4	No
		Ambient Noise Level[4]	63.3	56.1	59.4	63.7	68.4	94.4	
		Combined[5]	63.3	56.1	59.4	63.7	68.4	94.4	
		Project Contribution[6]	0.0	0.0	0.0	0.0	0.0	0.0	
R3	L5	Project Noise Level[3]	42.0	39.1	41.4	46.0	49.8	54.2	No
		Ambient Noise Level[4]	64.4	58.2	62.8	67.2	70.1	84.1	
		Combined[5]	64.4	58.3	62.8	67.2	70.1	84.1	
		Project Contribution[6]	0.0	0.1	0.0	0.0	0.0	0.0	
R4	L6	Project Noise Level[3]	39.4	36.4	38.4	43.0	46.8	51.3	No
		Ambient Noise Level[4]	53.9	49.0	50.6	53.0	58.2	77.3	
		Combined[5]	54.1	49.2	50.9	53.4	58.5	77.3	
		Project Contribution[6]	0.2	0.2	0.3	0.4	0.3	0.0	
R5	L6	Project Noise Level[3]	31.6	28.7	30.6	35.2	39.0	43.5	No
		Ambient Noise Level[4]	53.9	49.0	50.6	53.0	58.2	77.3	
		Combined[5]	53.9	49.0	50.6	53.1	58.3	77.3	
		Project Contribution[6]	0.0	0.0	0.0	0.1	0.1	0.0	

[1] See Exhibit 9-A for the receiver and noise source locations.
[2] Measurement locations as shown on Exhibit 5-A.
[3] Total operational noise levels as shown on Table 9-2.
[4] Existing ambient noise level measurements provided in Appendix 5.2.
[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 of Noise Impacts (Section 4).

9.5 OPERATIONAL VIBRATION IMPACTS

To assess the potential vibration impacts from truck haul trips associated with operational activities, threshold for vibration of 0.05 in/sec RMS is used. Truck vibration levels are dependent on vehicle characteristics, load, speed, and pavement conditions. Typical vibration levels for the Colony Commerce Center East Specific Plan heavy truck activity at normal traffic speeds will approach 0.001 in/sec RMS, based on the FTA *Transit Noise Impact and Vibration Assessment*. (2) Truck deliveries 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 vibration threshold of 0.05 in/sec RMS, and therefore, will be *less than significant*.

10 CONSTRUCTION IMPACTS

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

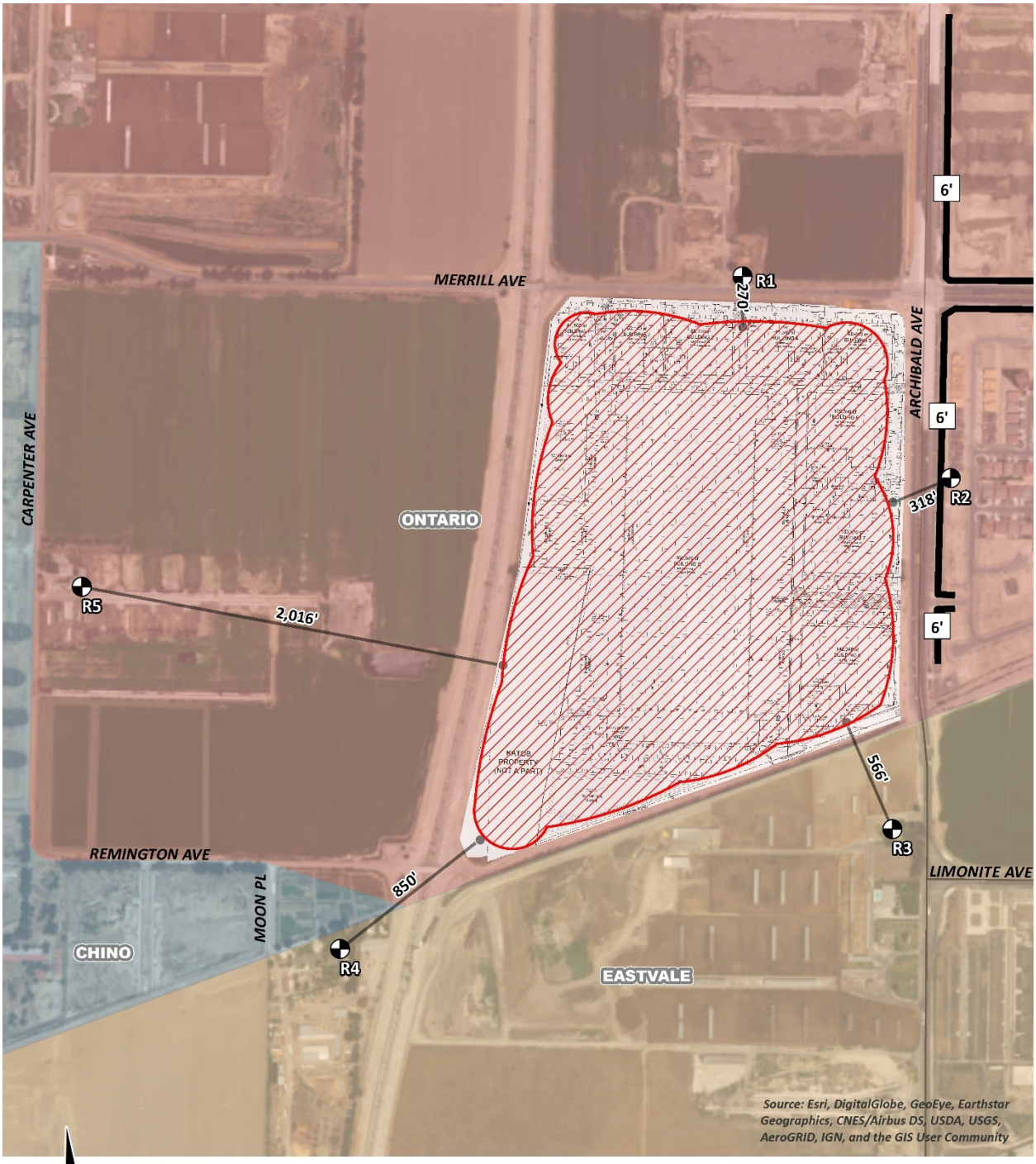
10.1 CONSTRUCTION NOISE LEVELS

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

- 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 in excess of 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 *Colony Commerce Center East Specific Plan Air Quality Impact Analysis* prepared by Urban Crossroads, Inc. (27)

EXHIBIT 10-A: CONSTRUCTION NOISE SOURCE AND RECEIVER 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 common reference distance of 50 feet.

TABLE 10-1: CONSTRUCTION REFERENCE NOISE LEVELS

ID	Noise Source	Reference Distance From Source (Feet)	Reference Noise Levels @ Reference Distance (dBA Leq)	Reference Noise Levels @ 50 Feet (dBA Leq)[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	Residential 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 CONSTRUCTION NOISE ANALYSIS

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

TABLE 10-2: DEMOLITION EQUIPMENT NOISE LEVELS

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

Receiver Location	Distance to Construction Activity (Feet)[2]	Distance Attenuation (dBA Leq)[3]	Estimated Noise Barrier Attenuation (dBA Leq)[4]	Construction Noise Level (dBA Leq)
R1	270'	-14.6	0.0	64.9
R2	318'	-16.1	-5.0	58.5
R3	566'	-21.1	0.0	58.5
R4	850'	-24.6	0.0	55.0
R5	2,016'	-32.1	0.0	47.5

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

TABLE 10-3: GRADING EQUIPMENT NOISE LEVELS

Reference Construction Activity[1]	Reference Noise Level @ 50 Feet (dBA Leq)
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
Peak Reference Noise Level at 50 Feet (dBA Leq):	79.6

Receiver Location	Distance to Construction Activity (Feet)[2]	Distance Attenuation (dBA Leq)[3]	Estimated Noise Barrier Attenuation (dBA Leq)[4]	Construction Noise Level (dBA Leq)
R1	270'	-14.6	0.0	64.9
R2	318'	-16.1	-5.0	58.5
R3	566'	-21.1	0.0	58.5
R4	850'	-24.6	0.0	55.0
R5	2,016'	-32.1	0.0	47.5

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

TABLE 10-4: BUILDING CONSTRUCTION EQUIPMENT NOISE LEVELS

Reference Construction Activity[1]	Reference Noise Level @ 50 Feet (dBA Leq)
Construction Vehicle Maintenance Activities	67.5
Foundation Trenching	68.2
Peak Reference Noise Level at 50 Feet (dBA Leq):	68.2

Receiver Location	Distance to Construction Activity (Feet)[2]	Distance Attenuation (dBA Leq)[3]	Estimated Noise Barrier Attenuation (dBA Leq)[4]	Construction Noise Level (dBA Leq)
R1	270'	-14.6	0.0	53.5
R2	318'	-16.1	-5.0	47.1
R3	566'	-21.1	0.0	47.1
R4	850'	-24.6	0.0	43.6
R5	2,016'	-32.1	0.0	36.1

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

TABLE 10-5: ARCHITECTURAL COATING EQUIPMENT NOISE LEVELS

Reference Construction Activity[1]	Reference Noise Level @ 50 Feet (dBA Leq)
Construction Vehicle Maintenance Activities	67.5
Peak Reference Noise Level at 50 Feet (dBA Leq):	68.2

Receiver Location	Distance to Construction Activity (Feet)[2]	Distance Attenuation (dBA Leq)[3]	Estimated Noise Barrier Attenuation (dBA Leq)[4]	Construction Noise Level (dBA Leq)
R1	270'	-14.6	0.0	53.5
R2	318'	-16.1	-5.0	47.1
R3	566'	-21.1	0.0	47.1
R4	850'	-24.6	0.0	43.6
R5	2,016'	-32.1	0.0	36.1

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

TABLE 10-6: PAVING EQUIPMENT NOISE LEVELS

Reference Construction Activity[1]	Reference Noise Level @ 50 Feet (dBA Leq)
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
Peak Reference Noise Level at 50 Feet (dBA Leq):	71.6

Receiver Location	Distance to Construction Activity (Feet)[2]	Distance Attenuation (dBA Leq)[3]	Estimated Noise Barrier Attenuation (dBA Leq)[4]	Construction Noise Level (dBA Leq)
R1	270'	-14.6	0.0	57.0
R2	318'	-16.1	-5.0	50.5
R3	566'	-21.1	0.0	50.5
R4	850'	-24.6	0.0	47.0
R5	2,016'	-32.1	0.0	39.5

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

10.4 CONSTRUCTION NOISE THRESHOLDS OF SIGNIFICANCE

The construction noise analysis shows that the highest construction noise levels will occur when equipment is operating at the Project site boundary. As shown on Table 10-7, the unmitigated construction noise levels experienced at the nearby sensitive receiver locations are expected to range from 47.5 to 64.9 dBA Leq.

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

Receiver Location[1]	Construction Phase Hourly Noise Level (dBA Leq)					
	Demolition	Grading	Building Construction	Architectural Coating	Paving	Peak Activity[2]
R1	64.9	64.9	53.5	53.5	57.0	64.9
R2	58.5	58.5	47.1	47.1	50.5	58.5
R3	58.5	58.5	47.1	47.1	50.5	58.5
R4	55.0	55.0	43.6	43.6	47.0	55.0
R5	47.5	47.5	36.1	36.1	39.5	47.5

[1] Noise receiver locations are shown on Exhibit 10-A.
[2] Estimated construction noise levels during peak operating conditions.

Table 10-8 shows the peak construction noise levels at the potentially impacted receiver locations approaching 64.9 dBA Leq will satisfy the City of Ontario 65 dBA Leq significance threshold during temporary Project construction activities. Therefore, the unmitigated noise impact due to Project construction is considered *less than significant*.

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

Receiver Location[1]	Construction Noise Levels (dBA Leq)		
	Peak Activity[2]	Threshold[3]	Threshold Exceeded?[4]
R1	64.9	65	No
R2	58.5	65	No
R3	58.5	65	No
R4	55.0	65	No
R5	47.5	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 10-7.
[3] Construction noise standards as shown on Table 3-2.
[4] Do the estimated Project construction noise levels satisfy the construction noise level threshold?

10.5 CONSTRUCTION NOISE LEVEL INCREASES

To describe the temporary Project construction noise level contributions to the existing ambient noise environment, the Project construction noise levels were combined with the existing ambient noise levels measurements at the off-site receiver locations. The difference between the combined Project-construction and ambient noise levels are used to describe the construction noise level contributions. Temporary noise level increases that would be experienced at sensitive receiver locations when Project construction-source noise is added to the ambient daytime conditions are presented on Table 10-9. A temporary noise level increase of 12 dBA is considered a potentially significant impact based on the Caltrans substantial noise level increase criteria which is used to assess the Project-construction noise level increases. (3)

No nighttime construction activity is permitted in the City of Ontario Municipal Code, and therefore, is not analyzed in this noise study.

As indicated in Table 10-9, the Project will contribute unmitigated, worst-case construction noise level increases ranging from 0.4 to 10.5 dBA Leq during the daytime hours at the closest sensitive receiver locations. Since the worst-case temporary noise level increase of up to 10.5 dBA Leq during Project construction will satisfy the 12 dBA Leq significance threshold, the unmitigated construction noise level increases are considered *less than significant* temporary noise impacts.

TABLE 10-9: UNMITIGATED CONSTRUCTION-RELATED TEMPORARY NOISE LEVEL INCREASES

Receiver Location[1]	Project Construction Noise Level[2]	Measurement Location[3]	Reference Ambient Noise Levels[4]	Combined Project and Ambient[5]	Temporary Worst-Case Project Contribution[6]	Threshold Exceeded?[7]
R1	64.9	L2	54.8	65.3	10.5	No
R2	58.5	L4	65.2	66.0	0.8	No
R3	58.5	L5	65.8	66.5	0.7	No
R4	55.0	L6	57.5	59.4	1.9	No
R5	47.5	L6	57.5	57.9	0.4	No

[1] Noise receiver locations are shown on Exhibit 10-A.
[2] Peak unmitigated Project construction noise levels as shown on Table 10-8.
[3] Ambient noise level measurement locations as shown on Exhibit 5-A.
[4] Observed daytime ambient noise levels as shown on Table 5-1.
[5] Represents the combined ambient conditions plus the Project construction activities.
[6] The temporary noise level increase expected with the addition of the proposed Project activities.
[7] Based on the 12 dBA temporary increase significance criteria as defined in Section 4.

10.6 CONSTRUCTION VIBRATION IMPACTS

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

- Heavy Construction Equipment: Although all heavy mobile construction equipment has the potential of causing at least some perceptible vibration while operating close to 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 6-8 and the construction vibration assessment methodology published by the FTA, it is possible to estimate the Project vibration impacts. Table 10-10 presents the expected Project related vibration levels at the nearby receiver locations.

Based on the reference vibration levels provided by the FTA, a large bulldozer represents the peak source of vibration with a reference velocity of 0.089 in/sec PPV at 25 feet. At distances ranging from 270 to 2,347 feet from Project construction activities, construction vibration velocity levels are expected to approach 0.003 in/sec PPV, as shown on Table 10-10. 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 10-10 shows the highest construction vibration levels in RMS are expected to approach 0.002 in/sec RMS at the nearby receiver locations which 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. (2) The peak Project-construction vibration levels shown on Table 10-10, approaching 0.003 in/sec PPV, will not exceed the FTA vibration levels for building damage at the residential homes near the Project site. Further, the impacts at the site of the closest sensitive receivers are unlikely to be sustained during the entire construction period, but will occur rather only during the times that heavy construction equipment is operating adjacent to the Project site perimeter. Construction at the Project site will be restricted to daytime hours consistent with City requirements thereby eliminating potential vibration impact during the sensitive nighttime hours.

SOIL IMPORT TRUCK HAUL TRIPS

The Project site will require up to 10,000 cubic yards of soil export during the construction process. Truck vibration levels are dependent on vehicle characteristics, load, speed, and pavement conditions. Typical vibration levels for the Colony Commerce Center East Specific Plan 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.* (2) Truck deliveries transiting on site will be travelling at very low speeds so it is expected that delivery truck vibration levels at nearby homes will remain below the 0.05 in/sec RMS threshold.

TABLE 10-10: CONSTRUCTION EQUIPMENT VIBRATION LEVELS

Receiver[1]	City	Dist. To Const. Activity (Feet)	Receiver PPV Levels (in/sec)[2]					RMS Velocity (in/sec)[3]	Threshold[4]	
			Small Bulldozer	Jack-hammer	Loaded Trucks	Large Bulldozer	Peak Vibration		RMS	Exceeded?
R1	Ontario	270'	0.000	0.001	0.002	0.003	0.003	0.002	0.05	No
R2	Ontario	318'	0.000	0.001	0.002	0.002	0.002	0.001	0.05	No
R3	Eastvale	566'	0.000	0.000	0.001	0.001	0.001	0.001	0.05	No
R4	Eastvale	850'	0.000	0.000	0.000	0.000	0.000	0.000	0.05	No
R5	Ontario	2,016'	0.000	0.000	0.000	0.000	0.000	0.000	0.05	No

[1] Receiver locations are shown on Exhibit 10-A.
[2] Based on the Vibration Source Levels of Construction Equipment included on Table 6-8.
[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] Do the vibration levels exceed the maximum acceptable vibration threshold (see Table 3-3)?
"PPV" = peak particle velocity; "RMS" = root-mean-square velocity

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11 REFERENCES

1. **Urban Crossroads, Inc.** *Colony Commerce Center East Specific Plan Traffic Impact Analysis.* October 2017.
2. **U.S. Department of Transportation, Federal Transit Administration.** *Transit Noise and Vibration Impact Assessment.* May 2006. FTA-VA-90-1003-06.
3. **California Department of Transportation.** *Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects.* May 2011.
4. **California Department of Transportation Environmental Program.** *Technical Noise Supplement - A Technical Supplement to the Traffic Noise Analysis Protocol.* Sacramento, CA : s.n., September 2013.
5. **Environmental Protection Agency Office of Noise Abatement and Control.** *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety.* March 1974. EPA/ONAC 550/9/74-004.
6. **U.S. Department of Transportation, Federal Highway Administration, Office of Environment and Planning, Noise and Air Quality Branch.** *Highway Traffic Noise Analysis and Abatement Policy and Guidance.* June, 1995.
7. **U.S. Department of Transportation, Federal Highway Administration.** *Highway Traffic Noise in the United States, Problem and Response.* April 2000. p. 3.
8. **U.S. Environmental Protection Agency Office of Noise Abatement and Control.** *Noise Effects Handbook-A Desk Reference to Health and Welfare Effects of Noise.* October 1979 (revised July 1981). EPA 550/9/82/106.
9. **Office of Planning and Research.** *State of California General Plan Guidelines.* October 2003.
10. **State of California.** *2013 California Green Building Standards Code.* January 2014.
11. **City of Ontario.** *The Ontario Plan Safety Section, S4, Noise Hazards.* March 2014.
12. —. *Municipal Code, Title 5, Chapter 29 - Noise.*
13. **City of Chino.** *Municipal Code, Chapter 9.40 - Noise.*
14. **County of Riverside Department of Environmental Health, Office of Industrial Hygiene.** *Mr. Steve Hinde, REHS, CIH, Senior Industrial Hygienist (951) 955-8982.*
15. **City of Eastvale.** *Municipal Code, Title 8, Chapter 52 - Noise Regulation.*
16. **Environmental Protection Agency Office of Noise Abatement and Control.** *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety.* March, 1974. EPA/ONAC 550/9/74-004.
17. **County of San Bernardino.** *Chino Airport Master Plan, Appendix B Environmental Overview.* 2010.
18. **San Bernardino County Airport Land Use Commission.** *Chino Airport Comprehensive Land Use Plan.* November 1991.
19. **City of Ontario.** *LA/Ontario International Airport Land Use Compatibility Plan.* April 2011.
20. **California Court of Appeal.** *Gray v. County of Madera, F053661.* 167 Cal.App.4th 1099; - Cal.Rptr.3d, October 2008.
21. **Federal Interagency Committee on Noise.** *Federal Agency Review of Selected Airport Noise Analysis Issues.* August 1992.

22. **Superior Court of California, County of Riverside.** *Friends of Riverside's Hills v. Riverside Transportation Commission, et al.* RIC 1113896, January 2013.

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.** *Colony Commerce Center East Specific Plan Air Quality Impact Analysis.* February 2017.

12 CERTIFICATION

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

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EDUCATION

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

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

PROFESSIONAL REGISTRATIONS

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

PROFESSIONAL AFFILIATIONS

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

PROFESSIONAL CERTIFICATIONS

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

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APPENDIX 3.1:

CITY OF ONTARIO MUNICIPAL CODE

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Print

Ontario Municipal Code

CHAPTER 29: NOISE

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

It is hereby found and declared that:

(a) The making and creation of excessive, unnecessary or unusually loud noises within the limits of the City is a condition that has existed for some time, however, the extent and volume of such noises is increasing;

(b) The making, creation or maintenance of such excessive, unnecessary, unnatural or unusually loud noises that are prolonged, unusual and unnatural in their time, place and use affect and are a detriment to public health, comfort, convenience, safety, welfare and prosperity of the residents of the City; and

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

(§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.02. Definitions.

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

(a) "Ambient noise level" shall mean the all-encompassing noise level associated with a given environment and is a composite of sounds from all sources, excluding the alleged offensive noise or excessive sound, at the location and approximate time at which a comparison with the alleged offensive noise is to be made.

(b) "Applicable (noise) zone" shall mean the noise zone category based on the actual use of the property, provided that the actual use is a legal use in the City.

(c) "A-weighted sound level" shall mean the sound pressure level in decibels (dBAs) as measured with a sound level meter using the A-weighted filter network (scale) at slow response and at a pressure of twenty (20) micropascals. The A-weighted filter de-emphasizes the very low and a very high frequency component of sound in a manner similar to the response of the human ear, and is a numerical method of rating human judgment of loudness.

(d) "Decibel (dBA)" shall mean a unit for measuring the amplitude of a sound, equal to twenty (20) times the logarithm to the base ten (10) of the ratio of pressure of the sound measured to the reference pressure of twenty (20) micropascals.

(e) "Equivalent sound or noise level (Leq)" shall mean the International Electrotechnical Commission (IEC) 60804 Standard for measurement, or the most recent revision thereof, for the sound level corresponding to a steady state noise level over a given sample period with the same amount of acoustic energy as the actual time varying noise level or the energy average noise level during the sample period. The measurement period for the purposes of this chapter is fifteen (15) minutes.

(f) "Impulsive noise" shall mean a noise of short duration usually less than one (1) second and of high intensity, with an abrupt onset and rapid decay. Such objectionable noises may also be repetitive.

(g) "Intrusive noise" shall mean that noise that intrudes over and above the ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, time of occurrence and tonal information content, as well as the prevailing ambient noise level.

(h) "Maintenance" shall mean the upkeep, repair or preservation of existing property or structures.

(i) "Noise" shall mean any unwanted sound or sound that is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing or is otherwise annoying.

(j) "Noise level (sound level)" shall mean the weighted sound pressure level obtained by use of a sound level meter having a standard frequency filter for attenuating part of the sound spectrum. For purposes of this chapter, all noise levels (sound levels) shall be A-weighted sound pressure level.

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

meters or an instrument and the associated recording and analyzing equipment that will provide equivalent data.

(§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.03. Designated noise zones.

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

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

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

(§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.04. Exterior noise standards.

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

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

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

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

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

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

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

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

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

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

(§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.05. Interior noise standards.

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

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

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

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

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

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

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

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

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

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

(§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.06. Exemptions.

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

(a) Any activity conducted on public property, or on private property with the consent of the owner, by any public entity or its officers, employees, representatives, agents, subcontractors, permittees, licensees or lessees that the public entity has authorized are exempt from the provisions of this chapter. This includes, without limitation, sporting and recreational activities that are sponsored, co-sponsored, permitted or allowed by the City or any school district within the City's jurisdictional boundaries. This also includes, without limitation, occasional outdoor gatherings, public dances, shows or sporting and entertainment events, provided such events are conducted pursuant to an approval, authorization, contract, lease, permit or sublease by the appropriate public entity, specifically the planning commission or City Council;

(b) Occasional outdoor gatherings, public dances, show, sporting and entertainment events, provided said events are conducted pursuant to a permit or license issued by the appropriate jurisdiction relative to the staging of said events;

(c) Any mechanical device, apparatus or equipment used, related to or connected with emergency machinery, vehicle, work or warning alarm or bell, provided the sounding of any bell or alarm on any building or motor vehicle shall terminate its operation within forty-five (45) minutes in any hour of its being activated;

(d) Noise sources associated with construction, repair, remodeling, demolition or grading of any real property. Such activities shall instead be subject to the provisions of § 5-29.09;

(e) Noise sources associated with construction, repair, remodeling, demolition or grading of public rights-of-way or during authorized seismic surveys;

(f) All mechanical devices, apparatus or equipment associated with agriculture operations provided that:

(1) Operations do not take place between 8:00 p.m. and 7:00 a.m.;

(2) Such operations and equipment are utilized for the protection or salvage of agricultural crops during periods of potential or actual frost damage or other adverse weather conditions; or

(3) Such operations and equipment are associated with agricultural pest control through pesticide application, provided the application is made in accordance with permits issued by or regulations enforced by the California Department of Agriculture;

(g) Noise sources associated with the maintenance of real property. Such activities shall instead be subject to the provisions of § 5-29.08;

(h) Any activity to the extent regulation thereof has been preempted by state or federal law;

(i) Any noise sources associated with people and/or music associated with a party at a residential property. Such noise shall be subject to the provisions of OMC § 5-29.07;

(j) Any noise source emanating from an ice cream truck within the City. Such noise shall be subject to the provisions of OMC § 4-18.04;

(k) Any noise sources associated with barking dogs or other intermittent noises made by animals on any properly within the City. Such noise shall be subject to the provisions of OMC Chapter 1, Title 6;

(l) Noise sources related to uses approved by a permit or development agreement adopted prior to the date of adoption of this chapter and that contains acoustic or noise standard conditions of approval. This exemption shall only be applicable during the effective period of the City-approved permit or development agreement.

(§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.07. Loud and disturbing noise.

(a) It is unlawful for any person or property owner within the City to make, cause or allow to be made any loud, excessive, impulsive or intrusive noise, disturbance or commotion that disturbs the peace or quiet of any area or that causes discomfort or annoyance to any reasonable person of normal sensitivities in the area, after a Police or Code Enforcement Officer has first requested that the person or property owner cease and desist from making such noise. The types of loud, disturbing, excessive, impulsive or intrusive noise may include, but shall not be limited to, yelling, shouting, hooting, whistling, singing, playing a musical instrument, or emitting or transmitting any loud music or noise from any mechanical or electrical sound making or sound-amplifying device.

(b) The factors, standards, and conditions that may be considered in determining whether a violation of the provisions of this section has been committed, included, but not limited to, the following:

(1) The level of the noise;

(2) The level and intensity of the background (ambient) noise, if any;

(3) The proximity of the noise to residential or commercial sleeping areas;

(4) The nature and zoning of the area within which the noise emanates;

(5) The density of inhabitation of the area within which the noise emanates;

(6) The time of day and night the noise occurs;

(7) The duration of the noise;

(8) Whether the noise is constant, recurrent or intermittent;

(9) Whether the noise is produced by a commercial or noncommercial activity; and

(10) Whether the use is lawful under the provisions of Title 5 of this Code and whether the noise is one that could reasonably be expected from the activity or allowed use.

(§ 2, Ord. 2888, eff. March 6, 2008)

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

(a) No person, while engaged in maintenance of real property, shall operate any tool, equipment or machine in a manner that produces loud noise that disturbs a person of normal sensitivity who works or resides in the vicinity, or a Police or Code Enforcement Officer, except between the hours of 8:00 a.m. and 6:00 p.m.

(b) Trimming or pruning that requires the use of chainsaws or mulching machines shall only be allowed between the hours of 8:00 a.m. and 6:00 p.m. on a weekday and between the hours of 9:00 a.m. and 5:00

p.m. on Saturday or Sunday.

(c) The use of electrical or gasoline powered blowers, such as commonly used by gardeners or other persons for cleaning lawns, yards, driveways, gutters and other property shall only be allowed between the hours of 8:00 a.m. and 6:00 p.m. on a weekday and between the hours of 9:00 a.m. and 5:00 p.m. on Saturday or Sunday.

(d) No landowner, gardener, property maintenance service, contractor, subcontractor or employer shall permit or allow any person or persons working under his or her direction or control to operate any tool, equipment or machine in violation of the provisions of this section.

(e) Exceptions. The provisions of this section shall not apply to the following:

(1) Emergency property maintenance required by the building official;

(2) The maintenance, repair or improvement of any public work or facility by public employees, by any person or persons acting pursuant to a public works contract, or by any person or persons performing such work or pursuant to the direction of, or on behalf of, any public agency; provided, however, this exception shall not apply to the City, or its employees, contractors or agents, unless:

(i) The City Manager or department head determines that the maintenance, repair or improvement is immediately necessary to maintain public service,

(ii) The maintenance, repair or improvement is of a nature that cannot feasibly be conducted during normal business hours, or

(iii) The City Council has approved project specifications, contract provisions, or an environmental document that specifically authorizes maintenance during hours of the day that would otherwise be prohibited pursuant to this section; and

(3) Any maintenance that complies with the noise limits specified in § 5-29.04.

(§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.09. Construction activity noise regulations.

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

(b) No landowner, construction company owner, contractor, subcontractor, or employer shall permit or allow any person or persons working under their direction and control to operate any tool, equipment or machine in violation of the provisions of this section.

(c) Exceptions.

(1) The provisions of this section shall not apply to emergency construction work performed by a private party when authorized by the City Manager or his or her designee;

(2) The maintenance, repair or improvement of any public work or facility by public employees, by any person or persons acting pursuant to a public works contract, or by any person or persons performing such work or pursuant to the direction of, or on behalf of, any public agency; provided, however, this exception shall not apply to the City, or its employees, contractors or agents, unless:

(i) The City Manager or a department head determines that the maintenance, repair or improvement is immediately necessary to maintain public services,

(ii) The maintenance, repair or improvement is of a nature that cannot feasibly be conducted during normal business hours, or

(iii) The City Council has approved project specifications, contract provisions, or an environmental document that specifically authorizes construction during hours of the day that would otherwise be prohibited pursuant to this section; and

(3) Any construction that complies with the noise limits specified in §§ 5-29.04 or 5-29.05.

(§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.10. Other public agency exceptions.

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

(§ 2, Ord. 2888, eff. March 6, 2008)

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

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

(§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.12. Sound amplifying equipment.

Loudspeakers, sound amplifiers, public address systems or similar devices used to amplify sounds shall be subject to the provisions of § 5-29.13. Such sound amplifying equipment shall not be construed to include electronic devices, including but not limited to, radios, tape players, tape recorders, compact disc players, MP3 players, electric keyboards, music synthesizers, record players or televisions, which are designed and operated for personal use, or used entirely within a building and are not designed or used to convey the human voice, music or any other sound to an audience outside such building, or which are used in vehicles and heard only by occupants of the vehicle in which installed.

(§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.13. Amplified sound.

(a) The City Council enacts the following legislation for the sole purpose of securing and promoting the public health, comfort, safety and welfare for its citizenry. While recognizing that the use of sound amplifying equipment may be entitled to certain protection by the constitutional rights of freedom of speech and assembly, the City Council finds that in order to protect the public safety and the correlative rights of the citizens of this community to privacy and freedom from public nuisance of loud and unnecessary noise, reasonable regulation of the time, place and manner of the use of amplifying equipment is necessary. In no event shall approval or authorization required herein be withheld by reason of the constitutionally protected content of any material proposed to be broadcast through amplifying equipment.

(b) It is unlawful for any person, other than personnel of law enforcement or governmental agencies, to install, use or operate a loudspeaker or sound amplifying device in a fixed or movable position or mounted upon any vehicle within the City for the purpose of giving instructions, directions, talks, addresses or lectures to any persons or assemblages of persons in or upon any street, alley, sidewalk, park, place or public property without a permit to do so from the Police Chief or his or her designee. Notwithstanding any other provision of this chapter, the provisions of this section shall also apply to the use of sound amplifying equipment upon public or private property when used in connection with outdoor or indoor public or private events, whether or not admission is charged or food or beverages are sold, when such activity is to be attended by more than one hundred (100) persons and the noise emanating from the event will be audible at the property plane, or in the case of a street dance or concert on the nearest residential property. Those activities listed in § 5-29.06(a) are exempt from the requirements of this section.

(c) The Police Chief or his or her designee is authorized to approve and issue permits under this section.

(d) An application for a permit required by this section shall be filed with the Police Chief at least sixteen (16) days and no more than one hundred twenty (120) days prior to the date on which the sound amplifying equipment is intended to be used. Applications for events covered by the First Amendment of the United States Constitution are exempt from the time requirements of this section if it is shown that circumstances require a shorter filing period and the event will not constitute an unsafe condition. The application shall contain the following information:

(1) The name, address and telephone number of both the owner and the user of the sound amplifying equipment;

(2) The license number, if a sound truck is to be used;

(3) A general description of the sound amplifying equipment which is to be used;

(4) Whether sound amplifying equipment will be used for commercial or noncommercial purpose;

(5) The dates and times upon and within which, and the streets or property over or upon which, the equipment is proposed to be operated;

(6) The name or names of one (1) or more persons who will be present during the conduct of any activities for which registration is sought and who will have authority to reduce the volume of any sound amplifying equipment during the course of the activities if required pursuant to this chapter and, otherwise, to insure compliance with the provisions of this chapter;

(7) A statement by the applicant that he or she is willing and able to comply with the provisions of this chapter and the conditions of the permit; and

(8) A sketch of the area or facilities within which the activities are to be conducted, with approximate dimensions and illustration of the location and orientation of all sound-amplifying equipment.

(e) The Police Chief shall deny the permit application or revoke any permit if the chief finds any of the following:

(1) The application contains materially false or intentionally misleading information;

(2) The use of sound amplifying equipment at an event or activity proposed will be located in or upon a premises, building or structure that is hazardous to the health or safety of the employees or patrons of the premises, business, activity, or event, or the general public, under the standards established by the Uniform Building or Fire Codes, or other applicable codes, as set forth in OMC Titles 4 and 8;

(3) The use of sound amplifying equipment at an event or activity proposed in or upon a premises, building or structure that lacks adequate on-site parking for participants attending the proposed event or activity under the applicable standards set forth in OMC Title 9;

(4) The conditions of any motor vehicle movement are such that, in his or her opinion, the use of the equipment would constitute an unreasonable interference with traffic safety;

(5) The conditions of pedestrian movement are such that the use of the equipment would constitute a detriment to traffic safety;

(6) The application submitted by the applicant reveals that the applicant would violate the provisions of this section or any other provision of federal, state and/or local law;

(7) The applicant is unwilling or unable to comply with the provisions of this chapter or any conditions imposed upon any permit issued;

(8) There had already been a permitted event at the intended location, or within a two hundred (200) yard radius of the intended location and the prior permitted event was located on residentially zoned property or on a street, alley, public parking lot or neighborhood park within three (3) months prior to the intended event. Community parks are exempt from this subsection (8); or

(9) The applicant or location has had previous violations within the past calendar year, and in the judgment of the Police Chief, issuance would be contrary to the intent of this section.

(f) In determining whether the use of the equipment would constitute an unreasonable interference with or detriment to traffic safety, the Police Chief shall consider, but shall not necessarily be limited to:

(1) The volumes, patterns and speed of vehicular and pedestrian traffic in the proposed area of use;

(2) The relationship of the proposed use of equipment and potential impacts upon traffic patterns;

(3) Availability of sufficient room for the operation of the equipment without significantly interfering with the traffic patterns;

(4) Proximity to schools, playgrounds and similar facilities where use of such equipment might attract children into traffic patterns; or

(5) Proximity to busy intersections or other potentially hazardous conditions where use of such equipment might constitute a hazard by reason of its tendency to distract drivers of vehicles or pedestrians.

(g) Issuance or denial.

(1) If the application is approved, the Police Chief shall return an approved copy of the application to the applicant and shall issue a permit. The permit shall constitute permission for the use of the sound amplifying equipment as requested.

(2) Any application filed shall be either approved or disapproved within five (5) days of the filing thereof.

(3) If the application is disapproved, the Police Chief shall return a disapproved copy forthwith to the applicant with a written statement on the reason for disapproval.

(i) Any person aggrieved by a decision of the Police Chief or his or her designee may file an appeal to the City Manager. A complete and proper appeal shall be filed with the City Clerk within ten (10) calendar days of the action that is the subject of the appeal. If the applicant fails to file an appeal within the ten (10) day filing period provided herein, denial shall take effect immediately upon expiration of such filing period. All appeals shall be in writing and shall contain the following information: (a) name(s) of the person filing the appeal, (b) a brief statement in ordinary and concise language of the relief sought, and (c) the signatures of all parties named as appellants and their mailing addresses. After receiving the appeal, the City Clerk shall immediately forward the matter to the City Manager for handling.

(ii) The City Manager shall, upon receipt of the appeal, set the matter for hearing before the City Manager or a hearing officer. Any hearing officer shall be a licensed attorney or recognized mediator designated by the City Manager. The hearing shall be set for not more than ten (10) calendar days after the

receipt of the appeal unless a longer time is requested or consented to by the appellant. Notice of such hearing shall be given in writing and mailed at least five (5) calendar days prior to the date of the hearing, by U.S. mail, with a proof of service attached, addressed to the address listed on the permit application, or the written appeal if different from the permit application. The notice shall state the grounds of the complaint or reason for the denial and shall state the time and place where such hearing will be held.

(iii) The City Manager or hearing officer shall, within ten (10) calendar days following the conclusion of the hearing, make a written finding and decision, which shall be delivered to the City and the appellant by first class mail. Notwithstanding any provision in this Code, the decision of the City Manager or hearing officer shall be the final administrative decision of the City. Any party dissatisfied with the decision of the City Manager or hearing officer may seek review of such decision under the provisions of Code Civil Procedure, §§ 1094.5 and 1094.8, as amended from time to time.

(h) In addition to any other provisions of this Code, the use of sound-amplifying equipment and sound trucks in the City shall be subject to the following regulations:

(1) The only sounds permitted are music and human speech;

(2) Sound shall not be emitted within one hundred (100) yards of hospitals, churches, schools and City Hall;

(3) The volume of sound shall be controlled so that it will not be audible for a distance in excess of one hundred (100) feet from the sound amplifying equipment or sound truck, and so that the volume is not unreasonably loud, raucous, jarring, disturbing or a nuisance to persons within the range of allowed audibility; or

(4) The sound amplifying equipment or sound truck shall not be used between the hours of 8:00 p.m. and 8:00 a.m.

(§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.14. Motor vehicles.

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

(§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.15. Noise level measurement.

(a) The location selected for measuring exterior noise levels in a residential area shall be at any part of a private yard, patio, deck or balcony normally used for human activity and identified by the owner or, if occupied by someone other than the owner, the occupant of the affected property as suspected of exceeding the noise level standard. This location may be the closest point in the private yard or patio, or on the deck or balcony, to the noise source, but should not be located in nonhuman activity areas such as trash container storage areas, planter beds, above or contacting a property line fence, or other areas not normally used as part of the yard, patio, deck or balcony. The location selected for measuring exterior noise levels in a nonresidential area shall be at the closest point to the noise source. The measurement microphone height shall be five (5) feet above finish elevation or, in the case of a deck or balcony, the measurement microphone height shall be five (5) feet above the finished floor level.

(b) The location selected for measuring interior noise levels shall be made within the affected residential unit. The measurements shall be made at a point at least four (4) feet from the wall, ceiling or floor, or within the frame of a window opening, nearest the noise source. The measurements shall be made with windows in an open position.

(c) Any decibel measurement made pursuant to the provisions of this chapter shall be measured in decibels (dBAs) as measured with a sound level meter using the A-weighted sound pressure level.

(§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.16. Prima facie violation.

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

(§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.17. Penalty.

(a) Any person who negligently or knowingly violates any provision of this chapter shall be guilty of an infraction and upon conviction shall be punishable by a fine specified in OMC § 1-2.01. Each day a violation occurs shall constitute a separate offense and shall be punishable as such.

(b) Any person who negligently or knowingly violates any provision of this chapter may also be subject to fine(s) specified in the administrative citation schedule of fines set forth in OMC § 1-5.04. The manner of issuing administrative citations shall comply with all the procedures specified in OMC Chapter 5, Title 1.

(c) As an additional remedy, the operation or maintenance of any device, instrument, vehicle or machinery in violation of any provisions of this chapter, which operation or maintenance causes or creates sound levels exceeding the allowable standards as specified in this chapter, shall be deemed and is declared to be a public nuisance and may be subject to abatement by a restraining order or injunction issued by a court of competent jurisdiction.

(d) Any violation of this chapter is declared to be a public nuisance and may be abated in accordance with law. The expense of enforcing this chapter is declared to be public nuisance and may be by resolution of the City Council declared to be a lien and special assessment against the property on which such nuisance is maintained, and any such charge shall also be a personal obligation of the property owner.

(§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.18. Enforcement and administration.

(a) It shall be the responsibility of Police or Code Enforcement Officers to enforce the provisions of this chapter and to perform all other functions required by this chapter. Such duties shall include, but not be limited to investigating potential violations, issuing warning notices and citations, and providing evidence to the City prosecutor for legal action.

(b) For violations of § 5-29.07, Police or Code Enforcement Officers shall obtain a declaration under penalty of perjury from two (2) declarants living in separate households within a sixty (60) day period stating in detail all of the following:

(1) That the declarant is a resident of a residential neighborhood located within two hundred (200) yards of the noise source; and

(2) Within the past month declarant has heard noise for substantially long periods to the extreme annoyance of the declarant.

(3) Declarations from two (2) declarants are required to prove a violation of § 5-29.07, but are not required to prove that a person has violated any other provision of this chapter.

(§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.19. City Manager waiver.

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

(§ 2, Ord. 2888, eff. March 6, 2008)

Sec. 5-29.20. Noise abatement program.

(a) In circumstances where adopted community-wide noise standards and policies prove impractical in controlling noise generated from a specific source, the City Council may establish a noise abatement program that recognizes the characteristics of the noise source and affected property and that incorporates specialized mitigation measures.

(b) Noise abatement programs shall set forth in detail the approved terms, conditions and requirements for achieving maximum compliance with noise standards and policies. Said terms, conditions and requirements may include, but shall not be limited to, limitations, restrictions, or prohibitions on operating hours, location of operations, and the types of equipment.

(§ 2, Ord. 2888, eff. March 6, 2008)

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APPENDIX 3.2:

CITY OF CHINO MUNICIPAL CODE

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Chapter 9.40 - NOISE*

Sections:

9.40.010 - Definitions.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(Ord. 95-10 § 1 (part), 1995.)

9.40.020 - Decibel measurement criteria.

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

(Ord. 95-10 § 1 (part), 1995.)

9.40.030 - Designated noise zones.

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

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

Noise Zone II: All commercial properties.

Noise Zone III: All manufacturing or industrial properties.

(Ord. 95-10 § 1 (part), 1995.)

9.40.040 - Exterior noise standards.

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

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

City of Chino Exterior Noise Ordinance

Criteria for Residential Properties (Zone 1)

Maximum Time of Exposure	Noise

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

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

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

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

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

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

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

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

(Ord. 95-10 § 1 (part), 1995.)

9.40.050 - Interior noise standards.

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

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

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

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

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

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

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

(Ord. 95-10 § 1 (part), 1995.)

9.40.060 - Special provisions.

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

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

B. Occasional outdoor gatherings, public dances, show, sporting and entertainment events, provided said events are conducted pursuant to a permit or license issued by the appropriate jurisdiction relative to the staging of said events. Such permits and licenses may restrict noise;

C. Any mechanical device, apparatus or equipment used, related to or connected with emergency machinery, vehicle, work or warning alarm or bell, provided the sounding of any bell or alarm on any building or motor vehicle shall terminate its operation within thirty minutes in any hour of its being activated;

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

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

1. Operations do not take place between eight p.m. and seven a.m. on weekdays, including Saturday, or at any time Sunday or a Federal holiday, or
2. Such operations and equipment are utilized for the protection of salvage of agricultural crops during periods of potential or actual frost damage or other adverse weather conditions, or
3. Such operations and equipment are associated with agricultural pest control through pesticide application, provided the application is made in accordance with permits issued by or regulations enforced by the California Department of Agriculture,
4. Noise sources associated with the maintenance of real property, provided said activities take place between the hours of seven a.m. to eight p.m. on any day except Sunday, or between the hours of nine a.m. and eight p.m. on Sunday,
5. Any activity to the extent regulation thereof has been preempted by state or federal law.

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

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

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

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

(Ord. 95-10 § 1 (part), 1995.)

9.40.080 - Air conditioning and refrigeration—Special provisions.

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

(Ord. 95-10 § 1 (part), 1995.)

9.40.090 - Noise sources generated on publicly owned property.

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

A. As used herein, "a person of normal hearing sensitivity" means a person who has a hearing threshold level of between zero decibels and twenty-five decibels HL averaged over the frequencies 500, 1,000 and 2,000 Hertz.
B. Notwithstanding any other provision of this code, any person violating this section shall be guilty of an infraction and upon conviction thereof, is punishable by a fine not exceeding fifty dollars, for a first violation; a fine not exceeding one hundred dollars for a second violation of this section within one year; a fine not exceeding two hundred fifty dollars for each additional violation of this section within one year. A person who violates the provisions of this section shall be deemed to be guilty of a separate offense for each day, or portion thereof, during which the violation continues or is repeated.
C. Notwithstanding any other provision of this code, no citation or notice to appear shall be issued or criminal complaint shall be filed for a violation of this section unless the offending party is first given a verbal or written notification of violation by any peace officer, public officer, park ranger or

other person charged with enforcing this section and the offending party given an opportunity to correct said violation.

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

(Ord. 95-10 § 1 (part), 1995.)

9.40.100 - Noise level measurement.

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

(Ord. 95-10 § 1 (part), 1995.)

9.40.110 - Vibration.

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

(Ord. 95-10 § 1 (part), 1995.)

9.40.120 - Proposed developments.

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

(Ord. 95-10 § 1 (part), 1995.)

APPENDIX 3.3:

CITY OF EASTVALE MUNICIPAL CODE

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CHAPTER 8.52. - NOISE REGULATION

Sec. 8.52.010. - Reserved.

Sec. 8.52.020. - Exemptions.

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

(1) Facilities owned or operated by or for a governmental agency;

(2) Capital improvement projects of a governmental agency;

(3) The maintenance or repair of public properties;

(4) Public safety personnel in the course of executing their official duties, including, but not limited to, sworn peace officers, emergency personnel and public utility personnel. This exemption includes, without limitation, sound emanating from all equipment used by such personnel, whether stationary or mobile;

(5) Public or private schools and school-sponsored activities;

(6) Agricultural operations on land designated agriculture in the city general plan, or land zoned A-l (light agriculture), A-P (light agriculture with poultry), A-2 (heavy agriculture), A-D (agriculture-dairy) or C/V (citrus/vineyard), provided such operations are carried out in a manner consistent with accepted industry standards. This exemption includes, without limitation, sound emanating from all equipment used during such operations, whether stationary or mobile;

(7) Wind energy conversion systems (WECS), provided such systems comply with the WECS noise provisions of county Ordinance No. 348;

(8) Private construction projects located one-quarter of a mile or more from an inhabited dwelling;

(9) Private construction projects located within one-quarter of a mile from an inhabited dwelling, provided that construction does not occur between the hours of:

a. 6:00 p.m. and 6:00 a.m. during the months of June through September; and

b. 6:00 p.m. and 7:00 a.m. during the months of October through May;

(10) Property maintenance, including, but not limited to, the operation of lawnmowers, leaf blowers, etc., provided such maintenance occurs between the hours of 7:00 a.m. and 8:00 p.m.;

(11) Motor vehicles, other than off-highway vehicles. This exemption does not include sound emanating from motor vehicle sound systems;

(12) Heating and air conditioning equipment;

(13) Safety, warning and alarm devices, including, but not limited to, house and car alarms, and other warning devices that are designed to protect the public health, safety and welfare;

(14) The discharge of firearms consistent with all state laws.

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

Sec. 8.52.030. - Definitions.

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

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

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

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

(2) The term "maximum sound level (Lmax)" means the maximum sound level measured on a sound level meter.

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

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

Motor vehicle means a vehicle that is self-propelled.

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

Noise means any loud, discordant or disagreeable sound.

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

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

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

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

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

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

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

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

Sec. 8.52.040. - General sound level standards.

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

TABLE 1. SOUND LEVEL STANDARDS (dB Lmax)

General Plan Foundation Component				Maximum Decibel Level	
Land Use Designation General Plan		Land Use Designation Name	Density	7:00 a.m. — 10:00 p.m.	10:00 p.m.— 7:00 a.m.
Community development					
	EDR	Estate density residential	2 acres	55	45
	VLDR	Very low-density residential	1 acre	55	45
	LDR	Low-density residential	½ acre	55	45
	MDR	Medium-density residential	2—5	55	45
	MHDR	Medium high-density residential	5—8	55	45

	HDR	High-density residential	8—14	55	45
	VHDR	Very high-density residential	14—20	55	45
	H'TDR	Highest density residential	20+	55	45
	CR	Retail commercial		65	55
	CO	Office commercial		65	55
	CT	Tourist commercial		65	55
	CC	Community center		65	55
	LI	Light industrial		75	55
	HI	Heavy industrial		75	75
	BP	Business park		65	45
	PF	Public facility		65	45
	SP	Specific plan-residential		55	45
		Specific plan-commercial		65	55
		Specific plan-light industrial		75	55
		Specific plan-heavy industrial		75	75
Rural community					
	EDR	Estate density residential	2 acres	55	45
	VLDR	Very low-density residential	1 acre	55	45
	LDR	Low-density residential	½ acre	55	45

Rural					
	RR	Rural residential	5 acres	45	45
	RM	Rural mountainous	10 acres	45	45
	RD	Rural desert	10 acres	45	45
Agriculture					
	AG	Agriculture	10 acres	45	45
Open space					
	C	Conservation		45	45
	CH	Conservation habitat		45	45
	REC	Recreation		45	45
	RUR	Rural	20 acres	45	45
	W	Watershed		45	45
	MR	Mineral resources		75	45

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

Sec. 8.52.050. - Sound level measurement methodology.

Sound level measurements may be made anywhere within the boundaries of an occupied property. The actual location of a sound level measurement shall be at the discretion of the enforcement officials identified in section 8.52.080. Sound level measurements shall be made with a sound level meter. Immediately before a measurement is made, the sound level meter shall be calibrated utilizing an acoustical

calibrator meeting the standards of the American National Standards Institute. Following a sound level measurement, the calibration of the sound level meter shall be reverified. Sound level meters and calibration equipment shall be certified annually.

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

Sec. 8.52.060. - Special sound sources standards.

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

(1) *Motor vehicles.*

a. *Off-highway vehicles.*

1. No person shall operate an off-highway vehicle unless it is equipped with a USDA-qualified spark arrester and a constantly operating and properly maintained muffler. A muffler is not considered constantly operating and properly maintained if it is equipped with a cutout, bypass or similar device.
2. No person shall operate an off-highway vehicle unless the noise emitted by the vehicle is not more than 96 dBA if the vehicle was manufactured on or after January 1, 1986, or is not more than 101 dBA if the vehicle was manufactured before January 1, 1986. For purposes of this subsection, emitted noise shall be measured a distance of 20 inches from the vehicle tailpipe using test procedures established by the Society of Automotive Engineers under Standard J-1287.

b. *Sound systems.* No person shall operate a motor vehicle sound system, whether affixed to the vehicle or not, between the hours of 10:00 p.m. and 8:00 a.m., such that the sound system is audible to the human ear inside any inhabited dwelling. No person shall operate a motor vehicle sound system, whether affixed to the vehicle or not, at any other time such that the sound system is audible to the human ear at a distance greater than 100 feet from the vehicle.

(2) *Power tools and equipment.* No person shall operate any power tools or equipment between the hours of 10:00 p.m. and 8:00 a.m. such that the power tools or equipment are audible to the human ear inside an inhabited dwelling other than a dwelling in which the power tools or equipment may be located. No person shall operate any power tools or equipment at any other time such that the power tools or equipment are audible to the human ear at a distance greater than 100 feet from the power tools or equipment.

(3)

Audio equipment. No person shall operate any audio equipment, whether portable or not, between the hours of 10:00 p.m. and 8:00 a.m. such that the equipment is audible to the human ear inside an inhabited dwelling other than a dwelling in which the equipment may be located. No person shall operate any audio equipment, whether portable or not, at any other time such that the equipment is audible to the human ear at a distance greater than 100 feet from the equipment.

(4) *Sound-amplifying equipment and live music.* No person shall install, use or operate sound-amplifying equipment, or perform, or allow to be performed, live music unless such activities comply with the following requirements. To the extent that these requirements conflict with any conditions of approval attached to an underlying land use permit, these requirements shall control:

a. Sound-amplifying equipment or live music is prohibited between the hours of 10:00 p.m. and 8:00 a.m.

b. Sound emanating from sound-amplifying equipment or live music at any other time shall not be audible to the human ear at a distance greater than 200 feet from the equipment or music.

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

Sec. 8.52.070. - Exceptions.

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

(1) *Application and processing.*

a. *Construction-related exceptions.* An application for a construction-related exception shall be made to and considered by the city on forms provided by the city and shall be accompanied by the appropriate filing fee. No public hearing is required.

b. *Single-event exceptions.* An application for a single-event exception shall be made to and considered by the city on forms provided by the planning department and shall be accompanied by the appropriate filing fee. No public hearing is required.

c. *Continuous-event exceptions.* An application for a continuous-event exception shall be made to the city on forms provided by the planning department and shall be accompanied by the appropriate filing fee. Upon receipt of an application for a continuous-event exception, the city shall set the matter for public hearing before the planning commission, notice of which shall be given as provided in the Eastvale Municipal Code. Notwithstanding the exceptions set forth in this section, an application for a continuous-event exception that is associated with an application for a land use permit shall be processed concurrently with the land use permit in the same manner that the land use permit is required to be processed.

(2) *Requirements for approval.* The appropriate decision making body or officer shall not approve an exception application unless the applicant demonstrates that the activities described in the application would not be detrimental to the health, safety or general welfare of the community. In

determining whether activities are detrimental to the health, safety or general welfare of the community, the appropriate decision-making body or officer shall consider such factors as the proposed duration of the activities and their location in relation to sensitive receptors. If an exception application is approved, reasonable conditions may be imposed to minimize the public detriment, including, but not limited to, restrictions on sound level, sound duration and operating hours.

(3) *Appeals.* The city's decision on an application for a construction-related exception is considered final. The city's decision on an application for a single-event exception is considered final. After making a decision on an application for a continuous-event exception, the appropriate decision-making body or officer shall mail notice of the decision to the applicant. Within ten calendar days after the mailing of such notice, the applicant or an interested person may appeal the decision to the city council. Upon receipt of an appeal and payment of the appropriate appeal fee, the city clerk shall set the matter for hearing not less than five days nor more than 30 days thereafter and shall give written notice of the hearing in the same manner as notice of the hearing was given by the appropriate hearing officer or body. The city council shall render its decision within 30 days after the appeal hearing is closed.

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

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

Sec. 8.52.080. - Enforcement.

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

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

Sec. 8.52.090. - Duty to cooperate.

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

emanating from the source violates the provisions of this chapter.

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

Sec. 8.52.100. - Violations and penalties.

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

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

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

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APPENDIX 5.1:

STUDY AREA PHOTOS

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L1
33, 58' 58.420000", 117, 36' 9.800000"

L1_N
33, 58' 58.420000", 117, 36' 9.770000"

L1_S
33, 58' 58.420000", 117, 36' 9.770000"

L1_W
33, 58' 58.390000", 117, 36' 9.740000"

L2
33, 58' 58.050000", 117, 35' 45.550000"

L2_E
33, 58' 58.260000", 117, 35' 45.440000"

L2_N
33, 58' 58.260000", 117, 35' 45.440000"

L2_S
33, 58' 58.240000", 117, 35' 45.470000"

L2_W
33, 58' 58.260000", 117, 35' 45.440000"

L3
33, 58' 57.410000", 117, 35' 33.440000"

L3_E
33, 58' 57.350000", 117, 35' 33.520000"

L3_N
33, 58' 57.350000", 117, 35' 33.520000"

L3_W
33, 58' 57.460000", 117, 35' 33.650000"

L4
33, 58' 53.550000", 117, 35' 34.780000"

L4_E
33, 58' 53.630000", 117, 35' 35.190000"

L4_N
33, 58' 53.660000", 117, 35' 34.780000"

L4_S
33, 58' 53.550000", 117, 35' 34.780000"

L4_W
33, 58' 53.680000", 117, 35' 34.860000"

L5
33, 58' 39.280000", 117, 35' 37.060000"

L5_E
33, 58' 39.280000", 117, 35' 37.060000"

L5_N
33, 58' 39.280000", 117, 35' 37.060000"

L5_S
33, 58' 39.280000", 117, 35' 37.060000"

L5_W
33, 58' 39.280000", 117, 35' 37.060000"

L6
33, 58' 31.720000", 117, 36' 3.980000"

L6_E
33, 58' 31.720000", 117, 36' 3.980000"

L6_N
33, 58' 31.720000", 117, 36' 3.980000"

L6_S
33, 58' 31.720000", 117, 36' 3.980000"

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APPENDIX 5.2:

NOISE LEVEL MEASUREMENT WORKSHEETS

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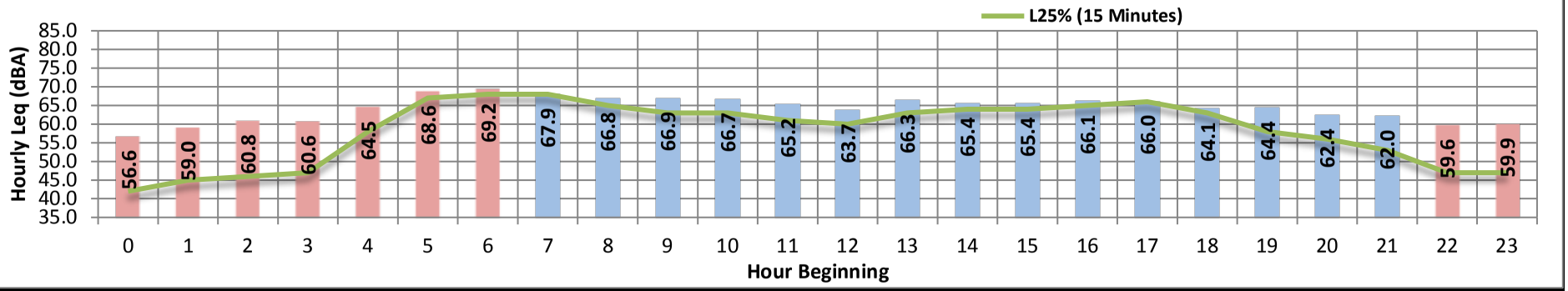
24-Hour Noise Level Measurement Summary

				Energy Average Leq		24-Hour
Project Name:	Colony Commerce Center East	*JN:*	1524	*Day*	*Night*	*CNEL*
Location:	L1 - Located west of the Project site on Merrill Avenue adjacent to existing agricultural land use.	*Analyst:*	A. Wolfe	65.6	64.2	71.1
		Date:	1/25/2017			

Hourly Leq dBA Readings (unadjusted)



Time Period	*Hour*	*Leq*	*Lmax*	*Lmin*	*L1%*	*L2%*	*L5%*	*L8%*	*L25%*	*L50%*	*L90%*	*L95%*	*L99%*
Day	Min	62.0	82.3	40.3	75.0	71.0	67.0	65.0	53.0	47.0	43.0	42.0	41.0
	Max	67.9	90.5	48.2	78.0	76.0	73.0	72.0	68.0	60.0	51.0	50.0	49.0
Energy Average:		65.6	Average:		76.5	74.3	70.7	68.7	62.1	53.7	45.4	44.4	43.3
Night	Min	56.6	82.8	37.5	68.0	64.0	54.0	49.0	42.0	40.0	38.0	38.0	38.0
	Max	69.2	94.4	48.1	80.0	78.0	75.0	73.0	68.0	60.0	51.0	50.0	48.0
Energy Average:		64.2	Average:		74.3	71.0	65.9	61.7	51.9	46.6	42.3	42.0	41.3
Hourly Summary													
Night	0	56.6	84.3	37.9	68.0	64.0	54.0	49.0	42.0	40.0	38.0	38.0	38.0
	1	59.0	83.2	37.5	73.0	69.0	61.0	55.0	45.0	41.0	38.0	38.0	38.0
	2	60.8	82.8	37.8	75.0	71.0	66.0	61.0	46.0	41.0	38.0	38.0	38.0
	3	60.6	83.8	39.6	74.0	71.0	66.0	60.0	47.0	44.0	41.0	40.0	39.0
	4	64.5	86.8	42.1	76.0	73.0	71.0	69.0	58.0	48.0	44.0	44.0	43.0
	5	68.6	94.4	44.7	79.0	76.0	73.0	71.0	67.0	56.0	48.0	47.0	46.0
	6	69.2	88.2	48.1	80.0	78.0	75.0	73.0	68.0	60.0	51.0	50.0	48.0
Day	7	67.9	86.6	48.2	78.0	76.0	73.0	72.0	68.0	60.0	51.0	50.0	49.0
	8	66.8	85.2	43.2	78.0	76.0	73.0	71.0	65.0	55.0	46.0	45.0	44.0
	9	66.9	88.9	42.6	78.0	76.0	72.0	70.0	63.0	53.0	45.0	44.0	43.0
	10	66.7	89.0	40.9	78.0	76.0	72.0	70.0	63.0	52.0	45.0	44.0	43.0
	11	65.2	88.4	41.8	76.0	74.0	70.0	68.0	61.0	52.0	44.0	43.0	42.0
	12	63.7	83.9	41.0	75.0	73.0	70.0	67.0	60.0	51.0	44.0	42.0	41.0
	13	66.3	87.8	41.7	78.0	76.0	72.0	69.0	63.0	54.0	45.0	44.0	43.0
	14	65.4	84.1	41.0	77.0	75.0	71.0	69.0	64.0	56.0	45.0	43.0	42.0
	15	65.4	85.1	40.3	76.0	74.0	71.0	69.0	64.0	57.0	45.0	44.0	42.0
	16	66.1	83.7	43.9	77.0	75.0	71.0	70.0	65.0	60.0	47.0	46.0	45.0
	17	66.0	85.5	45.8	76.0	74.0	71.0	70.0	66.0	59.0	48.0	47.0	46.0
	18	64.1	82.3	42.0	75.0	73.0	70.0	68.0	63.0	52.0	46.0	45.0	43.0
	19	64.4	90.5	41.5	76.0	73.0	69.0	67.0	58.0	49.0	44.0	43.0	42.0
	20	62.4	83.1	41.9	75.0	72.0	68.0	66.0	56.0	48.0	43.0	43.0	42.0
	21	62.0	86.6	41.7	75.0	71.0	67.0	65.0	53.0	47.0	43.0	43.0	42.0
Night	22	59.6	84.7	41.1	72.0	69.0	64.0	59.0	47.0	45.0	42.0	42.0	42.0
	23	59.9	84.5	39.9	72.0	68.0	63.0	58.0	47.0	44.0	41.0	41.0	40.0

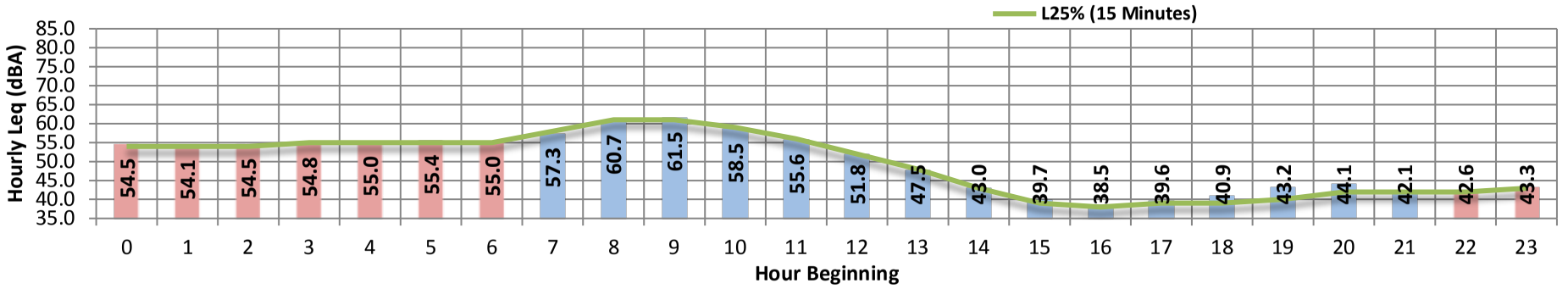
URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

				Energy Average Leq	
Project Name:	Colony Commerce Center East	*JN:*	1524	*Day*	*Night*
Location:	L2 - Located north of the Project site adjacent to an existing residential home on agricultural land use.	*Analyst:*	A. Wolfe	54.8	53.8
		Date:	1/25/2017		

24-Hour CNEL
60.4

Hourly Leq dBA Readings (unadjusted)



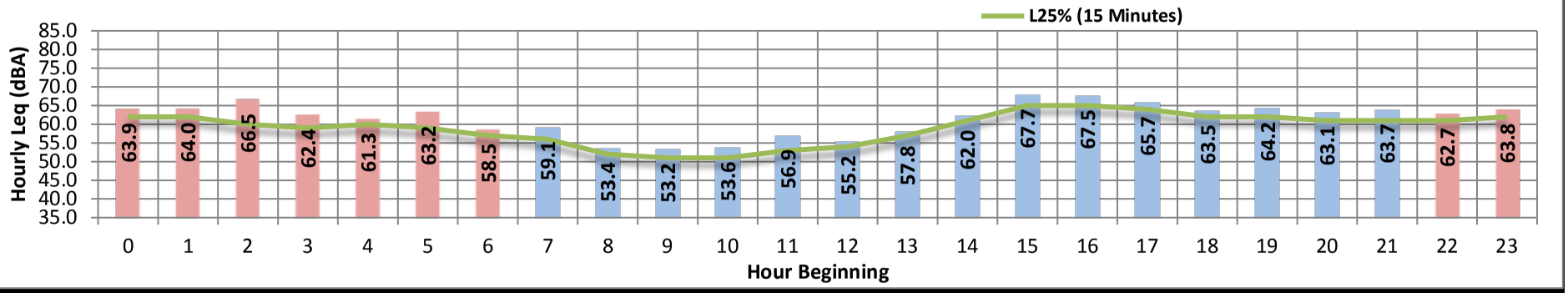
Time Period	*Hour*	*Leq*	*Lmax*	*Lmin*	*L1%*	*L2%*	*L5%*	*L8%*	*L25%*	*L50%*	*L90%*	*L95%*	*L99%*
Day	Min	38.5	50.4	36.6	44.0	42.0	40.0	40.0	38.0	37.0	36.0	36.0	36.0
	Max	61.5	72.4	60.7	62.0	62.0	62.0	62.0	61.0	61.0	61.0	61.0	60.0
Energy Average:		54.8	Average:		51.5	50.5	49.5	49.1	47.8	47.0	45.8	45.5	45.5
Night	Min	42.6	53.8	41.7	45.0	44.0	43.0	42.0	42.0	42.0	42.0	42.0	42.0
	Max	55.4	69.5	54.6	56.0	56.0	55.0	55.0	55.0	55.0	55.0	55.0	54.0
Energy Average:		53.8	Average:		53.1	52.7	52.2	52.0	51.9	51.8	51.3	51.2	51.1
Hourly Summary													
Night	0	54.5	57.5	53.8	55.0	55.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0
	1	54.1	58.7	53.4	55.0	54.0	54.0	54.0	54.0	54.0	53.0	53.0	53.0
	2	54.5	60.1	53.6	55.0	55.0	55.0	55.0	54.0	54.0	54.0	53.0	53.0
	3	54.8	69.5	54.0	55.0	55.0	55.0	55.0	55.0	54.0	54.0	54.0	54.0
	4	55.0	60.8	54.0	56.0	55.0	55.0	55.0	55.0	55.0	54.0	54.0	54.0
	5	55.4	66.7	54.6	56.0	56.0	55.0	55.0	55.0	55.0	55.0	55.0	54.0
	6	55.0	60.0	54.1	56.0	56.0	55.0	55.0	55.0	55.0	54.0	54.0	54.0
Day	7	57.3	66.6	54.8	59.0	59.0	59.0	59.0	58.0	56.0	55.0	55.0	55.0
	8	60.7	61.8	59.1	61.0	61.0	61.0	61.0	61.0	60.0	59.0	59.0	59.0
	9	61.5	62.7	60.7	62.0	62.0	62.0	62.0	61.0	61.0	61.0	61.0	60.0
	10	58.5	61.1	56.2	60.0	60.0	60.0	60.0	59.0	58.0	56.0	56.0	56.0
	11	55.6	58.9	52.8	57.0	57.0	57.0	56.0	56.0	55.0	53.0	53.0	53.0
	12	51.8	57.2	48.2	54.0	53.0	53.0	53.0	52.0	51.0	49.0	48.0	48.0
	13	47.5	58.0	43.0	50.0	49.0	49.0	49.0	48.0	47.0	44.0	43.0	43.0
	14	43.0	56.0	39.6	47.0	46.0	45.0	45.0	43.0	42.0	40.0	40.0	40.0
	15	39.7	53.2	37.1	44.0	43.0	41.0	41.0	39.0	39.0	38.0	37.0	37.0
	16	38.5	50.4	36.6	44.0	42.0	40.0	40.0	38.0	37.0	36.0	36.0	36.0
	17	39.6	61.8	37.2	44.0	42.0	41.0	40.0	39.0	38.0	37.0	37.0	37.0
	18	40.9	66.2	38.5	47.0	45.0	42.0	41.0	39.0	39.0	39.0	38.0	38.0
	19	43.2	72.4	39.4	48.0	45.0	42.0	41.0	40.0	40.0	39.0	39.0	39.0
	20	44.1	67.5	40.1	51.0	49.0	48.0	47.0	42.0	41.0	40.0	40.0	40.0
	21	42.1	52.5	41.0	45.0	44.0	42.0	42.0	42.0	41.0	41.0	41.0	41.0
Night	22	42.6	53.8	41.7	45.0	44.0	43.0	42.0	42.0	42.0	42.0	42.0	42.0
	23	43.3	54.7	42.0	45.0	44.0	44.0	43.0	43.0	43.0	42.0	42.0	42.0

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

Project Name:	Colony Commerce Center East	*JN:*	1524	*Energy Average Leq*	*24-Hour*
		Analyst:	A. Wolfe	*Day* / *Night*	*CNEL*
Location:	L3 - Located east of the Project site on Merrill Avenue adjacent to existing residential homes.	*Date:*	1/25/2017	62.9 / 63.4	70.0

Hourly Leq dBA Readings (unadjusted)



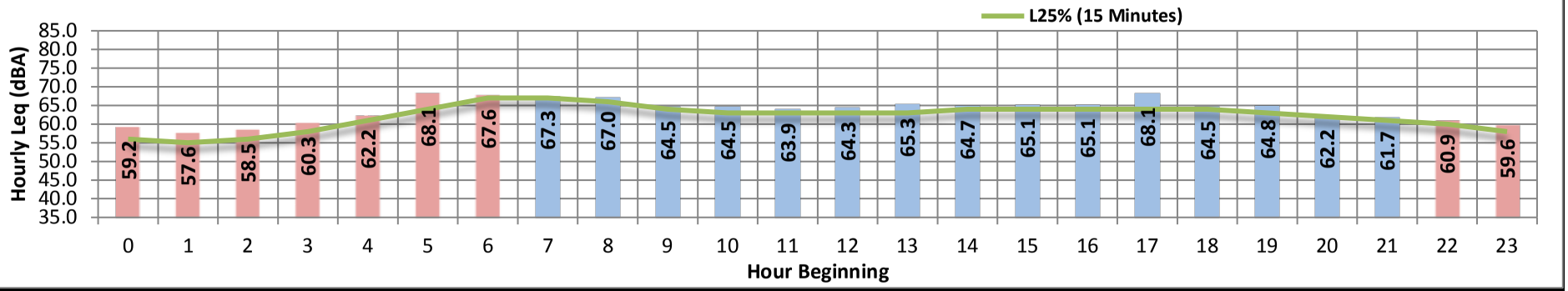
Time Period	*Hour*	*Leq*	*Lmax*	*Lmin*	*L1%*	*L2%*	*L5%*	*L8%*	*L25%*	*L50%*	*L90%*	*L95%*	*L99%*
Day	Min	53.2	69.5	40.8	64.0	61.0	58.0	57.0	51.0	46.0	41.0	41.0	40.0
	Max	67.7	88.2	55.6	79.0	76.0	73.0	71.0	65.0	62.0	59.0	58.0	57.0
Energy Average:		62.9	Average:		70.9	68.3	65.2	63.5	58.3	54.5	50.0	49.2	47.8
Night	Min	58.5	78.3	43.6	69.0	67.0	63.0	61.0	57.0	53.0	47.0	46.0	45.0
	Max	66.5	96.2	51.2	75.0	71.0	68.0	67.0	62.0	59.0	55.0	54.0	53.0
Energy Average:		63.4	Average:		71.9	69.7	66.7	65.0	60.2	57.0	51.4	50.0	48.6
Hourly Summary													
Night	0	63.9	87.1	48.8	73.0	71.0	68.0	67.0	62.0	59.0	54.0	52.0	50.0
	1	64.0	86.9	48.5	73.0	71.0	68.0	66.0	62.0	59.0	53.0	51.0	50.0
	2	66.5	96.2	47.4	75.0	71.0	68.0	66.0	60.0	57.0	52.0	50.0	48.0
	3	62.4	85.0	45.5	71.0	69.0	66.0	64.0	59.0	56.0	49.0	48.0	46.0
	4	61.3	79.2	45.5	71.0	69.0	67.0	65.0	60.0	56.0	49.0	48.0	47.0
	5	63.2	91.9	44.2	70.0	69.0	65.0	64.0	59.0	55.0	49.0	47.0	45.0
	6	58.5	78.3	43.6	69.0	67.0	63.0	61.0	57.0	53.0	47.0	46.0	45.0
Day	7	59.1	85.2	42.0	68.0	65.0	63.0	61.0	56.0	51.0	45.0	44.0	42.0
	8	53.4	69.5	41.4	65.0	62.0	59.0	57.0	52.0	47.0	43.0	42.0	41.0
	9	53.2	75.3	40.8	64.0	61.0	58.0	57.0	51.0	46.0	41.0	41.0	40.0
	10	53.6	70.3	40.8	65.0	62.0	59.0	57.0	51.0	47.0	42.0	42.0	41.0
	11	56.9	76.1	41.1	70.0	65.0	61.0	59.0	53.0	47.0	42.0	42.0	41.0
	12	55.2	71.8	42.6	65.0	63.0	61.0	59.0	54.0	50.0	45.0	44.0	43.0
	13	57.8	73.7	45.6	68.0	65.0	62.0	61.0	57.0	53.0	49.0	47.0	47.0
	14	62.0	81.3	48.6	73.0	70.0	66.0	64.0	61.0	57.0	51.0	51.0	49.0
	15	67.7	88.2	52.5	79.0	76.0	73.0	71.0	65.0	62.0	56.0	55.0	53.0
	16	67.5	86.5	55.6	79.0	76.0	72.0	70.0	65.0	62.0	59.0	58.0	57.0
	17	65.7	87.0	55.1	74.0	73.0	70.0	69.0	64.0	62.0	59.0	58.0	57.0
	18	63.5	87.4	52.5	72.0	71.0	68.0	66.0	62.0	59.0	55.0	55.0	53.0
	19	64.2	83.1	46.6	74.0	72.0	70.0	68.0	62.0	58.0	54.0	52.0	50.0
	20	63.1	81.5	49.9	73.0	71.0	68.0	66.0	61.0	58.0	55.0	54.0	52.0
	21	63.7	81.6	48.8	75.0	72.0	68.0	67.0	61.0	58.0	54.0	53.0	51.0
Night	22	62.7	83.2	51.2	71.0	69.0	67.0	65.0	61.0	59.0	55.0	54.0	53.0
	23	63.8	82.3	50.9	74.0	71.0	68.0	67.0	62.0	59.0	55.0	54.0	53.0

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

Project Name:	Colony Commerce Center East	*JN:*	1524	*Energy Average Leq*	*24-Hour*
Location:	L4 - Located east of the Project site across Archibald Avenue adjacent to existing residential homes.	*Analyst:*	A. Wolfe	*Day* / *Night*	*CNEL*
		Date:	1/25/2017	65.2 / 63.3	70.3

Hourly Leq dBA Readings (unadjusted)



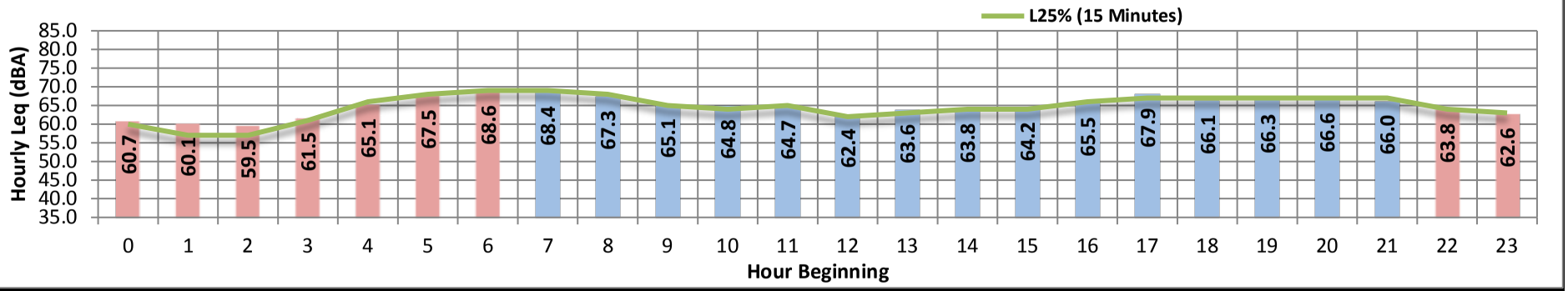
Time Period	*Hour*	*Leq*	*Lmax*	*Lmin*	*L1%*	*L2%*	*L5%*	*L8%*	*L25%*	*L50%*	*L90%*	*L95%*	*L99%*
Day	Min	61.7	80.3	51.2	72.0	69.0	66.0	65.0	61.0	58.0	53.0	53.0	52.0
	Max	68.1	92.8	55.6	77.0	74.0	71.0	70.0	67.0	64.0	60.0	59.0	57.0
Energy Average:		65.2	Average:		74.0	71.7	68.7	67.3	63.7	60.9	56.5	55.4	53.9
Night	Min	57.6	77.4	50.4	67.0	65.0	61.0	60.0	55.0	53.0	51.0	51.0	51.0
	Max	68.1	94.4	55.1	78.0	75.0	72.0	70.0	67.0	64.0	60.0	59.0	57.0
Energy Average:		63.3	Average:		71.0	68.4	65.2	63.7	59.4	56.1	53.2	52.7	52.1
Hourly Summary													
Night	0	59.2	86.5	50.4	67.0	65.0	62.0	61.0	56.0	53.0	51.0	51.0	51.0
	1	57.6	79.7	50.8	67.0	65.0	61.0	60.0	55.0	53.0	51.0	51.0	51.0
	2	58.5	77.4	50.9	70.0	67.0	63.0	61.0	56.0	53.0	52.0	51.0	51.0
	3	60.3	82.7	51.3	69.0	67.0	65.0	63.0	58.0	54.0	52.0	52.0	51.0
	4	62.2	83.7	51.5	71.0	69.0	67.0	65.0	61.0	57.0	53.0	52.0	52.0
	5	68.1	94.4	51.8	78.0	73.0	70.0	68.0	64.0	61.0	55.0	54.0	53.0
	6	67.6	88.5	55.1	77.0	75.0	72.0	70.0	67.0	64.0	60.0	59.0	57.0
Day	7	67.3	84.2	54.8	76.0	74.0	71.0	70.0	67.0	64.0	60.0	59.0	56.0
	8	67.0	88.0	52.5	77.0	74.0	71.0	70.0	66.0	63.0	58.0	56.0	53.0
	9	64.5	82.1	52.3	74.0	72.0	69.0	67.0	64.0	61.0	55.0	54.0	53.0
	10	64.5	81.5	51.3	75.0	73.0	69.0	68.0	63.0	60.0	55.0	54.0	53.0
	11	63.9	80.3	51.9	73.0	72.0	69.0	67.0	63.0	60.0	55.0	54.0	53.0
	12	64.3	84.1	52.5	73.0	71.0	69.0	67.0	63.0	60.0	56.0	55.0	53.0
	13	65.3	87.6	52.3	75.0	72.0	69.0	67.0	63.0	61.0	57.0	56.0	54.0
	14	64.7	86.4	52.5	73.0	71.0	68.0	67.0	64.0	61.0	57.0	56.0	54.0
	15	65.1	88.1	53.4	74.0	71.0	68.0	67.0	64.0	61.0	57.0	56.0	55.0
	16	65.1	82.2	55.6	73.0	71.0	69.0	68.0	64.0	62.0	59.0	58.0	57.0
	17	68.1	92.8	55.4	77.0	74.0	70.0	68.0	64.0	62.0	58.0	57.0	56.0
	18	64.5	87.2	53.9	72.0	71.0	68.0	67.0	64.0	61.0	57.0	56.0	55.0
	19	64.8	87.2	52.2	74.0	72.0	68.0	67.0	63.0	60.0	56.0	54.0	53.0
	20	62.2	82.6	51.2	72.0	69.0	66.0	65.0	62.0	59.0	54.0	53.0	52.0
	21	61.7	81.9	51.6	72.0	69.0	66.0	65.0	61.0	58.0	53.0	53.0	52.0
Night	22	60.9	81.3	51.4	70.0	68.0	64.0	63.0	60.0	56.0	53.0	52.0	52.0
	23	59.6	79.6	51.0	70.0	67.0	63.0	62.0	58.0	54.0	52.0	52.0	51.0

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

				Energy Average Leq		24-Hour
Project Name:	Colony Commerce Center East	*JN:*	1524	*Day*	*Night*	*CNEL*
Location:	L5 - Located adjacent to the southeast Project site boundary on Archibald Avenue, north of existing agricultural land use.	*Analyst:*	A. Wolfe	65.8	64.4	71.4
		Date:	1/25/2017			

Hourly Leq dBA Readings (unadjusted)



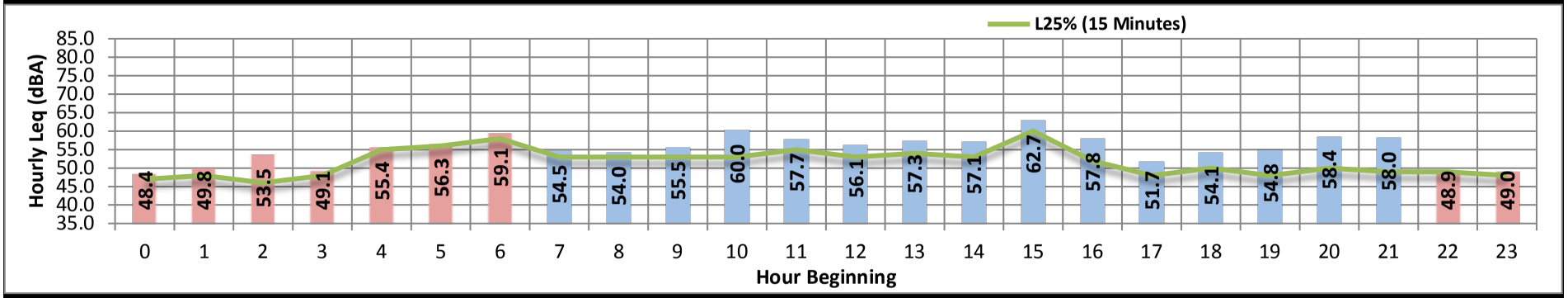
Time Period	*Hour*	*Leq*	*Lmax*	*Lmin*	*L1%*	*L2%*	*L5%*	*L8%*	*L25%*	*L50%*	*L90%*	*L95%*	*L99%*
Day	Min	62.4	77.2	46.3	71.0	69.0	67.0	66.0	62.0	59.0	54.0	53.0	50.0
	Max	68.4	89.9	56.4	76.0	74.0	72.0	71.0	69.0	67.0	63.0	61.0	58.0
Energy Average:		65.8	Average:		73.2	71.5	69.3	68.1	65.7	63.1	56.9	55.2	52.9
Night	Min	59.5	75.6	41.6	70.0	68.0	66.0	64.0	57.0	50.0	44.0	43.0	42.0
	Max	68.6	84.1	54.5	74.0	73.0	72.0	71.0	69.0	67.0	63.0	62.0	58.0
Energy Average:		64.4	Average:		71.7	70.1	68.4	67.2	62.8	58.2	51.6	50.3	48.3
Hourly Summary													
Night	0	60.7	76.9	41.8	70.0	69.0	67.0	65.0	60.0	54.0	46.0	45.0	43.0
	1	60.1	80.2	41.8	71.0	68.0	66.0	64.0	57.0	51.0	45.0	44.0	42.0
	2	59.5	75.6	41.6	70.0	69.0	66.0	64.0	57.0	50.0	44.0	43.0	42.0
	3	61.5	80.0	43.7	71.0	69.0	67.0	66.0	61.0	55.0	47.0	46.0	44.0
	4	65.1	78.2	50.7	72.0	71.0	70.0	69.0	66.0	63.0	55.0	54.0	52.0
	5	67.5	84.1	54.5	74.0	73.0	72.0	71.0	68.0	66.0	60.0	58.0	56.0
	6	68.6	78.9	54.2	74.0	73.0	72.0	71.0	69.0	67.0	63.0	62.0	58.0
Day	7	68.4	78.2	56.4	75.0	74.0	72.0	71.0	69.0	67.0	63.0	61.0	58.0
	8	67.3	80.7	52.2	75.0	73.0	71.0	70.0	68.0	65.0	60.0	59.0	56.0
	9	65.1	79.3	49.8	72.0	71.0	69.0	68.0	65.0	63.0	57.0	55.0	52.0
	10	64.8	84.0	48.6	75.0	72.0	69.0	67.0	64.0	61.0	54.0	53.0	51.0
	11	64.7	79.7	49.3	73.0	71.0	69.0	67.0	65.0	63.0	55.0	53.0	51.0
	12	62.4	78.1	49.6	71.0	69.0	67.0	66.0	62.0	59.0	54.0	53.0	51.0
	13	63.6	82.1	50.3	73.0	71.0	68.0	66.0	63.0	60.0	55.0	53.0	52.0
	14	63.8	81.0	46.3	72.0	70.0	68.0	66.0	64.0	61.0	55.0	53.0	50.0
	15	64.2	79.7	48.2	72.0	71.0	68.0	67.0	64.0	62.0	56.0	54.0	51.0
	16	65.5	77.3	50.1	72.0	71.0	69.0	68.0	66.0	64.0	59.0	57.0	55.0
	17	67.9	89.9	55.8	76.0	73.0	70.0	69.0	67.0	64.0	60.0	59.0	57.0
	18	66.1	77.2	51.9	72.0	71.0	70.0	69.0	67.0	65.0	59.0	57.0	55.0
	19	66.3	78.1	51.0	73.0	72.0	70.0	69.0	67.0	65.0	57.0	54.0	52.0
	20	66.6	87.5	49.6	74.0	72.0	70.0	69.0	67.0	64.0	55.0	53.0	51.0
	21	66.0	82.2	50.6	73.0	71.0	70.0	69.0	67.0	63.0	55.0	54.0	52.0
Night	22	63.8	77.5	48.2	72.0	70.0	68.0	68.0	64.0	60.0	53.0	51.0	50.0
	23	62.6	79.3	47.6	71.0	69.0	68.0	67.0	63.0	58.0	51.0	50.0	48.0

URBAN CROSSROADS

24-Hour Noise Level Measurement Summary

Project Name:	Colony Commerce Center East	*JN:*	1524	*Energy Average Leq*	*24-Hour*
		Analyst:	A. Wolfe	*Day* / *Night*	*CNEL*
Location:	L6 - Located southwest of the Project site on Remington Avenue adjacent to existing agricultural land use.	*Date:*	1/25/2017	57.5 / 53.9	61.5

Hourly Leq dBA Readings (unadjusted)



Time Period	*Hour*	*Leq*	*Lmax*	*Lmin*	*L1%*	*L2%*	*L5%*	*L8%*	*L25%*	*L50%*	*L90%*	*L95%*	*L99%*
Day	Min	51.7	70.1	42.0	62.0	55.0	52.0	51.0	48.0	46.0	44.0	43.0	42.0
	Max	62.7	85.1	50.7	73.0	70.0	67.0	65.0	60.0	56.0	51.0	51.0	51.0
Energy Average:		57.5	Average:		66.9	63.6	59.7	57.4	52.3	49.4	46.6	45.9	45.2
Night	Min	48.4	61.8	41.9	53.0	52.0	51.0	50.0	46.0	44.0	42.0	42.0	42.0
	Max	59.1	77.3	52.1	69.0	65.0	61.0	59.0	58.0	56.0	54.0	54.0	53.0
Energy Average:		53.9	Average:		60.9	58.2	54.8	53.0	50.6	49.0	47.1	46.8	46.1
Hourly Summary													
Night	0	48.4	61.8	42.5	58.0	57.0	53.0	50.0	47.0	45.0	44.0	43.0	43.0
	1	49.8	65.9	43.1	61.0	58.0	55.0	52.0	48.0	46.0	44.0	44.0	43.0
	2	53.5	73.9	41.9	68.0	62.0	53.0	50.0	46.0	44.0	42.0	42.0	42.0
	3	49.1	63.8	43.8	58.0	55.0	52.0	51.0	48.0	47.0	44.0	44.0	44.0
	4	55.4	70.5	49.2	60.0	59.0	57.0	57.0	55.0	54.0	52.0	51.0	50.0
	5	56.3	68.3	50.8	62.0	61.0	59.0	58.0	56.0	55.0	53.0	52.0	51.0
	6	59.1	77.3	52.1	69.0	65.0	61.0	59.0	58.0	56.0	54.0	54.0	53.0
Day	7	54.5	72.0	50.7	63.0	60.0	57.0	55.0	53.0	52.0	51.0	51.0	51.0
	8	54.0	70.1	47.7	62.0	61.0	58.0	56.0	53.0	51.0	50.0	49.0	48.0
	9	55.5	78.1	45.4	65.0	62.0	59.0	58.0	53.0	50.0	47.0	47.0	46.0
	10	60.0	84.2	44.8	70.0	66.0	62.0	59.0	53.0	48.0	46.0	45.0	45.0
	11	57.7	81.8	44.3	67.0	64.0	61.0	59.0	55.0	51.0	47.0	46.0	45.0
	12	56.1	79.8	42.5	66.0	63.0	60.0	59.0	53.0	48.0	44.0	44.0	43.0
	13	57.3	78.0	42.7	69.0	66.0	61.0	59.0	54.0	51.0	46.0	45.0	44.0
	14	57.1	78.8	43.4	68.0	64.0	60.0	58.0	53.0	50.0	46.0	45.0	44.0
	15	62.7	83.5	46.7	73.0	70.0	67.0	65.0	60.0	56.0	51.0	50.0	48.0
	16	57.8	80.7	42.0	68.0	66.0	63.0	60.0	52.0	48.0	44.0	43.0	42.0
	17	51.7	73.0	43.4	62.0	60.0	55.0	53.0	48.0	47.0	45.0	44.0	44.0
	18	54.1	73.2	43.9	66.0	63.0	58.0	56.0	50.0	47.0	45.0	44.0	44.0
	19	54.8	72.4	43.9	68.0	65.0	60.0	56.0	48.0	46.0	45.0	45.0	44.0
	20	58.4	78.0	44.9	72.0	69.0	62.0	57.0	50.0	48.0	46.0	45.0	45.0
	21	58.0	85.1	44.3	65.0	55.0	52.0	51.0	49.0	48.0	46.0	46.0	45.0
Night	22	48.9	67.0	44.7	53.0	52.0	51.0	50.0	49.0	48.0	46.0	46.0	45.0
	23	49.0	63.7	44.1	59.0	55.0	52.0	50.0	48.0	46.0	45.0	45.0	44.0

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
Road Name: Euclid Av.
Road Segment: s/o Merrill Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,881	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,488	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:	103.0	feet
Centerline Dist. to Observer:	103.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	68.593
Medium Trucks:	68.464
Heavy Trucks:	68.476

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.86	-2.16	-1.20	-4.77	0.000	0.000
Medium Trucks:	82.40	-12.15	-2.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.71	-2.15	-1.20	-5.15	0.000	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	67.0	65.6	61.8	69.4	69.8
Medium Trucks:	66.9	65.2	59.2	58.5	66.5	66.7
Heavy Trucks:	70.3	68.1	63.4	64.2	71.3	71.5
Vehicle Noise:	73.8	71.7	68.2	66.9	74.2	74.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	197	425	915	1,972
CNEL:	206	444	956	2,060

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Euclid Av.
Road Segment: s/o Kimball Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,461	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,046	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:	103.0	feet
Centerline Dist. to Observer:	103.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	68.593
Medium Trucks:	68.464
Heavy Trucks:	68.476

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.01	-2.16	-1.20	-4.77	0.000	0.000
Medium Trucks:	82.40	-13.00	-2.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.56	-2.15	-1.20	-5.15	0.000	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	66.1	64.8	61.0	68.5	69.0
Medium Trucks:	66.1	64.4	58.3	57.7	65.6	65.8
Heavy Trucks:	69.5	67.3	62.5	63.4	70.4	70.6
Vehicle Noise:	73.0	70.9	67.4	66.0	73.4	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	173	373	803	1,731
CNEL:	181	390	839	1,808

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Euclid Av.
Road Segment: s/o Pine Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,895	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,290	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:	103.0	feet
Centerline Dist. to Observer:	103.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	68.593
Medium Trucks:	68.464
Heavy Trucks:	68.476

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.07	-2.16	-1.20	-4.77	0.000	0.000
Medium Trucks:	82.40	-10.94	-2.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.49	-2.15	-1.20	-5.15	0.000	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	68.2	66.8	63.0	70.6	71.1
Medium Trucks:	68.1	66.5	60.4	59.7	67.7	67.9
Heavy Trucks:	71.6	69.3	64.6	65.4	72.5	72.7
Vehicle Noise:	75.0	72.9	69.4	68.1	75.4	75.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	238	512	1,103	2,375
CNEL:	248	535	1,152	2,482

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Euclid Av.
Road Segment: e/o SR-71
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,531	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,453	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:	103.0	feet
Centerline Dist. to Observer:	103.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	68.593
Medium Trucks:	68.464
Heavy Trucks:	68.476

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.15	-2.16	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-9.86	-2.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.41	-2.15	-1.20	-5.15	0.000	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	66.0	64.6	60.8	68.4	68.8
Medium Trucks:	66.2	64.6	58.5	57.8	65.8	66.0
Heavy Trucks:	70.5	68.3	63.5	64.4	71.4	71.6
Vehicle Noise:	73.4	71.3	67.7	66.6	73.9	74.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	187	403	869	1,873
CNEL:	195	421	906	1,952

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Archibald Av.
Road Segment: s/o SR-60 Ramps
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,921	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,392	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.62	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-10.39	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-10.95	-1.03	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	68.3	66.9	63.1	70.7	71.1
Medium Trucks:	68.4	66.7	60.7	60.0	67.9	68.2
Heavy Trucks:	72.2	70.0	65.2	66.1	73.1	73.3
Vehicle Noise:	75.4	73.3	69.7	68.5	75.9	76.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	182	392	844	1,817
CNEL:	190	409	880	1,897

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Archibald Av.
Road Segment: s/o Walnut St.
Project Name: Colony Commerce East
Job Number: 10524

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:	50	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.61	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-11.40	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-11.96	-1.03	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	67.3	65.9	62.1	69.7	70.1
Medium Trucks:	67.4	65.7	59.6	59.0	66.9	67.2
Heavy Trucks:	71.2	69.0	64.2	65.1	72.1	72.3
Vehicle Noise:	74.4	72.3	68.7	67.5	74.8	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	156	335	723	1,557
CNEL:	162	350	754	1,625

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Archibald Av.
Road Segment: s/o Riverside Dr.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,618	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,362	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.63	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-12.38	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.93	-1.03	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	67.9	66.5	62.7	70.3	70.7
Medium Trucks:	67.8	66.1	60.1	59.4	67.4	67.6
Heavy Trucks:	71.2	69.0	64.3	65.1	72.2	72.3
Vehicle Noise:	74.7	72.6	69.1	67.8	75.1	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	163	350	754	1,625
CNEL:	170	366	788	1,698

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Archibald Av.
Road Segment: s/o Chino Rd.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,131	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,013	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.06	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-13.07	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.63	-1.03	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.5	67.2	65.8	62.0	69.6	70.0
Medium Trucks:	67.1	65.4	59.4	58.7	66.7	66.9
Heavy Trucks:	70.5	68.3	63.6	64.4	71.5	71.7
Vehicle Noise:	74.0	71.9	68.4	67.1	74.4	74.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	146	315	678	1,461
CNEL:	153	329	708	1,526

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Colony Commerce East
Road Name: Archibald Av. | Job Number: 10524
Road Segment: s/o Schaefer Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,126 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,013 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	93 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	74.0 feet
Centerline Dist. to Observer:	74.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.06	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-13.07	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-13.63	-1.03	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.5	67.2	65.8	62.0	69.6	70.0
Medium Trucks:	67.1	65.4	59.4	58.7	66.7	66.9
Heavy Trucks:	70.5	68.3	63.6	64.4	71.5	71.7
Vehicle Noise:	74.0	71.9	68.4	67.1	74.4	74.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	146	315	678	1,461
CNEL:	153	329	708	1,526

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Colony Commerce East
Road Name: Archibald Av. | Job Number: 10524
Road Segment: s/o Ontario Ranch Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,009 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,401 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	93 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	74.0 feet
Centerline Dist. to Observer:	74.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.70	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-12.31	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.86	-1.03	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	68.0	66.6	62.8	70.3	70.8
Medium Trucks:	67.9	66.2	60.1	59.5	67.4	67.6
Heavy Trucks:	71.3	69.1	64.3	65.2	72.2	72.4
Vehicle Noise:	74.8	72.7	69.2	67.8	75.2	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	164	354	763	1,643
CNEL:	172	370	797	1,717

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Colony Commerce East
Road Name: Archibald Av. | Job Number: 10524
Road Segment: s/o Eucalyptus Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,656 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,366 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	93 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	74.0 feet
Centerline Dist. to Observer:	74.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.64	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-12.37	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.93	-1.03	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	67.9	66.5	62.7	70.3	70.7
Medium Trucks:	67.8	66.1	60.1	59.4	67.4	67.6
Heavy Trucks:	71.2	69.0	64.3	65.1	72.2	72.4
Vehicle Noise:	74.7	72.6	69.1	67.8	75.1	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	163	351	755	1,627
CNEL:	170	366	789	1,700

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project | Project Name: Colony Commerce East
Road Name: Archibald Av. | Job Number: 10524
Road Segment: s/o Merrill Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,859 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,586 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	93 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	74.0 feet
Centerline Dist. to Observer:	74.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.03	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-11.99	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.54	-1.03	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	68.3	66.9	63.1	70.7	71.1
Medium Trucks:	68.2	66.5	60.5	59.8	67.8	68.0
Heavy Trucks:	71.6	69.4	64.7	65.5	72.6	72.7
Vehicle Noise:	75.1	73.0	69.5	68.2	75.5	75.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	173	372	801	1,726
CNEL:	180	389	837	1,804

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Archibald Av.
Road Segment: s/o Limonite Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,997 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,500 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	78 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	76.0 feet
Centerline Dist. to Observer:	76.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.29	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	81.00	-11.72	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-12.27	-1.84	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	66.2	64.8	61.0	68.5	69.0
Medium Trucks:	66.2	64.6	58.5	57.8	65.8	66.0
Heavy Trucks:	70.1	67.8	63.1	63.9	71.0	71.2
Vehicle Noise:	73.3	71.2	67.6	66.4	73.7	74.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	134	290	624	1,345
CNEL:	140	302	651	1,403

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Ontario Ranch Rd.
Road Segment: e/o Archibald Av,
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,693 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	769 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	115 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	80.0 feet
Centerline Dist. to Observer:	80.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	55.846
Medium Trucks:	55.687
Heavy Trucks:	55.703

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.82	-0.82	-1.20	*-4.74*	0.000	0.000
Medium Trucks:	81.00	-16.84	-0.81	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-17.39	-0.81	-1.20	*-5.23*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	62.1	60.7	56.9	64.5	64.9
Medium Trucks:	62.2	60.5	54.4	53.8	61.7	61.9
Heavy Trucks:	66.0	63.8	59.0	59.8	66.9	67.1
Vehicle Noise:	69.2	67.1	63.5	62.3	69.6	69.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	163	351	756
CNEL:	79	170	366	789

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Ontario Ranch Rd.
Road Segment: e/o Hamner Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,771 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,777 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	115 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	80.0 feet
Centerline Dist. to Observer:	80.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	55.846
Medium Trucks:	55.687
Heavy Trucks:	55.703

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.19	-0.82	-1.20	*-4.74*	0.000	0.000
Medium Trucks:	81.00	-13.20	-0.81	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-13.75	-0.81	-1.20	*-5.23*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	65.7	64.3	60.5	68.1	68.6
Medium Trucks:	65.8	64.1	58.1	57.4	65.4	65.6
Heavy Trucks:	69.6	67.4	62.6	63.5	70.5	70.7
Vehicle Noise:	72.8	70.7	67.2	65.9	73.3	73.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	132	285	613	1,321
CNEL:	138	297	640	1,379

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Merrill Av.
Road Segment: e/o Euclid Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,525 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	753 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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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	-3.92	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-16.93	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-17.49	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:	66.4	64.1	62.7	58.9	66.5	66.9
Medium Trucks:	64.2	62.5	56.5	55.8	63.7	64.0
Heavy Trucks:	68.0	65.8	61.0	61.9	68.9	69.1
Vehicle Noise:	71.2	69.1	65.5	64.3	71.6	71.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	122	263	567
CNEL:	59	127	274	591

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Merrill Av.
Road Segment: e/o Grove Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,143 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	614 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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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	-4.80	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-17.81	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-18.37	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:	65.5	63.2	61.8	58.0	65.6	66.1
Medium Trucks:	63.3	61.6	55.6	54.9	62.9	63.1
Heavy Trucks:	67.1	64.9	60.1	61.0	68.0	68.2
Vehicle Noise:	70.3	68.2	64.7	63.4	70.8	71.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	107	230	495
CNEL:	52	111	240	516

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Merrill Av.
Road Segment: e/o Flight Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,380 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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	-2.96	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-15.98	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.53	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	65.0	63.7	59.9	67.4	67.9
Medium Trucks:	65.1	63.5	57.4	56.7	64.7	64.9
Heavy Trucks:	69.0	66.7	62.0	62.8	69.9	70.1
Vehicle Noise:	72.2	70.1	66.5	65.3	72.6	72.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	141	305	656
CNEL:	68	148	318	685

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Merrill Av.
Road Segment: e/o Hellman Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,380 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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	-2.96	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-15.98	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.53	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	65.0	63.7	59.9	67.4	67.9
Medium Trucks:	65.1	63.5	57.4	56.7	64.7	64.9
Heavy Trucks:	69.0	66.7	62.0	62.8	69.9	70.1
Vehicle Noise:	72.2	70.1	66.5	65.3	72.6	72.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	141	305	656
CNEL:	68	148	318	685

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Merrill Av.
Road Segment: e/o Archibald Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	3,049 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	305 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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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	-7.84	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-20.86	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-21.41	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.4	60.1	58.8	55.0	62.5	63.0
Medium Trucks:	60.3	58.6	52.5	51.9	59.8	60.0
Heavy Trucks:	64.1	61.9	57.1	57.9	65.0	65.2
Vehicle Noise:	67.3	65.2	61.6	60.4	67.7	68.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	144	310
CNEL:	32	70	150	324

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Bellgrave Av.
Road Segment: w/o Hamner Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,723 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	672 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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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	-4.41	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-17.42	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-17.98	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	63.6	62.2	58.4	66.0	66.4
Medium Trucks:	63.7	62.0	56.0	55.3	63.3	63.5
Heavy Trucks:	67.5	65.3	60.5	61.4	68.4	68.6
Vehicle Noise:	70.7	68.6	65.0	63.8	71.2	71.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	113	244	526
CNEL:	55	118	255	548

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Kimball Av.
Road Segment: e/o Hellman Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

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

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	76.0 feet
Centerline Dist. to Observer:	76.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-42.69	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-55.70	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-56.25	-1.84	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	24.5	22.2	20.8	17.0	24.6	25.0
Medium Trucks:	22.3	20.6	14.5	13.9	21.8	22.0
Heavy Trucks:	26.1	23.9	19.1	19.9	27.0	27.2
Vehicle Noise:	29.3	27.2	23.6	22.4	29.7	30.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	1	2
CNEL:	0	0	1	2

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Limonite
Road Segment: e/o Archibald Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,773 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,877 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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.51	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-12.50	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-13.06	-1.84	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	63.6	62.3	58.5	66.0	66.5
Medium Trucks:	63.9	62.2	56.2	55.5	63.5	63.7
Heavy Trucks:	68.2	65.9	61.2	62.0	69.1	69.3
Vehicle Noise:	71.1	69.0	65.3	64.2	71.6	71.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	208	448	965
CNEL:	101	217	467	1,006

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Limonite
Road Segment: e/o Harrison Av.
Project Name: Colony Commerce East
Job Number: 10524

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:	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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.03	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-11.98	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-12.53	-1.84	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	64.2	62.8	59.0	66.5	67.0
Medium Trucks:	64.4	62.8	56.7	56.0	64.0	64.2
Heavy Trucks:	68.7	66.5	61.7	62.5	69.6	69.8
Vehicle Noise:	71.6	69.5	65.9	64.8	72.1	72.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	105	225	486	1,046
CNEL:	109	235	506	1,091

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Limonite
Road Segment: e/o Sumner Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,767 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,277 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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.35	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-11.67	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-12.22	-1.84	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	64.5	63.1	59.3	66.9	67.3
Medium Trucks:	64.7	63.1	57.0	56.3	64.3	64.5
Heavy Trucks:	69.0	66.8	62.0	62.9	69.9	70.1
Vehicle Noise:	71.9	69.8	66.2	65.1	72.4	72.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	236	509	1,098
CNEL:	114	247	531	1,144

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Limonite
Road Segment: e/o Scholar Wy.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,195 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,620 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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.95	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-11.06	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-11.61	-1.84	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	65.1	63.7	59.9	67.5	67.9
Medium Trucks:	65.4	63.7	57.6	57.0	64.9	65.1
Heavy Trucks:	69.6	67.4	62.6	63.5	70.5	70.7
Vehicle Noise:	72.6	70.4	66.8	65.7	73.0	73.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	260	559	1,205
CNEL:	126	271	583	1,256

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: Limonite
Road Segment: e/o Hamner Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,173 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,217 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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	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	2.85	-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	-10.72	-1.84	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	66.0	64.6	60.8	68.4	68.8
Medium Trucks:	66.2	64.6	58.5	57.8	65.8	66.0
Heavy Trucks:	70.5	68.3	63.5	64.4	71.4	71.6
Vehicle Noise:	73.4	71.3	67.7	66.6	73.9	74.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	138	298	642	1,382
CNEL:	144	310	669	1,441

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: SR-71
Road Segment: n/o Euclid Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	72,830 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	7,283 vehicles
Vehicle Speed:	70 mph
Near/Far Lane Distance:	130 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	140.0 feet
Centerline Dist. to Observer:	140.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	4.48	-6.03	-1.20	-4.80	0.000	0.000
Medium Trucks:	85.95	-8.54	-6.02	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.97	-9.09	-6.02	-1.20	-5.08	0.000	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	70.7	69.4	65.6	73.1	73.6
Medium Trucks:	70.2	68.5	62.5	61.8	69.8	70.0
Heavy Trucks:	72.7	70.4	65.7	66.5	73.6	73.8
Vehicle Noise:	76.9	74.8	71.5	69.8	77.2	77.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	425	915	1,972	4,249
CNEL:	445	959	2,066	4,451

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: SR-71
Road Segment: s/o Euclid Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	76,410 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	7,641 vehicles
Vehicle Speed:	70 mph
Near/Far Lane Distance:	130 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	140.0 feet
Centerline Dist. to Observer:	140.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	4.69	-6.03	-1.20	-4.80	0.000	0.000
Medium Trucks:	85.95	-8.33	-6.02	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.97	-8.88	-6.02	-1.20	-5.08	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.2	70.9	69.6	65.8	73.3	73.8
Medium Trucks:	70.4	68.7	62.7	62.0	70.0	70.2
Heavy Trucks:	72.9	70.7	65.9	66.7	73.8	74.0
Vehicle Noise:	77.1	75.0	71.7	70.0	77.4	77.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	439	945	2,036	4,387
CNEL:	460	990	2,133	4,596

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: I-15
Road Segment: n/o Cantu-Galleano Ranch Rd.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	112,490 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	11,249 vehicles
Vehicle Speed:	70 mph
Near/Far Lane Distance:	130 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	140.0 feet
Centerline Dist. to Observer:	140.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	6.36	-6.03	-1.20	-4.80	0.000	0.000
Medium Trucks:	85.95	-6.65	-6.02	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.97	-7.20	-6.02	-1.20	-5.08	0.000	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	72.6	71.3	67.5	75.0	75.5
Medium Trucks:	72.1	70.4	64.4	63.7	71.7	71.9
Heavy Trucks:	74.5	72.3	67.6	68.4	75.5	75.7
Vehicle Noise:	78.8	76.7	73.4	71.7	79.1	79.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	568	1,223	2,635	5,677
CNEL:	595	1,281	2,761	5,947

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: I-15
Road Segment: s/o Cantu-Galleano Ranch Rd.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	102,050 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	10,205 vehicles
Vehicle Speed:	70 mph
Near/Far Lane Distance:	130 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	140.0 feet
Centerline Dist. to Observer:	140.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	5.94	-6.03	-1.20	-4.80	0.000	0.000
Medium Trucks:	85.95	-7.07	-6.02	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.97	-7.62	-6.02	-1.20	-5.08	0.000	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	72.2	70.8	67.0	74.6	75.1
Medium Trucks:	71.7	70.0	63.9	63.3	71.2	71.4
Heavy Trucks:	74.1	71.9	67.2	68.0	75.1	75.2
Vehicle Noise:	78.4	76.2	73.0	71.3	78.7	79.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	532	1,146	2,469	5,320
CNEL:	557	1,201	2,587	5,573

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: I-15
Road Segment: s/o Limonite Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	105,600 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	10,560 vehicles
Vehicle Speed:	70 mph
Near/Far Lane Distance:	130 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	140.0 feet
Centerline Dist. to Observer:	140.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	6.09	-6.03	-1.20	-4.80	0.000	0.000
Medium Trucks:	85.95	-6.92	-6.02	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.97	-7.48	-6.02	-1.20	-5.08	0.000	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	72.3	71.0	67.2	74.7	75.2
Medium Trucks:	71.8	70.2	64.1	63.4	71.4	71.6
Heavy Trucks:	74.3	72.1	67.3	68.1	75.2	75.4
Vehicle Noise:	78.5	76.4	73.1	71.4	78.8	79.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	544	1,173	2,526	5,443
CNEL:	570	1,228	2,647	5,702

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: SR-60
Road Segment: w/o Archibald Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	117,030 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	11,703 vehicles
Vehicle Speed:	70 mph
Near/Far Lane Distance:	130 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	130.0 feet
Centerline Dist. to Observer:	130.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	112.694
Medium Trucks:	112.616
Heavy Trucks:	112.623

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	6.54	-5.40	-1.20	-4.80	0.000	0.000
Medium Trucks:	85.95	-6.48	-5.39	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.97	-7.03	-5.39	-1.20	-5.10	0.000	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	73.4	72.1	68.3	75.8	76.3
Medium Trucks:	72.9	71.2	65.2	64.5	72.5	72.7
Heavy Trucks:	75.3	73.1	68.4	69.2	76.3	76.5
Vehicle Noise:	79.6	77.5	74.2	72.5	79.9	80.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	596	1,284	2,767	5,961
CNEL:	624	1,345	2,898	6,244

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Without Project
Road Name: SR-60
Road Segment: e/o Archibald Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	116,720 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	11,672 vehicles
Vehicle Speed:	70 mph
Near/Far Lane Distance:	130 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	130.0 feet
Centerline Dist. to Observer:	130.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	112.694
Medium Trucks:	112.616
Heavy Trucks:	112.623

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	6.53	-5.40	-1.20	-4.80	0.000	0.000
Medium Trucks:	85.95	-6.49	-5.39	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.97	-7.04	-5.39	-1.20	-5.10	0.000	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	73.4	72.0	68.3	75.8	76.3
Medium Trucks:	72.9	71.2	65.1	64.5	72.4	72.7
Heavy Trucks:	75.3	73.1	68.4	69.2	76.3	76.5
Vehicle Noise:	79.6	77.5	74.2	72.5	79.9	80.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	595	1,282	2,762	5,950
CNEL:	623	1,343	2,893	6,233

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Euclid Av.
Road Segment: s/o Merrill Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,034 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,503 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:	103.0 feet
Centerline Dist. to Observer:	103.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.85%
Medium Trucks:	81.9%	5.1%	13.0%	4.68%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	68.593
Medium Trucks:	68.464
Heavy Trucks:	68.476

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.86	-2.16	-1.20	-4.77	0.000	0.000
Medium Trucks:	82.40	-12.02	-2.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.22	-2.15	-1.20	-5.15	0.000	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	67.0	65.6	61.8	69.4	69.8
Medium Trucks:	67.0	65.4	59.3	58.6	66.6	66.8
Heavy Trucks:	70.8	68.6	63.9	64.7	71.8	71.9
Vehicle Noise:	74.1	72.0	68.4	67.2	74.5	74.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	206	443	954	2,056
CNEL:	215	462	996	2,146

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Euclid Av.
Road Segment: s/o Kimball Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,614 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,061 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:	103.0 feet
Centerline Dist. to Observer:	103.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.73%
Medium Trucks:	81.9%	5.1%	13.0%	4.70%
Heavy Trucks:	72.1%	6.0%	21.9%	4.56%

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:	68.593
Medium Trucks:	68.464
Heavy Trucks:	68.476

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.01	-2.16	-1.20	-4.77	0.000	0.000
Medium Trucks:	82.40	-12.84	-2.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.97	-2.15	-1.20	-5.15	0.000	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	66.1	64.8	61.0	68.5	69.0
Medium Trucks:	66.2	64.6	58.5	57.8	65.8	66.0
Heavy Trucks:	70.1	67.9	63.1	63.9	71.0	71.2
Vehicle Noise:	73.3	71.2	67.6	66.4	73.7	74.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	182	392	845	1,821
CNEL:	190	409	882	1,900

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Euclid Av.
Road Segment: s/o Pine Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,160	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,316	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:	103.0	feet
Centerline Dist. to Observer:	103.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.02%
Medium Trucks:	81.9%	5.1%	13.0%	4.64%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	68.593
Medium Trucks:	68.464
Heavy Trucks:	68.476

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.09	-2.16	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	82.40	-10.84	-2.15	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-11.12	-2.15	-1.20	*-5.15*	0.000	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	68.2	66.9	63.1	70.6	71.1
Medium Trucks:	68.2	66.6	60.5	59.8	67.8	68.0
Heavy Trucks:	71.9	69.7	65.0	65.8	72.9	73.0
Vehicle Noise:	75.2	73.1	69.6	68.3	75.7	75.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	245	529	1,139	2,454
CNEL:	256	552	1,189	2,562

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Euclid Av.
Road Segment: e/o SR-71
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,796	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,480	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:	103.0	feet
Centerline Dist. to Observer:	103.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.04%
Medium Trucks:	81.9%	5.1%	13.0%	4.63%
Heavy Trucks:	72.1%	6.0%	21.9%	4.33%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	68.593
Medium Trucks:	68.464
Heavy Trucks:	68.476

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.17	-2.16	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-9.76	-2.15	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.06	-2.15	-1.20	*-5.15*	0.000	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	66.0	64.6	60.8	68.4	68.8
Medium Trucks:	66.3	64.7	58.6	57.9	65.9	66.1
Heavy Trucks:	70.8	68.6	63.9	64.7	71.8	72.0
Vehicle Noise:	73.6	71.5	67.8	66.8	74.1	74.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	194	417	899	1,938
CNEL:	202	435	937	2,019

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Archibald Av.
Road Segment: s/o SR-60 Ramps
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,450	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,445	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.66%
Medium Trucks:	81.9%	5.1%	13.0%	4.70%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.65	-1.05	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	81.00	-10.20	-1.03	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.26	-1.03	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	68.3	67.0	63.2	70.7	71.2
Medium Trucks:	68.6	66.9	60.8	60.2	68.1	68.4
Heavy Trucks:	72.9	70.7	65.9	66.8	73.8	74.0
Vehicle Noise:	75.8	73.7	70.0	68.9	76.3	76.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	194	418	900	1,938
CNEL:	202	435	938	2,021

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Archibald Av.
Road Segment: s/o Walnut St.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,421	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,742	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.46%
Medium Trucks:	81.9%	5.1%	13.0%	4.74%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.65	-1.05	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	81.00	-11.16	-1.03	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-11.10	-1.03	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	67.3	66.0	62.2	69.7	70.2
Medium Trucks:	67.6	66.0	59.9	59.2	67.2	67.4
Heavy Trucks:	72.0	69.8	65.1	65.9	73.0	73.2
Vehicle Noise:	74.9	72.8	69.1	68.0	75.4	75.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	169	363	783	1,687
CNEL:	176	379	816	1,758

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Archibald Av.
Road Segment: s/o Riverside Dr.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,192 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,419 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	93 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	74.0 feet
Centerline Dist. to Observer:	74.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.35%
Medium Trucks:	81.9%	5.1%	13.0%	4.75%
Heavy Trucks:	72.1%	6.0%	21.9%	4.90%

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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.69	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-12.11	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.97	-1.03	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	67.9	66.6	62.8	70.3	70.8
Medium Trucks:	68.1	66.4	60.3	59.7	67.6	67.8
Heavy Trucks:	72.2	70.0	65.2	66.1	73.1	73.3
Vehicle Noise:	75.3	73.1	69.5	68.4	75.7	76.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	177	382	823	1,774
CNEL:	185	399	859	1,850

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Archibald Av.
Road Segment: s/o Chino Rd.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,727 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,073 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	93 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	74.0 feet
Centerline Dist. to Observer:	74.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.19%
Medium Trucks:	81.9%	5.1%	13.0%	4.77%
Heavy Trucks:	72.1%	6.0%	21.9%	5.04%

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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.01	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-12.75	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.52	-1.03	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.5	67.3	65.9	62.1	69.6	70.1
Medium Trucks:	67.4	65.8	59.7	59.0	67.0	67.2
Heavy Trucks:	71.6	69.4	64.7	65.5	72.6	72.8
Vehicle Noise:	74.6	72.5	68.9	67.8	75.1	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	162	348	751	1,617
CNEL:	169	363	783	1,686

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Archibald Av.
Road Segment: s/o Schaefer Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,722 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,072 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	93 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	74.0 feet
Centerline Dist. to Observer:	74.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.19%
Medium Trucks:	81.9%	5.1%	13.0%	4.77%
Heavy Trucks:	72.1%	6.0%	21.9%	5.04%

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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.01	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-12.76	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.52	-1.03	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.5	67.3	65.9	62.1	69.6	70.1
Medium Trucks:	67.4	65.8	59.7	59.0	67.0	67.2
Heavy Trucks:	71.6	69.4	64.7	65.5	72.6	72.8
Vehicle Noise:	74.6	72.5	68.9	67.8	75.1	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	162	348	751	1,617
CNEL:	169	363	783	1,686

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Archibald Av.
Road Segment: s/o Ontario Ranch Rd.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,296 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,530 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	93 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	74.0 feet
Centerline Dist. to Observer:	74.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.03%
Medium Trucks:	81.9%	5.1%	13.0%	4.75%
Heavy Trucks:	72.1%	6.0%	21.9%	5.21%

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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.87	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-11.91	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.51	-1.03	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	68.1	66.8	63.0	70.5	71.0
Medium Trucks:	68.3	66.6	60.5	59.9	67.8	68.0
Heavy Trucks:	72.7	70.4	65.7	66.5	73.6	73.8
Vehicle Noise:	75.6	73.4	69.8	68.7	76.0	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	187	403	868	1,869
CNEL:	195	420	904	1,949

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Archibald Av.
Road Segment: s/o Eucalyptus Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,943	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,494	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.01%
Medium Trucks:	81.9%	5.1%	13.0%	4.76%
Heavy Trucks:	72.1%	6.0%	21.9%	5.23%

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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.80	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-11.97	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.56	-1.03	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	68.1	66.7	62.9	70.4	70.9
Medium Trucks:	68.2	66.6	60.5	59.8	67.8	68.0
Heavy Trucks:	72.6	70.4	65.6	66.5	73.5	73.7
Vehicle Noise:	75.5	73.4	69.8	68.7	76.0	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	185	399	861	1,854
CNEL:	193	416	897	1,933

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Archibald Av.
Road Segment: s/o Merrill Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,581	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,658	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.78%
Medium Trucks:	81.9%	5.1%	13.0%	4.64%
Heavy Trucks:	72.1%	6.0%	21.9%	4.57%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.12	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-11.80	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.86	-1.03	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	68.4	67.0	63.2	70.8	71.2
Medium Trucks:	68.4	66.7	60.7	60.0	67.9	68.2
Heavy Trucks:	72.3	70.1	65.3	66.2	73.2	73.4
Vehicle Noise:	75.5	73.4	69.8	68.6	75.9	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	184	396	854	1,840
CNEL:	192	414	891	1,920

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Archibald Av.
Road Segment: s/o Limonite Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,512	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,551	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	78	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	76.0	feet
Centerline Dist. to Observer:	76.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.58%
Medium Trucks:	81.9%	5.1%	13.0%	4.48%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.39	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-11.72	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.27	-1.84	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	66.3	64.9	61.1	68.6	69.1
Medium Trucks:	66.2	64.6	58.5	57.8	65.8	66.0
Heavy Trucks:	70.1	67.8	63.1	63.9	71.0	71.2
Vehicle Noise:	73.3	71.2	67.7	66.4	73.7	74.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	135	291	627	1,351
CNEL:	141	304	654	1,410

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Ontario Ranch Rd.
Road Segment: e/o Archibald Av,
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,361	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	836	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	115	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	80.0	feet
Centerline Dist. to Observer:	80.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.27%
Medium Trucks:	81.9%	5.1%	13.0%	4.62%
Heavy Trucks:	72.1%	6.0%	21.9%	5.11%

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:	55.846
Medium Trucks:	55.687
Heavy Trucks:	55.703

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.52	-0.82	-1.20	-4.74	0.000	0.000
Medium Trucks:	81.00	-16.42	-0.81	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-15.99	-0.81	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	62.4	61.0	57.2	64.8	65.2
Medium Trucks:	62.6	60.9	54.8	54.2	62.1	62.4
Heavy Trucks:	67.4	65.2	60.4	61.2	68.3	68.5
Vehicle Noise:	70.1	68.0	64.3	63.3	70.6	70.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	188	406	874
CNEL:	91	196	422	910

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Ontario Ranch Rd.
Road Segment: e/o Hamner Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		***Site Conditions (Hard = 10, Soft = 15)***	
Average Daily Traffic (Adt):	18,349 vehicles	*Autos:*	15
Peak Hour Percentage:	10%	*Medium Trucks (2 Axles):*	15
Peak Hour Volume:	1,835 vehicles	*Heavy Trucks (3+ Axles):*	15
Vehicle Speed:	50 mph		
Near/Far Lane Distance:	115 feet		
Site Data			
Barrier Height:	**0.0 feet**		
Barrier Type (0-Wall, 1-Berm):	0.0		
Centerline Dist. to Barrier:	80.0 feet		
Centerline Dist. to Observer:	80.0 feet		
Barrier Distance to Observer:	0.0 feet		
Observer Height (Above Pad):	5.0 feet		
Pad Elevation:	0.0 feet		
Road Elevation:	0.0 feet		
Road Grade:	0.0%		
Left View:	-90.0 degrees		
Right View:	90.0 degrees		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.85%
Medium Trucks:	81.9%	5.1%	13.0%	4.61%
Heavy Trucks:	72.1%	6.0%	21.9%	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: 55.846
Medium Trucks: 55.687
Heavy Trucks: 55.703

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.08	-0.82	-1.20	*-4.74*	0.000	0.000
Medium Trucks:	81.00	-13.02	-0.81	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-13.09	-0.81	-1.20	*-5.23*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	65.8	64.5	60.7	68.2	68.7
Medium Trucks:	66.0	64.3	58.3	57.6	65.5	65.8
Heavy Trucks:	70.3	68.1	63.3	64.1	71.2	71.4
Vehicle Noise:	73.2	71.1	67.5	66.4	73.7	74.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	141	304	655	1,411
CNEL:	147	317	683	1,471

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Merrill Av.
Road Segment: e/o Euclid Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		***Site Conditions (Hard = 10, Soft = 15)***	
Average Daily Traffic (Adt):	7,902 vehicles	*Autos:*	15
Peak Hour Percentage:	10%	*Medium Trucks (2 Axles):*	15
Peak Hour Volume:	790 vehicles	*Heavy Trucks (3+ Axles):*	15
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		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	89.88%
Medium Trucks:	81.9%	5.1%	13.0%	4.79%
Heavy Trucks:	72.1%	6.0%	21.9%	5.32%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos: 40.460
Medium Trucks: 40.241
Heavy Trucks: 40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.78	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-16.51	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-16.06	1.31	-1.20	*-5.50*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	64.2	62.8	59.1	66.6	67.1
Medium Trucks:	64.6	62.9	56.9	56.2	64.2	64.4
Heavy Trucks:	69.4	67.2	62.5	63.3	70.4	70.5
Vehicle Noise:	72.1	69.9	66.2	65.3	72.6	72.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	141	303	652
CNEL:	68	146	315	679

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Merrill Av.
Road Segment: e/o Grove Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		***Site Conditions (Hard = 10, Soft = 15)***	
Average Daily Traffic (Adt):	6,744 vehicles	*Autos:*	15
Peak Hour Percentage:	10%	*Medium Trucks (2 Axles):*	15
Peak Hour Volume:	674 vehicles	*Heavy Trucks (3+ Axles):*	15
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		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	89.91%
Medium Trucks:	81.9%	5.1%	13.0%	4.68%
Heavy Trucks:	72.1%	6.0%	21.9%	5.41%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos: 40.460
Medium Trucks: 40.241
Heavy Trucks: 40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.47	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-17.30	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-16.67	1.31	-1.20	*-5.50*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	63.5	62.2	58.4	65.9	66.4
Medium Trucks:	63.8	62.1	56.1	55.4	63.4	63.6
Heavy Trucks:	68.8	66.6	61.8	62.7	69.7	69.9
Vehicle Noise:	71.4	69.3	65.5	64.6	71.9	72.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	274	589
CNEL:	61	132	285	614

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Merrill Av.
Road Segment: e/o Flight Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		***Site Conditions (Hard = 10, Soft = 15)***	
Average Daily Traffic (Adt):	9,981 vehicles	*Autos:*	15
Peak Hour Percentage:	10%	*Medium Trucks (2 Axles):*	15
Peak Hour Volume:	998 vehicles	*Heavy Trucks (3+ Axles):*	15
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		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.40%
Medium Trucks:	81.9%	5.1%	13.0%	4.64%
Heavy Trucks:	72.1%	6.0%	21.9%	4.96%

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: 40.460
Medium Trucks: 40.241
Heavy Trucks: 40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.74	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-15.63	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-15.35	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:	67.5	65.2	63.9	60.1	67.6	68.1
Medium Trucks:	65.5	63.8	57.8	57.1	65.0	65.3
Heavy Trucks:	70.1	67.9	63.2	64.0	71.1	71.3
Vehicle Noise:	72.9	70.8	67.1	66.1	73.4	73.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	343	740
CNEL:	77	166	358	771

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project | Project Name: Colony Commerce East
Road Name: Merrill Av. | Job Number: 10524
Road Segment: e/o Hellman Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,981	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	998	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:	70.9%	12.9%	16.2%	90.40%
Medium Trucks:	81.9%	5.1%	13.0%	4.64%
Heavy Trucks:	72.1%	6.0%	21.9%	4.96%

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:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.74	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-15.63	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.35	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:	67.5	65.2	63.9	60.1	67.6	68.1
Medium Trucks:	65.5	63.8	57.8	57.1	65.0	65.3
Heavy Trucks:	70.1	67.9	63.2	64.0	71.1	71.3
Vehicle Noise:	72.9	70.8	67.1	66.1	73.4	73.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	343	740
CNEL:	77	166	358	771

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project | Project Name: Colony Commerce East
Road Name: Merrill Av. | Job Number: 10524
Road Segment: e/o Archibald Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	3,049	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	305	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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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	-7.84	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-20.86	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-21.41	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.4	60.1	58.8	55.0	62.5	63.0
Medium Trucks:	60.3	58.6	52.5	51.9	59.8	60.0
Heavy Trucks:	64.1	61.9	57.1	57.9	65.0	65.2
Vehicle Noise:	67.3	65.2	61.6	60.4	67.7	68.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	144	310
CNEL:	32	70	150	324

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project | Project Name: Colony Commerce East
Road Name: Bellgrave Av. | Job Number: 10524
Road Segment: w/o Hamner Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,723	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	672	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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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	-4.41	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-17.42	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-17.98	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	63.6	62.2	58.4	66.0	66.4
Medium Trucks:	63.7	62.0	56.0	55.3	63.3	63.5
Heavy Trucks:	67.5	65.3	60.5	61.4	68.4	68.6
Vehicle Noise:	70.7	68.6	65.0	63.8	71.2	71.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	113	244	526
CNEL:	55	118	255	548

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project | Project Name: Colony Commerce East
Road Name: Kimball Av. | Job Number: 10524
Road Segment: e/o Hellman Av.

SITE SPECIFIC INPUT DATA

Highway Data

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

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	76.0	feet
Centerline Dist. to Observer:	76.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-42.69	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-55.70	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-56.25	-1.84	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	24.5	22.2	20.8	17.0	24.6	25.0
Medium Trucks:	22.3	20.6	14.5	13.9	21.8	22.0
Heavy Trucks:	26.1	23.9	19.1	19.9	27.0	27.2
Vehicle Noise:	29.3	27.2	23.6	22.4	29.7	30.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	1	2
CNEL:	0	0	1	2

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Limonite
Road Segment: e/o Archibald Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,374	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,937	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:	70.9%	12.9%	16.2%	90.89%
Medium Trucks:	81.9%	5.1%	13.0%	4.61%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	0.62	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-12.33	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-12.43	-1.84	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	66.0	63.7	62.4	58.6	66.1	66.6
Medium Trucks:	64.1	62.4	56.4	55.7	63.6	63.9
Heavy Trucks:	68.8	66.6	61.8	62.6	69.7	69.9
Vehicle Noise:	71.5	69.4	65.7	64.7	72.0	72.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	103	222	478	1,030
CNEL:	107	231	498	1,073

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Limonite
Road Segment: e/o Harrison Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,761	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,176	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:	70.9%	12.9%	16.2%	90.94%
Medium Trucks:	81.9%	5.1%	13.0%	4.61%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.13	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-11.83	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-11.97	-1.84	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	66.5	64.2	62.9	59.1	66.6	67.1
Medium Trucks:	64.6	62.9	56.9	56.2	64.1	64.4
Heavy Trucks:	69.2	67.0	62.3	63.1	70.2	70.4
Vehicle Noise:	72.0	69.8	66.1	65.1	72.5	72.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	111	239	514	1,108
CNEL:	115	249	536	1,154

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Limonite
Road Segment: e/o Sumner Av.
Project Name: Colony Commerce East
Job Number: 10524

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:	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:	70.9%	12.9%	16.2%	90.96%
Medium Trucks:	81.9%	5.1%	13.0%	4.61%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	68.46	1.43	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-11.52	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-11.69	-1.84	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	66.8	64.5	63.2	59.4	66.9	67.4
Medium Trucks:	64.9	63.2	57.2	56.5	64.5	64.7
Heavy Trucks:	69.5	67.3	62.5	63.4	70.4	70.6
Vehicle Noise:	72.3	70.1	66.4	65.4	72.7	73.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	116	249	537	1,158
CNEL:	121	260	560	1,206

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Limonite
Road Segment: e/o Scholar Wy.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,706	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,671	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:	70.9%	12.9%	16.2%	91.00%
Medium Trucks:	81.9%	5.1%	13.0%	4.61%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	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	2.02	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-10.93	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-11.15	-1.84	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	67.4	65.1	63.8	60.0	67.5	68.0
Medium Trucks:	65.5	63.8	57.7	57.1	65.0	65.3
Heavy Trucks:	70.1	67.8	63.1	63.9	71.0	71.2
Vehicle Noise:	72.8	70.7	67.0	66.0	73.3	73.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	126	272	586	1,262
CNEL:	132	283	610	1,315

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: Limonite
Road Segment: e/o Hamner Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,572 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,257 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:	70.9%	12.9%	16.2%	91.05%
Medium Trucks:	81.9%	5.1%	13.0%	4.62%
Heavy Trucks:	72.1%	6.0%	21.9%	4.33%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	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	2.88	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-10.06	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.34	-1.84	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	66.0	64.6	60.8	68.4	68.9
Medium Trucks:	66.3	64.7	58.6	57.9	65.9	66.1
Heavy Trucks:	70.9	68.7	63.9	64.7	71.8	72.0
Vehicle Noise:	73.7	71.5	67.8	66.8	74.1	74.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	309	666	1,435
CNEL:	149	322	694	1,495

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: SR-71
Road Segment: n/o Euclid Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	72,830 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	7,283 vehicles
Vehicle Speed:	70 mph
Near/Far Lane Distance:	130 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	140.0 feet
Centerline Dist. to Observer:	140.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	4.48	-6.03	-1.20	-4.80	0.000	0.000
Medium Trucks:	85.95	-8.54	-6.02	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.97	-9.09	-6.02	-1.20	-5.08	0.000	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	70.7	69.4	65.6	73.1	73.6
Medium Trucks:	70.2	68.5	62.5	61.8	69.8	70.0
Heavy Trucks:	72.7	70.4	65.7	66.5	73.6	73.8
Vehicle Noise:	76.9	74.8	71.5	69.8	77.2	77.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	425	915	1,972	4,249
CNEL:	445	959	2,066	4,451

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: SR-71
Road Segment: s/o Euclid Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	76,675 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	7,667 vehicles
Vehicle Speed:	70 mph
Near/Far Lane Distance:	130 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	140.0 feet
Centerline Dist. to Observer:	140.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.24%
Medium Trucks:	81.9%	5.1%	13.0%	4.60%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	4.69	-6.03	-1.20	-4.80	0.000	0.000
Medium Trucks:	85.95	-8.28	-6.02	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.97	-8.72	-6.02	-1.20	-5.08	0.000	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	71.0	69.6	65.8	73.3	73.8
Medium Trucks:	70.4	68.8	62.7	62.1	70.0	70.2
Heavy Trucks:	73.0	70.8	66.1	66.9	74.0	74.1
Vehicle Noise:	77.2	75.1	71.8	70.1	77.5	77.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	444	957	2,062	4,442
CNEL:	465	1,002	2,159	4,652

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: I-15
Road Segment: n/o Cantu-Galleano Ranch Rd.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	112,979 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	11,298 vehicles
Vehicle Speed:	70 mph
Near/Far Lane Distance:	130 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	140.0 feet
Centerline Dist. to Observer:	140.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.31%
Medium Trucks:	81.9%	5.1%	13.0%	4.58%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	6.38	-6.03	-1.20	-4.80	0.000	0.000
Medium Trucks:	85.95	-6.62	-6.02	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.97	-7.09	-6.02	-1.20	-5.08	0.000	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	72.6	71.3	67.5	75.0	75.5
Medium Trucks:	72.1	70.5	64.4	63.7	71.7	71.9
Heavy Trucks:	74.7	72.4	67.7	68.5	75.6	75.8
Vehicle Noise:	78.8	76.7	73.4	71.8	79.2	79.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	573	1,234	2,659	5,729
CNEL:	600	1,293	2,785	6,001

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: I-15
Road Segment: s/o Cantu-Galleano Ranch Rd.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	102,050	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	10,205	vehicles
Vehicle Speed:	70	mph
Near/Far Lane Distance:	130	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	140.0	feet
Centerline Dist. to Observer:	140.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	5.94	-6.03	-1.20	*-4.80*	0.000	0.000
Medium Trucks:	85.95	-7.07	-6.02	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	88.97	-7.62	-6.02	-1.20	*-5.08*	0.000	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	72.2	70.8	67.0	74.6	75.1
Medium Trucks:	71.7	70.0	63.9	63.3	71.2	71.4
Heavy Trucks:	74.1	71.9	67.2	68.0	75.1	75.2
Vehicle Noise:	78.4	76.2	73.0	71.3	78.7	79.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	532	1,146	2,469	5,320
CNEL:	557	1,201	2,587	5,573

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: I-15
Road Segment: s/o Limonite Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	105,887	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	10,589	vehicles
Vehicle Speed:	70	mph
Near/Far Lane Distance:	130	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	140.0	feet
Centerline Dist. to Observer:	140.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.29%
Medium Trucks:	81.9%	5.1%	13.0%	4.59%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	6.10	-6.03	-1.20	*-4.80*	0.000	0.000
Medium Trucks:	85.95	-6.89	-6.02	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	88.97	-7.36	-6.02	-1.20	*-5.08*	0.000	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	72.4	71.0	67.2	74.7	75.2
Medium Trucks:	71.8	70.2	64.1	63.4	71.4	71.6
Heavy Trucks:	74.4	72.2	67.4	68.3	75.3	75.5
Vehicle Noise:	78.6	76.4	73.2	71.5	78.9	79.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	549	1,183	2,550	5,493
CNEL:	575	1,240	2,670	5,753

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: SR-60
Road Segment: w/o Archibald Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	117,273	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	11,727	vehicles
Vehicle Speed:	70	mph
Near/Far Lane Distance:	130	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	130.0	feet
Centerline Dist. to Observer:	130.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.30%
Medium Trucks:	81.9%	5.1%	13.0%	4.59%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	112.694
Medium Trucks:	112.616
Heavy Trucks:	112.623

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	6.54	-5.40	-1.20	*-4.80*	0.000	0.000
Medium Trucks:	85.95	-6.45	-5.39	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	88.97	-6.92	-5.39	-1.20	*-5.10*	0.000	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	73.4	72.1	68.3	75.8	76.3
Medium Trucks:	72.9	71.3	65.2	64.5	72.5	72.7
Heavy Trucks:	75.5	73.2	68.5	69.3	76.4	76.6
Vehicle Noise:	79.6	77.5	74.2	72.6	80.0	80.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	601	1,295	2,789	6,010
CNEL:	629	1,356	2,922	6,294

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing With Project
Road Name: SR-60
Road Segment: e/o Archibald Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	116,873	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	11,687	vehicles
Vehicle Speed:	70	mph
Near/Far Lane Distance:	130	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	130.0	feet
Centerline Dist. to Observer:	130.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.29%
Medium Trucks:	81.9%	5.1%	13.0%	4.59%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	112.694
Medium Trucks:	112.616
Heavy Trucks:	112.623

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	6.53	-5.40	-1.20	*-4.80*	0.000	0.000
Medium Trucks:	85.95	-6.46	-5.39	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	88.97	-6.93	-5.39	-1.20	*-5.10*	0.000	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	73.4	72.0	68.3	75.8	76.3
Medium Trucks:	72.9	71.2	65.2	64.5	72.5	72.7
Heavy Trucks:	75.4	73.2	68.5	69.3	76.4	76.6
Vehicle Noise:	79.6	77.5	74.2	72.6	80.0	80.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	600	1,292	2,784	5,998
CNEL:	628	1,353	2,916	6,282

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project
Road Name: Euclid Av.
Road Segment: s/o Merrill Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,459	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,046	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:	103.0	feet
Centerline Dist. to Observer:	103.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	68.593
Medium Trucks:	68.464
Heavy Trucks:	68.476

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.97	-2.16	-1.20	-4.77	0.000	0.000
Medium Trucks:	82.40	-10.04	-2.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.60	-2.15	-1.20	-5.15	0.000	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	69.1	67.7	63.9	71.5	72.0
Medium Trucks:	69.0	67.4	61.3	60.6	68.6	68.8
Heavy Trucks:	72.4	70.2	65.5	66.3	73.4	73.6
Vehicle Noise:	75.9	73.8	70.3	69.0	76.3	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	273	587	1,266	2,727
CNEL:	285	614	1,322	2,849

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project
Road Name: Euclid Av.
Road Segment: s/o Kimball Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,828	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,183	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:	103.0	feet
Centerline Dist. to Observer:	103.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	68.593
Medium Trucks:	68.464
Heavy Trucks:	68.476

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.93	-2.16	-1.20	-4.77	0.000	0.000
Medium Trucks:	82.40	-11.08	-2.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.64	-2.15	-1.20	-5.15	0.000	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	68.1	66.7	62.9	70.5	70.9
Medium Trucks:	68.0	66.3	60.2	59.6	67.5	67.7
Heavy Trucks:	71.4	69.2	64.4	65.3	72.3	72.5
Vehicle Noise:	74.9	72.8	69.3	67.9	75.3	75.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	232	501	1,079	2,324
CNEL:	243	523	1,127	2,428

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project
Road Name: Euclid Av.
Road Segment: s/o Pine Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,837	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,584	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:	103.0	feet
Centerline Dist. to Observer:	103.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	68.593
Medium Trucks:	68.464
Heavy Trucks:	68.476

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.51	-2.16	-1.20	-4.77	0.000	0.000
Medium Trucks:	82.40	-9.50	-2.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.05	-2.15	-1.20	-5.15	0.000	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	69.6	68.3	64.5	72.0	72.5
Medium Trucks:	69.6	67.9	61.8	61.2	69.1	69.3
Heavy Trucks:	73.0	70.8	66.0	66.9	73.9	74.1
Vehicle Noise:	76.5	74.4	70.9	69.5	76.9	77.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	296	638	1,376	2,963
CNEL:	310	667	1,437	3,096

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project
Road Name: Euclid Av.
Road Segment: e/o SR-71
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,537	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,754	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:	103.0	feet
Centerline Dist. to Observer:	103.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	68.593
Medium Trucks:	68.464
Heavy Trucks:	68.476

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.54	-2.16	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-8.47	-2.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.02	-2.15	-1.20	-5.15	0.000	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	67.4	66.0	62.2	69.7	70.2
Medium Trucks:	67.6	66.0	59.9	59.2	67.2	67.4
Heavy Trucks:	71.9	69.7	64.9	65.7	72.8	73.0
Vehicle Noise:	74.8	72.7	69.1	68.0	75.3	75.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	232	499	1,076	2,318
CNEL:	242	521	1,121	2,416

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project | Project Name: Colony Commerce East
Road Name: Archibald Av. | Job Number: 10524
Road Segment: s/o SR-60 Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,921	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,392	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.62	-1.05	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	81.00	-10.39	-1.03	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.95	-1.03	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	68.3	66.9	63.1	70.7	71.1
Medium Trucks:	68.4	66.7	60.7	60.0	67.9	68.2
Heavy Trucks:	72.2	70.0	65.2	66.1	73.1	73.3
Vehicle Noise:	75.4	73.3	69.7	68.5	75.9	76.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	182	392	844	1,817
CNEL:	190	409	880	1,897

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project | Project Name: Colony Commerce East
Road Name: Archibald Av. | Job Number: 10524
Road Segment: s/o Walnut St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	41,961	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,196	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.54	-1.05	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	81.00	-9.47	-1.03	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.02	-1.03	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	69.2	67.9	64.1	71.6	72.1
Medium Trucks:	69.3	67.6	61.6	60.9	68.9	69.1
Heavy Trucks:	73.1	70.9	66.2	67.0	74.1	74.2
Vehicle Noise:	76.4	74.2	70.7	69.4	76.8	77.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	209	451	972	2,094
CNEL:	219	471	1,015	2,186

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project | Project Name: Colony Commerce East
Road Name: Archibald Av. | Job Number: 10524
Road Segment: s/o Riverside Dr.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,474	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,747	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.64	-1.05	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	82.40	-10.37	-1.03	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.93	-1.03	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.2	69.9	68.5	64.7	72.3	72.7
Medium Trucks:	69.8	68.1	62.1	61.4	69.4	69.6
Heavy Trucks:	73.2	71.0	66.3	67.1	74.2	74.4
Vehicle Noise:	76.7	74.6	71.1	69.8	77.1	77.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	221	476	1,026	2,211
CNEL:	231	498	1,072	2,310

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project | Project Name: Colony Commerce East
Road Name: Archibald Av. | Job Number: 10524
Road Segment: s/o Chino Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,983	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,498	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.34	-1.05	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	82.40	-10.67	-1.03	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-11.23	-1.03	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.9	69.6	68.2	64.4	72.0	72.4
Medium Trucks:	69.5	67.8	61.8	61.1	69.1	69.3
Heavy Trucks:	72.9	70.7	66.0	66.8	73.9	74.1
Vehicle Noise:	76.4	74.3	70.8	69.5	76.8	77.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	211	455	980	2,112
CNEL:	221	475	1,024	2,206

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project
Road Name: Archibald Av.
Road Segment: s/o Schaefer Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,302	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,530	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.38	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-10.63	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.19	-1.03	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.9	69.6	68.3	64.5	72.0	72.5
Medium Trucks:	69.5	67.9	61.8	61.1	69.1	69.3
Heavy Trucks:	73.0	70.8	66.0	66.8	73.9	74.1
Vehicle Noise:	76.5	74.4	70.9	69.5	76.9	77.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	212	458	986	2,125
CNEL:	222	478	1,030	2,220

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project
Road Name: Archibald Av.
Road Segment: s/o Ontario Ranch Rd.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	42,937	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,294	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.23	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-9.78	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.34	-1.03	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.8	70.5	69.1	65.3	72.9	73.3
Medium Trucks:	70.4	68.7	62.7	62.0	70.0	70.2
Heavy Trucks:	73.8	71.6	66.9	67.7	74.8	74.9
Vehicle Noise:	77.3	75.2	71.7	70.4	77.7	78.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	242	522	1,124	2,421
CNEL:	253	545	1,174	2,529

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project
Road Name: Archibald Av.
Road Segment: s/o Eucalyptus Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	42,860	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,286	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.22	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-9.79	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.35	-1.03	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.8	70.5	69.1	65.3	72.9	73.3
Medium Trucks:	70.4	68.7	62.7	62.0	70.0	70.2
Heavy Trucks:	73.8	71.6	66.9	67.7	74.8	74.9
Vehicle Noise:	77.3	75.2	71.7	70.4	77.7	78.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	242	521	1,122	2,418
CNEL:	253	544	1,173	2,526

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project
Road Name: Archibald Av.
Road Segment: s/o Merrill Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,412	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,541	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.47	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-9.54	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.09	-1.03	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.0	70.7	69.4	65.6	73.1	73.6
Medium Trucks:	70.6	69.0	62.9	62.2	70.2	70.4
Heavy Trucks:	74.1	71.9	67.1	67.9	75.0	75.2
Vehicle Noise:	77.6	75.4	72.0	70.6	78.0	78.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	251	541	1,166	2,513
CNEL:	263	566	1,219	2,625

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project
Road Name: Archibald Av.
Road Segment: s/o Limonite Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	43,128 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,313 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	78 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	76.0 feet
Centerline Dist. to Observer:	76.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.66	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-9.35	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-9.90	-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:	70.8	68.5	67.2	63.4	70.9	71.4
Medium Trucks:	68.6	67.0	60.9	60.2	68.2	68.4
Heavy Trucks:	72.4	70.2	65.5	66.3	73.4	73.5
Vehicle Noise:	75.7	73.5	70.0	68.7	76.1	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	193	417	898	1,934
CNEL:	202	435	937	2,019

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project
Road Name: Ontario Ranch Rd.
Road Segment: e/o Archibald Av,
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,122 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,812 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	115 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	80.0 feet
Centerline Dist. to Observer:	80.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	55.846
Medium Trucks:	55.687
Heavy Trucks:	55.703

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.10	-0.82	-1.20	-4.74	0.000	0.000
Medium Trucks:	81.00	-13.12	-0.81	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-13.67	-0.81	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	65.8	64.4	60.6	68.2	68.6
Medium Trucks:	65.9	64.2	58.2	57.5	65.4	65.7
Heavy Trucks:	69.7	67.5	62.7	63.6	70.6	70.8
Vehicle Noise:	72.9	70.8	67.2	66.0	73.4	73.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	134	288	621	1,339
CNEL:	140	301	648	1,397

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project
Road Name: Ontario Ranch Rd.
Road Segment: e/o Hamner Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,965 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,797 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	115 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	80.0 feet
Centerline Dist. to Observer:	80.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	55.846
Medium Trucks:	55.687
Heavy Trucks:	55.703

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.11	-0.82	-1.20	-4.74	0.000	0.000
Medium Trucks:	81.00	-9.90	-0.81	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-10.46	-0.81	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.3	69.0	67.6	63.8	71.4	71.9
Medium Trucks:	69.1	67.4	61.4	60.7	68.7	68.9
Heavy Trucks:	72.9	70.7	65.9	66.8	73.8	74.0
Vehicle Noise:	76.1	74.0	70.5	69.2	76.6	76.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	219	472	1,017	2,192
CNEL:	229	493	1,062	2,287

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project
Road Name: Merrill Av.
Road Segment: e/o Euclid Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,840 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,284 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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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	0.90	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	-12.66	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:	71.2	68.9	67.5	63.7	71.3	71.8
Medium Trucks:	69.0	67.3	61.3	60.6	68.6	68.8
Heavy Trucks:	72.8	70.6	65.9	66.7	73.8	73.9
Vehicle Noise:	76.0	73.9	70.4	69.1	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	267	575	1,240

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project
Road Name: Merrill Av.
Road Segment: e/o Grove Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,535 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,854 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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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	-0.01	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-13.02	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:	70.3	68.0	66.6	62.8	70.4	70.8
Medium Trucks:	68.1	66.4	60.4	59.7	67.7	67.9
Heavy Trucks:	71.9	69.7	64.9	65.8	72.8	73.0
Vehicle Noise:	75.1	73.0	69.4	68.2	75.6	75.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	223	480	1,033
CNEL:	108	232	501	1,078

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project
Road Name: Merrill Av.
Road Segment: e/o Flight Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,297 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,130 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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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	0.60	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.41	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.97	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.9	68.6	67.2	63.4	71.0	71.4
Medium Trucks:	68.7	67.0	61.0	60.3	68.3	68.5
Heavy Trucks:	72.5	70.3	65.5	66.4	73.4	73.6
Vehicle Noise:	75.7	73.6	70.1	68.8	76.2	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	244	526	1,134
CNEL:	118	255	549	1,183

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project
Road Name: Merrill Av.
Road Segment: e/o Hellman Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,251 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,025 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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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	0.38	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.63	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-13.19	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:	70.7	68.4	67.0	63.2	70.8	71.2
Medium Trucks:	68.5	66.8	60.8	60.1	68.0	68.3
Heavy Trucks:	72.3	70.1	65.3	66.2	73.2	73.4
Vehicle Noise:	75.5	73.4	69.8	68.6	75.9	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	236	509	1,096
CNEL:	114	246	531	1,144

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project
Road Name: Merrill Av.
Road Segment: e/o Archibald Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,433 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	743 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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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	-3.97	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-16.99	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-17.54	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	64.0	62.7	58.9	66.4	66.9
Medium Trucks:	64.1	62.5	56.4	55.7	63.7	63.9
Heavy Trucks:	67.9	65.7	61.0	61.8	68.9	69.1
Vehicle Noise:	71.2	69.0	65.5	64.2	71.6	71.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	261	562
CNEL:	59	126	272	586

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project
Road Name: Bellgrave Av.
Road Segment: w/o Hamner Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,087 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	909 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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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	-3.10	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-16.11	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.67	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	64.9	63.5	59.7	67.3	67.8
Medium Trucks:	65.0	63.3	57.3	56.6	64.6	64.8
Heavy Trucks:	68.8	66.6	61.8	62.7	69.7	69.9
Vehicle Noise:	72.0	69.9	66.4	65.1	72.5	72.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	298	642
CNEL:	67	144	311	671

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project
Road Name: Kimball Av.
Road Segment: e/o Hellman Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

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

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	76.0 feet
Centerline Dist. to Observer:	76.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-42.69	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-55.70	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-56.25	-1.84	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	24.5	22.2	20.8	17.0	24.6	25.0
Medium Trucks:	22.3	20.6	14.5	13.9	21.8	22.0
Heavy Trucks:	26.1	23.9	19.1	19.9	27.0	27.2
Vehicle Noise:	29.3	27.2	23.6	22.4	29.7	30.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	1	2
CNEL:	0	0	1	2

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project
Road Name: Limonite
Road Segment: e/o Archibald Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,056 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,306 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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	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	2.96	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-10.05	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-10.60	-1.84	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	66.1	64.7	60.9	68.5	68.9
Medium Trucks:	66.4	64.7	58.6	58.0	65.9	66.1
Heavy Trucks:	70.6	68.4	63.6	64.5	71.5	71.7
Vehicle Noise:	73.6	71.4	67.8	66.7	74.0	74.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	141	303	653	1,407
CNEL:	147	316	681	1,467

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project
Road Name: Limonite
Road Segment: e/o Harrison Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,523 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,952 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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.74	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-9.27	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.83	-1.84	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	66.9	65.5	61.7	69.3	69.7
Medium Trucks:	67.1	65.5	59.4	58.7	66.7	66.9
Heavy Trucks:	71.4	69.2	64.4	65.2	72.3	72.5
Vehicle Noise:	74.3	72.2	68.6	67.5	74.8	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	159	342	736	1,585
CNEL:	165	356	767	1,653

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project | Project Name: Colony Commerce East
Road Name: Limonite | Job Number: 10524
Road Segment: e/o Sumner Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	42,041	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,204	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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	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	4.01	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-9.00	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.56	-1.84	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	67.1	65.8	62.0	69.5	70.0
Medium Trucks:	67.4	65.7	59.7	59.0	67.0	67.2
Heavy Trucks:	71.7	69.4	64.7	65.5	72.6	72.8
Vehicle Noise:	74.6	72.5	68.8	67.7	75.1	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	165	356	767	1,652
CNEL:	172	371	799	1,722

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project | Project Name: Colony Commerce East
Road Name: Limonite | Job Number: 10524
Road Segment: e/o Scholar Wy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,892	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,489	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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	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	4.29	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-8.72	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.27	-1.84	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	67.4	66.0	62.3	69.8	70.3
Medium Trucks:	67.7	66.0	60.0	59.3	67.3	67.5
Heavy Trucks:	71.9	69.7	65.0	65.8	72.9	73.1
Vehicle Noise:	74.9	72.8	69.1	68.0	75.3	75.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	173	372	801	1,726
CNEL:	180	388	835	1,799

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project | Project Name: Colony Commerce East
Road Name: Limonite | Job Number: 10524
Road Segment: e/o Hamner Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	50,620	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,062	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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	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	4.82	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-8.20	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.75	-1.84	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	67.9	66.6	62.8	70.3	70.8
Medium Trucks:	68.2	66.6	60.5	59.8	67.8	68.0
Heavy Trucks:	72.5	70.2	65.5	66.3	73.4	73.6
Vehicle Noise:	75.4	73.3	69.6	68.5	75.9	76.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	187	403	868	1,870
CNEL:	195	420	905	1,949

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project | Project Name: Colony Commerce East
Road Name: SR-71 | Job Number: 10524
Road Segment: n/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	76,350	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	7,635	vehicles
Vehicle Speed:	70	mph
Near/Far Lane Distance:	130	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	140.0	feet
Centerline Dist. to Observer:	140.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	4.68	-6.03	-1.20	*-4.80*	0.000	0.000
Medium Trucks:	85.95	-8.33	-6.02	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	88.97	-8.88	-6.02	-1.20	*-5.08*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.2	70.9	69.6	65.8	73.3	73.8
Medium Trucks:	70.4	68.7	62.7	62.0	70.0	70.2
Heavy Trucks:	72.9	70.7	65.9	66.7	73.8	74.0
Vehicle Noise:	77.1	75.0	71.7	70.0	77.4	77.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	438	945	2,035	4,385
CNEL:	459	990	2,132	4,593

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project | Project Name: Colony Commerce East
Road Name: SR-71 | Job Number: 10524
Road Segment: s/o Euclid Av.

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	85,570 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	8,557 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	70 mph		
Near/Far Lane Distance:	130 feet		
Site Data		**Vehicle Mix**	
Barrier Height:	**0.0 feet**		
Barrier Type (0-Wall, 1-Berm):	0.0		
Centerline Dist. to Barrier:	140.0 feet		
Centerline Dist. to Observer:	140.0 feet		
Barrier Distance to Observer:	0.0 feet		
Observer Height (Above Pad):	5.0 feet		
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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	5.18	-6.03	-1.20	-4.80	0.000	0.000
Medium Trucks:	85.95	-7.84	-6.02	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.97	-8.39	-6.02	-1.20	-5.08	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.7	71.4	70.1	66.3	73.8	74.3
Medium Trucks:	70.9	69.2	63.2	62.5	70.5	70.7
Heavy Trucks:	73.4	71.1	66.4	67.2	74.3	74.5
Vehicle Noise:	77.6	75.5	72.2	70.5	77.9	78.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	473	1,019	2,196	4,731
CNEL:	496	1,068	2,300	4,956

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project | Project Name: Colony Commerce East
Road Name: I-15 | Job Number: 10524
Road Segment: n/o Cantu-Galleano Ranch Rd.

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	128,860 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	12,886 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	70 mph		
Near/Far Lane Distance:	130 feet		
Site Data		**Vehicle Mix**	
Barrier Height:	**0.0 feet**		
Barrier Type (0-Wall, 1-Berm):	0.0		
Centerline Dist. to Barrier:	140.0 feet		
Centerline Dist. to Observer:	140.0 feet		
Barrier Distance to Observer:	0.0 feet		
Observer Height (Above Pad):	5.0 feet		
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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	6.95	-6.03	-1.20	-4.80	0.000	0.000
Medium Trucks:	85.95	-6.06	-6.02	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.97	-6.61	-6.02	-1.20	-5.08	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	75.5	73.2	71.9	68.1	75.6	76.1
Medium Trucks:	72.7	71.0	64.9	64.3	72.2	72.5
Heavy Trucks:	75.1	72.9	68.2	69.0	76.1	76.3
Vehicle Noise:	79.4	77.3	74.0	72.3	79.7	80.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	622	1,339	2,885	6,215
CNEL:	651	1,403	3,022	6,511

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project | Project Name: Colony Commerce East
Road Name: I-15 | Job Number: 10524
Road Segment: s/o Cantu-Galleano Ranch Rd.

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	114,960 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	11,496 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	70 mph		
Near/Far Lane Distance:	130 feet		
Site Data		**Vehicle Mix**	
Barrier Height:	**0.0 feet**		
Barrier Type (0-Wall, 1-Berm):	0.0		
Centerline Dist. to Barrier:	140.0 feet		
Centerline Dist. to Observer:	140.0 feet		
Barrier Distance to Observer:	0.0 feet		
Observer Height (Above Pad):	5.0 feet		
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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	6.46	-6.03	-1.20	-4.80	0.000	0.000
Medium Trucks:	85.95	-6.55	-6.02	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.97	-7.11	-6.02	-1.20	-5.08	0.000	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	72.7	71.4	67.6	75.1	75.6
Medium Trucks:	72.2	70.5	64.5	63.8	71.7	72.0
Heavy Trucks:	74.6	72.4	67.7	68.5	75.6	75.8
Vehicle Noise:	78.9	76.8	73.5	71.8	79.2	79.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	576	1,241	2,674	5,760
CNEL:	603	1,300	2,801	6,034

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project | Project Name: Colony Commerce East
Road Name: I-15 | Job Number: 10524
Road Segment: s/o Limonite Av.

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	122,710 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	12,271 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	70 mph		
Near/Far Lane Distance:	130 feet		
Site Data		**Vehicle Mix**	
Barrier Height:	**0.0 feet**		
Barrier Type (0-Wall, 1-Berm):	0.0		
Centerline Dist. to Barrier:	140.0 feet		
Centerline Dist. to Observer:	140.0 feet		
Barrier Distance to Observer:	0.0 feet		
Observer Height (Above Pad):	5.0 feet		
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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	6.74	-6.03	-1.20	-4.80	0.000	0.000
Medium Trucks:	85.95	-6.27	-6.02	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.97	-6.82	-6.02	-1.20	-5.08	0.000	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	73.0	71.6	67.8	75.4	75.9
Medium Trucks:	72.5	70.8	64.7	64.1	72.0	72.2
Heavy Trucks:	74.9	72.7	68.0	68.8	75.9	76.0
Vehicle Noise:	79.2	77.0	73.8	72.1	79.5	79.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	602	1,296	2,792	6,016
CNEL:	630	1,358	2,925	6,302

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project | Project Name: Colony Commerce East
Road Name: SR-60 | Job Number: 10524
Road Segment: w/o Archibald Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	131,980	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	13,198	vehicles
Vehicle Speed:	70	mph
Near/Far Lane Distance:	130	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	130.0	feet
Centerline Dist. to Observer:	130.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	112.694
Medium Trucks:	112.616
Heavy Trucks:	112.623

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	7.06	-5.40	-1.20	*-4.80*	0.000	0.000
Medium Trucks:	85.95	-5.95	-5.39	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	88.97	-6.51	-5.39	-1.20	*-5.10*	0.000	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	73.9	72.6	68.8	76.3	76.8
Medium Trucks:	73.4	71.7	65.7	65.0	73.0	73.2
Heavy Trucks:	75.9	73.7	68.9	69.7	76.8	77.0
Vehicle Noise:	80.1	78.0	74.7	73.0	80.4	80.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	646	1,391	2,998	6,458
CNEL:	677	1,458	3,140	6,765

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 Without Project | Project Name: Colony Commerce East
Road Name: SR-60 | Job Number: 10524
Road Segment: e/o Archibald Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	131,940	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	13,194	vehicles
Vehicle Speed:	70	mph
Near/Far Lane Distance:	130	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	130.0	feet
Centerline Dist. to Observer:	130.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	112.694
Medium Trucks:	112.616
Heavy Trucks:	112.623

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	7.06	-5.40	-1.20	*-4.80*	0.000	0.000
Medium Trucks:	85.95	-5.96	-5.39	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	88.97	-6.51	-5.39	-1.20	*-5.10*	0.000	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	73.9	72.6	68.8	76.3	76.8
Medium Trucks:	73.4	71.7	65.7	65.0	73.0	73.2
Heavy Trucks:	75.9	73.7	68.9	69.7	76.8	77.0
Vehicle Noise:	80.1	78.0	74.7	73.0	80.4	80.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	646	1,391	2,997	6,457
CNEL:	676	1,457	3,140	6,764

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project | Project Name: Colony Commerce East
Road Name: Euclid Av. | Job Number: 10524
Road Segment: s/o Merrill Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,612	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,061	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:	103.0	feet
Centerline Dist. to Observer:	103.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.07%
Medium Trucks:	81.9%	5.1%	13.0%	4.64%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	68.593
Medium Trucks:	68.464
Heavy Trucks:	68.476

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.97	-2.16	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	82.40	-9.96	-2.15	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.29	-2.15	-1.20	*-5.15*	0.000	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	69.1	67.7	63.9	71.5	72.0
Medium Trucks:	69.1	67.4	61.4	60.7	68.7	68.9
Heavy Trucks:	72.8	70.5	65.8	66.6	73.7	73.9
Vehicle Noise:	76.1	74.0	70.5	69.2	76.5	76.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	280	603	1,299	2,799
CNEL:	292	630	1,356	2,922

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project | Project Name: Colony Commerce East
Road Name: Euclid Av. | Job Number: 10524
Road Segment: s/o Kimball Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,981	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:	103.0	feet
Centerline Dist. to Observer:	103.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.97%
Medium Trucks:	81.9%	5.1%	13.0%	4.66%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	68.593
Medium Trucks:	68.464
Heavy Trucks:	68.476

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.93	-2.16	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	82.40	-10.98	-2.15	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-11.25	-2.15	-1.20	*-5.15*	0.000	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	68.1	66.7	62.9	70.5	70.9
Medium Trucks:	68.1	66.4	60.3	59.7	67.6	67.9
Heavy Trucks:	71.8	69.6	64.8	65.7	72.7	72.9
Vehicle Noise:	75.1	73.0	69.4	68.2	75.5	75.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	240	517	1,115	2,402
CNEL:	251	540	1,164	2,507

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project
Road Name: Euclid Av.
Road Segment: s/o Pine Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	46,102	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,610	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:	103.0	feet
Centerline Dist. to Observer:	103.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.13%
Medium Trucks:	81.9%	5.1%	13.0%	4.62%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	68.593
Medium Trucks:	68.464
Heavy Trucks:	68.476

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.52	-2.16	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	82.40	-9.43	-2.15	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.78	-2.15	-1.20	*-5.15*	0.000	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	69.7	68.3	64.5	72.0	72.5
Medium Trucks:	69.6	68.0	61.9	61.2	69.2	69.4
Heavy Trucks:	73.3	71.0	66.3	67.1	74.2	74.4
Vehicle Noise:	76.6	74.5	71.0	69.7	77.0	77.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	303	654	1,408	3,034
CNEL:	317	683	1,471	3,169

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project
Road Name: Euclid Av.
Road Segment: e/o SR-71
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,802	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,780	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:	103.0	feet
Centerline Dist. to Observer:	103.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.14%
Medium Trucks:	81.9%	5.1%	13.0%	4.62%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	68.593
Medium Trucks:	68.464
Heavy Trucks:	68.476

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.55	-2.16	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-8.40	-2.15	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.76	-2.15	-1.20	*-5.15*	0.000	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	67.4	66.0	62.2	69.8	70.2
Medium Trucks:	67.7	66.0	60.0	59.3	67.3	67.5
Heavy Trucks:	72.1	69.9	65.2	66.0	73.1	73.3
Vehicle Noise:	75.0	72.9	69.2	68.1	75.4	75.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	238	512	1,103	2,376
CNEL:	248	533	1,149	2,476

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project
Road Name: Archibald Av.
Road Segment: s/o SR-60 Ramps
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,450	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,445	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.66%
Medium Trucks:	81.9%	5.1%	13.0%	4.70%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.65	-1.05	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	81.00	-10.20	-1.03	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.26	-1.03	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	68.3	67.0	63.2	70.7	71.2
Medium Trucks:	68.6	66.9	60.8	60.2	68.1	68.4
Heavy Trucks:	72.9	70.7	65.9	66.8	73.8	74.0
Vehicle Noise:	75.8	73.7	70.0	68.9	76.3	76.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	194	418	900	1,938
CNEL:	202	435	938	2,021

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project
Road Name: Archibald Av.
Road Segment: s/o Walnut St.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	42,490	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,249	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.80%
Medium Trucks:	81.9%	5.1%	13.0%	4.68%
Heavy Trucks:	72.1%	6.0%	21.9%	4.52%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.57	-1.05	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	81.00	-9.31	-1.03	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.46	-1.03	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	69.2	67.9	64.1	71.6	72.1
Medium Trucks:	69.5	67.8	61.7	61.1	69.0	69.2
Heavy Trucks:	73.7	71.5	66.7	67.6	74.6	74.8
Vehicle Noise:	76.7	74.5	70.9	69.8	77.1	77.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	221	476	1,025	2,207
CNEL:	230	496	1,068	2,302

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project
Road Name: Archibald Av.
Road Segment: s/o Riverside Dr.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,048	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,805	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.74%
Medium Trucks:	81.9%	5.1%	13.0%	4.68%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.67	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-10.20	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.30	-1.03	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.2	69.9	68.6	64.8	72.3	72.8
Medium Trucks:	70.0	68.3	62.2	61.6	69.5	69.8
Heavy Trucks:	73.9	71.7	66.9	67.7	74.8	75.0
Vehicle Noise:	77.1	74.9	71.4	70.2	77.5	77.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	234	504	1,086	2,339
CNEL:	244	526	1,133	2,441

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project
Road Name: Archibald Av.
Road Segment: s/o Chino Rd.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,579	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,558	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.70%
Medium Trucks:	81.9%	5.1%	13.0%	4.69%
Heavy Trucks:	72.1%	6.0%	21.9%	4.61%

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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.38	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-10.49	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.56	-1.03	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.9	69.6	68.3	64.5	72.0	72.5
Medium Trucks:	69.7	68.0	62.0	61.3	69.3	69.5
Heavy Trucks:	73.6	71.4	66.6	67.5	74.5	74.7
Vehicle Noise:	76.8	74.7	71.1	69.9	77.2	77.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	224	483	1,041	2,243
CNEL:	234	504	1,087	2,341

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project
Road Name: Archibald Av.
Road Segment: s/o Schaefer Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,898	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,590	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.70%
Medium Trucks:	81.9%	5.1%	13.0%	4.69%
Heavy Trucks:	72.1%	6.0%	21.9%	4.61%

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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.42	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-10.45	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.52	-1.03	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.0	69.7	68.3	64.5	72.1	72.5
Medium Trucks:	69.7	68.1	62.0	61.3	69.3	69.5
Heavy Trucks:	73.6	71.4	66.7	67.5	74.6	74.8
Vehicle Noise:	76.8	74.7	71.1	69.9	77.3	77.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	226	486	1,047	2,256
CNEL:	235	507	1,093	2,354

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project
Road Name: Archibald Av.
Road Segment: s/o Ontario Ranch Rd.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,224	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,422	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.62%
Medium Trucks:	81.9%	5.1%	13.0%	4.67%
Heavy Trucks:	72.1%	6.0%	21.9%	4.70%

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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.32	-1.05	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-9.55	-1.03	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.53	-1.03	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.9	70.6	69.2	65.4	73.0	73.4
Medium Trucks:	70.6	69.0	62.9	62.2	70.2	70.4
Heavy Trucks:	74.6	72.4	67.7	68.5	75.6	75.8
Vehicle Noise:	77.8	75.7	72.1	70.9	78.2	78.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	261	562	1,211	2,610
CNEL:	272	587	1,264	2,723

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project
Road Name: Archibald Av.
Road Segment: s/o Eucalyptus Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		***Site Conditions (Hard = 10, Soft = 15)***	
Average Daily Traffic (Adt):	44,147 vehicles	*Autos:*	15
Peak Hour Percentage:	10%	*Medium Trucks (2 Axles):*	15
Peak Hour Volume:	4,415 vehicles	*Heavy Trucks (3+ Axles):*	15
Vehicle Speed:	55 mph		
Near/Far Lane Distance:	93 feet		
Site Data			
Barrier Height:	**0.0 feet**		
Barrier Type (0-Wall, 1-Berm):	0.0		
Centerline Dist. to Barrier:	74.0 feet		
Centerline Dist. to Observer:	74.0 feet		
Barrier Distance to Observer:	0.0 feet		
Observer Height (Above Pad):	5.0 feet		
Pad Elevation:	0.0 feet		
Road Elevation:	0.0 feet		
Road Grade:	0.0%		
Left View:	-90.0 degrees		
Right View:	90.0 degrees		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.62%
Medium Trucks:	81.9%	5.1%	13.0%	4.67%
Heavy Trucks:	72.1%	6.0%	21.9%	4.70%

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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.31	-1.05	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	82.40	-9.56	-1.03	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.54	-1.03	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.8	70.6	69.2	65.4	73.0	73.4
Medium Trucks:	70.6	69.0	62.9	62.2	70.2	70.4
Heavy Trucks:	74.6	72.4	67.7	68.5	75.6	75.7
Vehicle Noise:	77.8	75.6	72.1	70.9	78.2	78.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	261	562	1,210	2,607
CNEL:	272	586	1,263	2,720

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project
Road Name: Archibald Av.
Road Segment: s/o Merrill Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		***Site Conditions (Hard = 10, Soft = 15)***	
Average Daily Traffic (Adt):	46,134 vehicles	*Autos:*	15
Peak Hour Percentage:	10%	*Medium Trucks (2 Axles):*	15
Peak Hour Volume:	4,613 vehicles	*Heavy Trucks (3+ Axles):*	15
Vehicle Speed:	55 mph		
Near/Far Lane Distance:	93 feet		
Site Data			
Barrier Height:	**0.0 feet**		
Barrier Type (0-Wall, 1-Berm):	0.0		
Centerline Dist. to Barrier:	74.0 feet		
Centerline Dist. to Observer:	74.0 feet		
Barrier Distance to Observer:	0.0 feet		
Observer Height (Above Pad):	5.0 feet		
Pad Elevation:	0.0 feet		
Road Elevation:	0.0 feet		
Road Grade:	0.0%		
Left View:	-90.0 degrees		
Right View:	90.0 degrees		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.05%
Medium Trucks:	81.9%	5.1%	13.0%	4.61%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.52	-1.05	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	82.40	-9.43	-1.03	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.69	-1.03	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.1	70.8	69.4	65.6	73.2	73.6
Medium Trucks:	70.7	69.1	63.0	62.3	70.3	70.5
Heavy Trucks:	74.5	72.3	67.5	68.3	75.4	75.6
Vehicle Noise:	77.8	75.7	72.1	70.9	78.2	78.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	261	562	1,210	2,607
CNEL:	272	587	1,264	2,722

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project
Road Name: Archibald Av.
Road Segment: s/o Limonite Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		***Site Conditions (Hard = 10, Soft = 15)***	
Average Daily Traffic (Adt):	43,643 vehicles	*Autos:*	15
Peak Hour Percentage:	10%	*Medium Trucks (2 Axles):*	15
Peak Hour Volume:	4,364 vehicles	*Heavy Trucks (3+ Axles):*	15
Vehicle Speed:	50 mph		
Near/Far Lane Distance:	78 feet		
Site Data			
Barrier Height:	**0.0 feet**		
Barrier Type (0-Wall, 1-Berm):	0.0		
Centerline Dist. to Barrier:	76.0 feet		
Centerline Dist. to Observer:	76.0 feet		
Barrier Distance to Observer:	0.0 feet		
Observer Height (Above Pad):	5.0 feet		
Pad Elevation:	0.0 feet		
Road Elevation:	0.0 feet		
Road Grade:	0.0%		
Left View:	-90.0 degrees		
Right View:	90.0 degrees		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.51%
Medium Trucks:	81.9%	5.1%	13.0%	4.51%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	70.20	3.72	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	81.00	-9.35	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.90	-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:	70.9	68.6	67.2	63.4	71.0	71.4
Medium Trucks:	68.6	67.0	60.9	60.2	68.2	68.4
Heavy Trucks:	72.4	70.2	65.5	66.3	73.4	73.5
Vehicle Noise:	75.7	73.6	70.0	68.8	76.1	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	194	418	900	1,939
CNEL:	202	436	940	2,024

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project
Road Name: Ontario Ranch Rd.
Road Segment: e/o Archibald Av,
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		***Site Conditions (Hard = 10, Soft = 15)***	
Average Daily Traffic (Adt):	18,790 vehicles	*Autos:*	15
Peak Hour Percentage:	10%	*Medium Trucks (2 Axles):*	15
Peak Hour Volume:	1,879 vehicles	*Heavy Trucks (3+ Axles):*	15
Vehicle Speed:	50 mph		
Near/Far Lane Distance:	115 feet		
Site Data			
Barrier Height:	**0.0 feet**		
Barrier Type (0-Wall, 1-Berm):	0.0		
Centerline Dist. to Barrier:	80.0 feet		
Centerline Dist. to Observer:	80.0 feet		
Barrier Distance to Observer:	0.0 feet		
Observer Height (Above Pad):	5.0 feet		
Pad Elevation:	0.0 feet		
Road Elevation:	0.0 feet		
Road Grade:	0.0%		
Left View:	-90.0 degrees		
Right View:	90.0 degrees		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.90%
Medium Trucks:	81.9%	5.1%	13.0%	4.59%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	55.846
Medium Trucks:	55.687
Heavy Trucks:	55.703

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.03	-0.82	-1.20	*-4.74*	0.000	0.000
Medium Trucks:	81.00	-12.94	-0.81	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-13.02	-0.81	-1.20	*-5.23*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	65.9	64.6	60.8	68.3	68.8
Medium Trucks:	66.1	64.4	58.3	57.7	65.6	65.8
Heavy Trucks:	70.4	68.1	63.4	64.2	71.3	71.5
Vehicle Noise:	73.3	71.2	67.6	66.5	73.8	74.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	308	663	1,429
CNEL:	149	321	692	1,490

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project
Road Name: Ontario Ranch Rd.
Road Segment: e/o Hamner Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,543 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,854 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	115 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	80.0 feet
Centerline Dist. to Observer:	80.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.14%
Medium Trucks:	81.9%	5.1%	13.0%	4.59%
Heavy Trucks:	72.1%	6.0%	21.9%	4.27%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	55.846
Medium Trucks:	55.687
Heavy Trucks:	55.703

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.16	-0.82	-1.20	-4.74	0.000	0.000
Medium Trucks:	81.00	-9.82	-0.81	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-10.13	-0.81	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.3	69.1	67.7	63.9	71.4	71.9
Medium Trucks:	69.2	67.5	61.5	60.8	68.7	69.0
Heavy Trucks:	73.2	71.0	66.3	67.1	74.2	74.4
Vehicle Noise:	76.3	74.2	70.6	69.4	76.8	77.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	226	487	1,050	2,262
CNEL:	236	508	1,095	2,359

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project
Road Name: Merrill Av.
Road Segment: e/o Euclid Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,217 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,322 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:	70.9%	12.9%	16.2%	90.89%
Medium Trucks:	81.9%	5.1%	13.0%	4.64%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	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	0.95	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	-12.14	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:	71.2	68.9	67.6	63.8	71.3	71.8
Medium Trucks:	69.1	67.5	61.4	60.7	68.7	68.9
Heavy Trucks:	73.3	71.1	66.4	67.2	74.3	74.5
Vehicle Noise:	76.3	74.2	70.6	69.5	76.8	77.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	125	269	579	1,248
CNEL:	130	280	604	1,302

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project
Road Name: Merrill Av.
Road Segment: e/o Grove Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,136 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,914 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:	70.9%	12.9%	16.2%	90.88%
Medium Trucks:	81.9%	5.1%	13.0%	4.61%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	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	0.11	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.84	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.93	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	68.1	66.7	62.9	70.5	71.0
Medium Trucks:	68.3	66.6	60.5	59.9	67.8	68.0
Heavy Trucks:	72.6	70.3	65.6	66.4	73.5	73.7
Vehicle Noise:	75.5	73.4	69.8	68.6	76.0	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	237	511	1,101
CNEL:	115	247	533	1,148

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project
Road Name: Merrill Av.
Road Segment: e/o Flight Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,898 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,190 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:	70.9%	12.9%	16.2%	90.95%
Medium Trucks:	81.9%	5.1%	13.0%	4.60%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	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	0.70	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.26	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.41	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	68.7	67.3	63.5	71.1	71.5
Medium Trucks:	68.9	67.2	61.1	60.5	68.4	68.6
Heavy Trucks:	73.1	70.9	66.1	66.9	74.0	74.2
Vehicle Noise:	76.1	73.9	70.3	69.2	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	580	1,249

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project
Road Name: Merrill Av.
Road Segment: e/o Hellman Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,852	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,085	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:	70.9%	12.9%	16.2%	90.92%
Medium Trucks:	81.9%	5.1%	13.0%	4.60%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	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	0.48	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-12.47	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-12.60	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	68.5	67.1	63.3	70.9	71.3
Medium Trucks:	68.6	67.0	60.9	60.2	68.2	68.4
Heavy Trucks:	72.9	70.7	65.9	66.8	73.8	74.0
Vehicle Noise:	75.9	73.7	70.1	69.0	76.3	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	250	539	1,162
CNEL:	121	261	562	1,211

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project
Road Name: Merrill Av.
Road Segment: e/o Archibald Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,433	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	743	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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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	-3.97	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-16.99	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-17.54	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	64.0	62.7	58.9	66.4	66.9
Medium Trucks:	64.1	62.5	56.4	55.7	63.7	63.9
Heavy Trucks:	67.9	65.7	61.0	61.8	68.9	69.1
Vehicle Noise:	71.2	69.0	65.5	64.2	71.6	71.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	261	562
CNEL:	59	126	272	586

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project
Road Name: Bellgrave Av.
Road Segment: w/o Hamner Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,087	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	909	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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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	-3.10	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-16.11	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-16.67	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	64.9	63.5	59.7	67.3	67.8
Medium Trucks:	65.0	63.3	57.3	56.6	64.6	64.8
Heavy Trucks:	68.8	66.6	61.8	62.7	69.7	69.9
Vehicle Noise:	72.0	69.9	66.4	65.1	72.5	72.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	298	642
CNEL:	67	144	311	671

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project
Road Name: Kimball Av.
Road Segment: e/o Hellman Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

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

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	76.0	feet
Centerline Dist. to Observer:	76.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-42.69	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-55.70	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-56.25	-1.84	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	24.5	22.2	20.8	17.0	24.6	25.0
Medium Trucks:	22.3	20.6	14.5	13.9	21.8	22.0
Heavy Trucks:	26.1	23.9	19.1	19.9	27.0	27.2
Vehicle Noise:	29.3	27.2	23.6	22.4	29.7	30.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	1	2
CNEL:	0	0	1	2

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project
Road Name: Limonite
Road Segment: e/o Archibald Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,657	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,366	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:	70.9%	12.9%	16.2%	91.11%
Medium Trucks:	81.9%	5.1%	13.0%	4.59%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.03	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-9.95	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-10.23	-1.84	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	66.1	64.8	61.0	68.5	69.0
Medium Trucks:	66.5	64.8	58.7	58.1	66.0	66.2
Heavy Trucks:	71.0	68.8	64.0	64.8	71.9	72.1
Vehicle Noise:	73.8	71.7	68.0	66.9	74.3	74.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	146	315	678	1,461
CNEL:	152	328	707	1,523

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project
Road Name: Limonite
Road Segment: e/o Harrison Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,101	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,010	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:	70.9%	12.9%	16.2%	91.15%
Medium Trucks:	81.9%	5.1%	13.0%	4.59%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.79	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-9.19	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.51	-1.84	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	66.9	65.5	61.8	69.3	69.8
Medium Trucks:	67.2	65.6	59.5	58.8	66.8	67.0
Heavy Trucks:	71.7	69.5	64.7	65.6	72.6	72.8
Vehicle Noise:	74.5	72.4	68.7	67.7	75.0	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	164	352	759	1,636
CNEL:	170	367	791	1,705

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project
Road Name: Limonite
Road Segment: e/o Sumner Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	42,597	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,260	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:	70.9%	12.9%	16.2%	91.16%
Medium Trucks:	81.9%	5.1%	13.0%	4.59%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	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	4.05	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-8.93	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.26	-1.84	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.5	67.2	65.8	62.0	69.6	70.0
Medium Trucks:	67.5	65.8	59.8	59.1	67.0	67.3
Heavy Trucks:	71.9	69.7	65.0	65.8	72.9	73.1
Vehicle Noise:	74.8	72.7	69.0	67.9	75.3	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	170	367	790	1,702
CNEL:	177	382	823	1,773

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project
Road Name: Limonite
Road Segment: e/o Scholar Wy.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,403	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,540	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:	70.9%	12.9%	16.2%	91.17%
Medium Trucks:	81.9%	5.1%	13.0%	4.59%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	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	4.33	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-8.65	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-9.00	-1.84	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	67.5	66.1	62.3	69.8	70.3
Medium Trucks:	67.8	66.1	60.0	59.4	67.3	67.5
Heavy Trucks:	72.2	70.0	65.2	66.1	73.1	73.3
Vehicle Noise:	75.1	72.9	69.3	68.2	75.5	75.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	177	382	823	1,774
CNEL:	185	398	858	1,849

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project
Road Name: Limonite
Road Segment: e/o Hamner Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	51,019 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,102 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:	70.9%	12.9%	16.2%	91.18%
Medium Trucks:	81.9%	5.1%	13.0%	4.60%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	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	4.84	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-8.13	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.51	-1.84	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	68.0	66.6	62.8	70.3	70.8
Medium Trucks:	68.3	66.6	60.6	59.9	67.8	68.1
Heavy Trucks:	72.7	70.5	65.7	66.6	73.6	73.8
Vehicle Noise:	75.6	73.4	69.8	68.7	76.0	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	192	413	889	1,915
CNEL:	200	430	926	1,996

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project
Road Name: SR-71
Road Segment: n/o Euclid Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	76,350 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	7,635 vehicles
Vehicle Speed:	70 mph
Near/Far Lane Distance:	130 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	140.0 feet
Centerline Dist. to Observer:	140.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	4.68	-6.03	-1.20	-4.80	0.000	0.000
Medium Trucks:	85.95	-8.33	-6.02	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.97	-8.88	-6.02	-1.20	-5.08	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.2	70.9	69.6	65.8	73.3	73.8
Medium Trucks:	70.4	68.7	62.7	62.0	70.0	70.2
Heavy Trucks:	72.9	70.7	65.9	66.7	73.8	74.0
Vehicle Noise:	77.1	75.0	71.7	70.0	77.4	77.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	438	945	2,035	4,385
CNEL:	459	990	2,132	4,593

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project
Road Name: SR-71
Road Segment: s/o Euclid Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	85,835 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	8,583 vehicles
Vehicle Speed:	70 mph
Near/Far Lane Distance:	130 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	140.0 feet
Centerline Dist. to Observer:	140.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.26%
Medium Trucks:	81.9%	5.1%	13.0%	4.59%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	5.18	-6.03	-1.20	-4.80	0.000	0.000
Medium Trucks:	85.95	-7.80	-6.02	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.97	-8.24	-6.02	-1.20	-5.08	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.7	71.4	70.1	66.3	73.8	74.3
Medium Trucks:	70.9	69.3	63.2	62.5	70.5	70.7
Heavy Trucks:	73.5	71.3	66.5	67.4	74.4	74.6
Vehicle Noise:	77.7	75.5	72.2	70.6	78.0	78.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	478	1,031	2,221	4,784
CNEL:	501	1,080	2,326	5,011

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project
Road Name: I-15
Road Segment: n/o Cantu-Galleano Ranch Rd.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	129,349 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	12,935 vehicles
Vehicle Speed:	70 mph
Near/Far Lane Distance:	130 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	140.0 feet
Centerline Dist. to Observer:	140.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.33%
Medium Trucks:	81.9%	5.1%	13.0%	4.58%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	6.97	-6.03	-1.20	-4.80	0.000	0.000
Medium Trucks:	85.95	-6.03	-6.02	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.97	-6.51	-6.02	-1.20	-5.08	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	75.5	73.2	71.9	68.1	75.6	76.1
Medium Trucks:	72.7	71.0	65.0	64.3	72.3	72.5
Heavy Trucks:	75.2	73.0	68.3	69.1	76.2	76.4
Vehicle Noise:	79.4	77.3	74.0	72.4	79.8	80.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	627	1,350	2,908	6,265
CNEL:	656	1,414	3,046	6,562

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project | Project Name: Colony Commerce East
Road Name: I-15 | Job Number: 10524
Road Segment: s/o Cantu-Galleano Ranch Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	114,960	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	11,496	vehicles
Vehicle Speed:	70	mph
Near/Far Lane Distance:	130	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	140.0	feet
Centerline Dist. to Observer:	140.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	6.46	-6.03	-1.20	*-4.80*	0.000	0.000
Medium Trucks:	85.95	-6.55	-6.02	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	88.97	-7.11	-6.02	-1.20	*-5.08*	0.000	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	72.7	71.4	67.6	75.1	75.6
Medium Trucks:	72.2	70.5	64.5	63.8	71.7	72.0
Heavy Trucks:	74.6	72.4	67.7	68.5	75.6	75.8
Vehicle Noise:	78.9	76.8	73.5	71.8	79.2	79.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	576	1,241	2,674	5,760
CNEL:	603	1,300	2,801	6,034

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project | Project Name: Colony Commerce East
Road Name: I-15 | Job Number: 10524
Road Segment: s/o Limonite Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	122,997	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	12,300	vehicles
Vehicle Speed:	70	mph
Near/Far Lane Distance:	130	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	140.0	feet
Centerline Dist. to Observer:	140.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.31%
Medium Trucks:	81.9%	5.1%	13.0%	4.59%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	6.75	-6.03	-1.20	*-4.80*	0.000	0.000
Medium Trucks:	85.95	-6.24	-6.02	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	88.97	-6.72	-6.02	-1.20	*-5.08*	0.000	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	73.0	71.6	67.8	75.4	75.9
Medium Trucks:	72.5	70.8	64.8	64.1	72.1	72.3
Heavy Trucks:	75.0	72.8	68.1	68.9	76.0	76.1
Vehicle Noise:	79.2	77.1	73.8	72.2	79.5	79.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	606	1,306	2,815	6,064
CNEL:	635	1,368	2,948	6,351

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project | Project Name: Colony Commerce East
Road Name: SR-60 | Job Number: 10524
Road Segment: w/o Archibald Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	132,223	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	13,222	vehicles
Vehicle Speed:	70	mph
Near/Far Lane Distance:	130	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	130.0	feet
Centerline Dist. to Observer:	130.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.31%
Medium Trucks:	81.9%	5.1%	13.0%	4.59%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	112.694
Medium Trucks:	112.616
Heavy Trucks:	112.623

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	7.06	-5.40	-1.20	*-4.80*	0.000	0.000
Medium Trucks:	85.95	-5.93	-5.39	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	88.97	-6.41	-5.39	-1.20	*-5.10*	0.000	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	73.9	72.6	68.8	76.3	76.8
Medium Trucks:	73.4	71.8	65.7	65.0	73.0	73.2
Heavy Trucks:	76.0	73.8	69.0	69.8	76.9	77.1
Vehicle Noise:	80.2	78.0	74.7	73.1	80.5	80.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	651	1,401	3,019	6,505
CNEL:	681	1,468	3,163	6,813

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2019 With Project | Project Name: Colony Commerce East
Road Name: SR-60 | Job Number: 10524
Road Segment: e/o Archibald Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	132,093	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	13,209	vehicles
Vehicle Speed:	70	mph
Near/Far Lane Distance:	130	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	130.0	feet
Centerline Dist. to Observer:	130.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.31%
Medium Trucks:	81.9%	5.1%	13.0%	4.59%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	112.694
Medium Trucks:	112.616
Heavy Trucks:	112.623

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	7.06	-5.40	-1.20	*-4.80*	0.000	0.000
Medium Trucks:	85.95	-5.93	-5.39	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	88.97	-6.41	-5.39	-1.20	*-5.10*	0.000	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	73.9	72.6	68.8	76.3	76.8
Medium Trucks:	73.4	71.8	65.7	65.0	73.0	73.2
Heavy Trucks:	76.0	73.8	69.0	69.8	76.9	77.1
Vehicle Noise:	80.2	78.0	74.7	73.1	80.5	80.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	650	1,401	3,018	6,503
CNEL:	681	1,467	3,161	6,811

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project
Road Name: Euclid Av.
Road Segment: s/o Merrill Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	55,339	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,534	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:	103.0	feet
Centerline Dist. to Observer:	103.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	68.593
Medium Trucks:	68.464
Heavy Trucks:	68.476

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.33	-2.16	-1.20	-4.77	0.000	0.000
Medium Trucks:	82.40	-8.68	-2.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.24	-2.15	-1.20	-5.15	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.7	70.5	69.1	65.3	72.9	73.3
Medium Trucks:	70.4	68.7	62.6	62.0	69.9	70.2
Heavy Trucks:	73.8	71.6	66.8	67.7	74.7	74.9
Vehicle Noise:	77.3	75.2	71.7	70.3	77.7	78.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	336	724	1,560	3,360
CNEL:	351	756	1,629	3,510

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project
Road Name: Euclid Av.
Road Segment: s/o Kimball Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,277	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,828	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:	103.0	feet
Centerline Dist. to Observer:	103.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	68.593
Medium Trucks:	68.464
Heavy Trucks:	68.476

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.73	-2.16	-1.20	-4.77	0.000	0.000
Medium Trucks:	82.40	-10.28	-2.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.84	-2.15	-1.20	-5.15	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	68.9	67.5	63.7	71.3	71.7
Medium Trucks:	68.8	67.1	61.0	60.4	68.3	68.6
Heavy Trucks:	72.2	70.0	65.2	66.1	73.1	73.3
Vehicle Noise:	75.7	73.6	70.1	68.7	76.1	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	263	566	1,220	2,628
CNEL:	275	592	1,274	2,746

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project
Road Name: Euclid Av.
Road Segment: s/o Pine Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	58,717	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,872	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:	103.0	feet
Centerline Dist. to Observer:	103.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	68.593
Medium Trucks:	68.464
Heavy Trucks:	68.476

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.59	-2.16	-1.20	-4.77	0.000	0.000
Medium Trucks:	82.40	-8.42	-2.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.98	-2.15	-1.20	-5.15	0.000	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	70.7	69.4	65.6	73.1	73.6
Medium Trucks:	70.6	69.0	62.9	62.2	70.2	70.4
Heavy Trucks:	74.1	71.9	67.1	67.9	75.0	75.2
Vehicle Noise:	77.6	75.4	72.0	70.6	78.0	78.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	350	753	1,622	3,495
CNEL:	365	787	1,695	3,652

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project
Road Name: Euclid Av.
Road Segment: e/o SR-71
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	56,050	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,605	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:	103.0	feet
Centerline Dist. to Observer:	103.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	68.593
Medium Trucks:	68.464
Heavy Trucks:	68.476

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	5.26	-2.16	-1.20	-4.77	0.000	0.000
Medium Trucks:	79.45	-7.75	-2.15	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.31	-2.15	-1.20	-5.15	0.000	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	68.1	66.7	62.9	70.5	70.9
Medium Trucks:	68.3	66.7	60.6	59.9	67.9	68.1
Heavy Trucks:	72.6	70.4	65.6	66.5	73.5	73.7
Vehicle Noise:	75.5	73.4	69.8	68.7	76.0	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	259	557	1,201	2,587
CNEL:	270	581	1,252	2,696

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project
Road Name: Archibald Av.
Road Segment: s/o SR-60 Ramps
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	42,014	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,201	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.55	-1.05	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	81.00	-9.46	-1.03	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.02	-1.03	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	69.2	67.9	64.1	71.6	72.1
Medium Trucks:	69.3	67.6	61.6	60.9	68.9	69.1
Heavy Trucks:	73.1	70.9	66.2	67.0	74.1	74.2
Vehicle Noise:	76.4	74.2	70.7	69.4	76.8	77.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	210	452	973	2,096
CNEL:	219	471	1,015	2,188

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project
Road Name: Archibald Av.
Road Segment: s/o Walnut St.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,883	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,388	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.61	-1.05	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	81.00	-10.40	-1.03	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.95	-1.03	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	68.3	66.9	63.1	70.7	71.1
Medium Trucks:	68.4	66.7	60.6	60.0	67.9	68.2
Heavy Trucks:	72.2	70.0	65.2	66.1	73.1	73.3
Vehicle Noise:	75.4	73.3	69.7	68.5	75.8	76.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	182	391	843	1,816
CNEL:	190	408	880	1,895

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project
Road Name: Archibald Av.
Road Segment: s/o Riverside Dr.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	41,501	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,150	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.08	-1.05	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	82.40	-9.93	-1.03	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.49	-1.03	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.6	70.3	69.0	65.2	72.7	73.2
Medium Trucks:	70.2	68.6	62.5	61.8	69.8	70.0
Heavy Trucks:	73.7	71.5	66.7	67.5	74.6	74.8
Vehicle Noise:	77.2	75.1	71.6	70.2	77.6	77.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	237	510	1,098	2,367
CNEL:	247	533	1,148	2,472

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project
Road Name: Archibald Av.
Road Segment: s/o Chino Rd.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,241	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,024	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.95	-1.05	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	82.40	-10.07	-1.03	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.62	-1.03	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	70.2	68.8	65.0	72.6	73.1
Medium Trucks:	70.1	68.5	62.4	61.7	69.7	69.9
Heavy Trucks:	73.5	71.3	66.6	67.4	74.5	74.7
Vehicle Noise:	77.0	74.9	71.4	70.1	77.4	77.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	232	499	1,076	2,318
CNEL:	242	522	1,124	2,422

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project
Road Name: Archibald Av.
Road Segment: s/o Schaefer Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,657	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,766	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.66	-1.05	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	82.40	-10.35	-1.03	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.91	-1.03	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.2	69.9	68.5	64.7	72.3	72.8
Medium Trucks:	69.8	68.2	62.1	61.4	69.4	69.6
Heavy Trucks:	73.3	71.0	66.3	67.1	74.2	74.4
Vehicle Noise:	76.8	74.6	71.1	69.8	77.2	77.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	222	478	1,030	2,218
CNEL:	232	499	1,076	2,317

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project
Road Name: Archibald Av.
Road Segment: s/o Ontario Ranch Rd.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,907	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,491	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.42	-1.05	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	82.40	-9.59	-1.03	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.14	-1.03	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.0	70.7	69.3	65.5	73.1	73.5
Medium Trucks:	70.6	68.9	62.9	62.2	70.2	70.4
Heavy Trucks:	74.0	71.8	67.1	67.9	75.0	75.1
Vehicle Noise:	77.5	75.4	71.9	70.6	77.9	78.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	249	537	1,158	2,494
CNEL:	261	561	1,210	2,606

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project
Road Name: Archibald Av.
Road Segment: s/o Eucalyptus Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,932	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,593	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.52	-1.05	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	82.40	-9.49	-1.03	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.04	-1.03	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.1	70.8	69.4	65.6	73.2	73.6
Medium Trucks:	70.7	69.0	63.0	62.3	70.3	70.5
Heavy Trucks:	74.1	71.9	67.2	68.0	75.1	75.2
Vehicle Noise:	77.6	75.5	72.0	70.7	78.0	78.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	253	546	1,175	2,532
CNEL:	265	570	1,228	2,645

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project
Road Name: Archibald Av.
Road Segment: s/o Merrill Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,201	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,720	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.64	-1.05	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	82.40	-9.37	-1.03	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.93	-1.03	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.2	70.9	69.5	65.7	73.3	73.7
Medium Trucks:	70.8	69.1	63.1	62.4	70.4	70.6
Heavy Trucks:	74.2	72.0	67.3	68.1	75.2	75.4
Vehicle Noise:	77.7	75.6	72.1	70.8	78.1	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	258	556	1,197	2,579
CNEL:	269	580	1,250	2,694

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project
Road Name: Archibald Av.
Road Segment: s/o Limonite Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		***Site Conditions (Hard = 10, Soft = 15)***	
Average Daily Traffic (Adt):	45,662 vehicles	*Autos:*	15
Peak Hour Percentage:	10%	*Medium Trucks (2 Axles):*	15
Peak Hour Volume:	4,566 vehicles	*Heavy Trucks (3+ Axles):*	15
Vehicle Speed:	50 mph		
Near/Far Lane Distance:	78 feet		
Site Data			
Barrier Height:	**0.0 feet**		
Barrier Type (0-Wall, 1-Berm):	0.0		
Centerline Dist. to Barrier:	76.0 feet		
Centerline Dist. to Observer:	76.0 feet		
Barrier Distance to Observer:	0.0 feet		
Observer Height (Above Pad):	5.0 feet		
Pad Elevation:	0.0 feet		
Road Elevation:	0.0 feet		
Road Grade:	0.0%		
Left View:	-90.0 degrees		
Right View:	90.0 degrees		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.91	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	81.00	-9.10	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.66	-1.84	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	68.8	67.4	63.6	71.2	71.6
Medium Trucks:	68.9	67.2	61.1	60.5	68.4	68.6
Heavy Trucks:	72.7	70.5	65.7	66.5	73.6	73.8
Vehicle Noise:	75.9	73.8	70.2	69.0	76.3	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	201	433	933	2,009
CNEL:	210	452	973	2,097

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project
Road Name: Ontario Ranch Rd.
Road Segment: e/o Archibald Av,
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		***Site Conditions (Hard = 10, Soft = 15)***	
Average Daily Traffic (Adt):	26,926 vehicles	*Autos:*	15
Peak Hour Percentage:	10%	*Medium Trucks (2 Axles):*	15
Peak Hour Volume:	2,693 vehicles	*Heavy Trucks (3+ Axles):*	15
Vehicle Speed:	50 mph		
Near/Far Lane Distance:	115 feet		
Site Data			
Barrier Height:	**0.0 feet**		
Barrier Type (0-Wall, 1-Berm):	0.0		
Centerline Dist. to Barrier:	80.0 feet		
Centerline Dist. to Observer:	80.0 feet		
Barrier Distance to Observer:	0.0 feet		
Observer Height (Above Pad):	5.0 feet		
Pad Elevation:	0.0 feet		
Road Elevation:	0.0 feet		
Road Grade:	0.0%		
Left View:	-90.0 degrees		
Right View:	90.0 degrees		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	55.846
Medium Trucks:	55.687
Heavy Trucks:	55.703

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.62	-0.82	-1.20	*-4.74*	0.000	0.000
Medium Trucks:	81.00	-11.40	-0.81	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-11.95	-0.81	-1.20	*-5.23*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	67.5	66.1	62.3	69.9	70.4
Medium Trucks:	67.6	65.9	59.9	59.2	67.2	67.4
Heavy Trucks:	71.4	69.2	64.5	65.3	72.4	72.5
Vehicle Noise:	74.6	72.5	69.0	67.7	75.1	75.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	174	376	809	1,743
CNEL:	182	392	844	1,819

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project
Road Name: Ontario Ranch Rd.
Road Segment: e/o Hamner Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		***Site Conditions (Hard = 10, Soft = 15)***	
Average Daily Traffic (Adt):	41,761 vehicles	*Autos:*	15
Peak Hour Percentage:	10%	*Medium Trucks (2 Axles):*	15
Peak Hour Volume:	4,176 vehicles	*Heavy Trucks (3+ Axles):*	15
Vehicle Speed:	50 mph		
Near/Far Lane Distance:	115 feet		
Site Data			
Barrier Height:	**0.0 feet**		
Barrier Type (0-Wall, 1-Berm):	0.0		
Centerline Dist. to Barrier:	80.0 feet		
Centerline Dist. to Observer:	80.0 feet		
Barrier Distance to Observer:	0.0 feet		
Observer Height (Above Pad):	5.0 feet		
Pad Elevation:	0.0 feet		
Road Elevation:	0.0 feet		
Road Grade:	0.0%		
Left View:	-90.0 degrees		
Right View:	90.0 degrees		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	55.846
Medium Trucks:	55.687
Heavy Trucks:	55.703

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.52	-0.82	-1.20	*-4.74*	0.000	0.000
Medium Trucks:	81.00	-9.49	-0.81	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.04	-0.81	-1.20	*-5.23*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	69.4	68.1	64.3	71.8	72.3
Medium Trucks:	69.5	67.8	61.8	61.1	69.1	69.3
Heavy Trucks:	73.3	71.1	66.4	67.2	74.3	74.4
Vehicle Noise:	76.6	74.4	70.9	69.6	77.0	77.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	234	503	1,084	2,335
CNEL:	244	525	1,131	2,437

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project
Road Name: Merrill Av.
Road Segment: e/o Euclid Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		***Site Conditions (Hard = 10, Soft = 15)***	
Average Daily Traffic (Adt):	30,367 vehicles	*Autos:*	15
Peak Hour Percentage:	10%	*Medium Trucks (2 Axles):*	15
Peak Hour Volume:	3,037 vehicles	*Heavy Trucks (3+ Axles):*	15
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		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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	2.14	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-10.87	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-11.43	1.31	-1.20	*-5.50*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.4	70.1	68.8	65.0	72.5	73.0
Medium Trucks:	70.2	68.6	62.5	61.8	69.8	70.0
Heavy Trucks:	74.1	71.8	67.1	67.9	75.0	75.2
Vehicle Noise:	77.3	75.2	71.6	70.4	77.7	78.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	144	309	667	1,436
CNEL:	150	323	696	1,499

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project
Road Name: Merrill Av.
Road Segment: e/o Grove Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		***Site Conditions (Hard = 10, Soft = 15)***	
Average Daily Traffic (Adt):	33,785 vehicles	*Autos:*	15
Peak Hour Percentage:	10%	*Medium Trucks (2 Axles):*	15
Peak Hour Volume:	3,379 vehicles	*Heavy Trucks (3+ Axles):*	15
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		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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	2.60	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-10.41	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-10.96	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:	72.9	70.6	69.2	65.4	73.0	73.5
Medium Trucks:	70.7	69.0	63.0	62.3	70.3	70.5
Heavy Trucks:	74.5	72.3	67.6	68.4	75.5	75.6
Vehicle Noise:	77.7	75.6	72.1	70.8	78.2	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	154	332	716	1,542
CNEL:	161	347	747	1,609

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project
Road Name: Merrill Av.
Road Segment: e/o Flight Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		***Site Conditions (Hard = 10, Soft = 15)***	
Average Daily Traffic (Adt):	31,884 vehicles	*Autos:*	15
Peak Hour Percentage:	10%	*Medium Trucks (2 Axles):*	15
Peak Hour Volume:	3,188 vehicles	*Heavy Trucks (3+ Axles):*	15
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		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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	2.35	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-10.66	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-11.22	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:	72.6	70.3	69.0	65.2	72.7	73.2
Medium Trucks:	70.4	68.8	62.7	62.1	70.0	70.2
Heavy Trucks:	74.3	72.1	67.3	68.1	75.2	75.4
Vehicle Noise:	77.5	75.4	71.8	70.6	77.9	78.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	148	320	689	1,484
CNEL:	155	334	719	1,548

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project
Road Name: Merrill Av.
Road Segment: e/o Hellman Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		***Site Conditions (Hard = 10, Soft = 15)***	
Average Daily Traffic (Adt):	30,068 vehicles	*Autos:*	15
Peak Hour Percentage:	10%	*Medium Trucks (2 Axles):*	15
Peak Hour Volume:	3,007 vehicles	*Heavy Trucks (3+ Axles):*	15
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		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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	2.10	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-10.92	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-11.47	1.31	-1.20	*-5.50*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.4	70.1	68.7	64.9	72.5	72.9
Medium Trucks:	70.2	68.5	62.5	61.8	69.8	70.0
Heavy Trucks:	74.0	71.8	67.0	67.9	74.9	75.1
Vehicle Noise:	77.2	75.1	71.5	70.3	77.7	77.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	307	662	1,427
CNEL:	149	321	691	1,489

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project
Road Name: Merrill Av.
Road Segment: e/o Archibald Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		***Site Conditions (Hard = 10, Soft = 15)***	
Average Daily Traffic (Adt):	7,745 vehicles	*Autos:*	15
Peak Hour Percentage:	10%	*Medium Trucks (2 Axles):*	15
Peak Hour Volume:	775 vehicles	*Heavy Trucks (3+ Axles):*	15
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		

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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	-3.79	1.28	-1.20	*-4.61*	0.000	0.000
Medium Trucks:	81.00	-16.81	1.31	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	85.38	-17.36	1.31	-1.20	*-5.50*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	64.2	62.8	59.0	66.6	67.1
Medium Trucks:	64.3	62.6	56.6	55.9	63.9	64.1
Heavy Trucks:	68.1	65.9	61.2	62.0	69.1	69.2
Vehicle Noise:	71.3	69.2	65.7	64.4	71.8	72.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	124	268	578
CNEL:	60	130	280	603

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project
Road Name: Bellgrave Av.
Road Segment: w/o Hamner Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,904 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,090 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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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	-2.31	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-15.32	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.88	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:	68.0	65.7	64.3	60.5	68.1	68.5
Medium Trucks:	65.8	64.1	58.1	57.4	65.4	65.6
Heavy Trucks:	69.6	67.4	62.6	63.5	70.5	70.7
Vehicle Noise:	72.8	70.7	67.1	65.9	73.3	73.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	156	337	726
CNEL:	76	163	351	757

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project
Road Name: Kimball Av.
Road Segment: e/o Hellman Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,112 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,911 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	78 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	76.0 feet
Centerline Dist. to Observer:	76.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.96	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-11.06	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-11.61	-1.84	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	66.8	65.5	61.7	69.2	69.7
Medium Trucks:	66.9	65.2	59.2	58.5	66.5	66.7
Heavy Trucks:	70.7	68.5	63.8	64.6	71.7	71.8
Vehicle Noise:	74.0	71.8	68.3	67.0	74.4	74.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	149	321	691	1,488
CNEL:	155	335	721	1,553

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project
Road Name: Limonite
Road Segment: e/o Archibald Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,452 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,745 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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	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	4.54	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-8.48	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.03	-1.84	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	67.7	66.3	62.5	70.0	70.5
Medium Trucks:	67.9	66.3	60.2	59.5	67.5	67.7
Heavy Trucks:	72.2	70.0	65.2	66.0	73.1	73.3
Vehicle Noise:	75.1	73.0	69.4	68.3	75.6	75.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	179	386	831	1,791
CNEL:	187	402	867	1,867

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project
Road Name: Limonite
Road Segment: e/o Harrison Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	50,961 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,096 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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	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	4.84	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	79.45	-8.17	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-8.72	-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	68.0	66.6	62.8	70.4	70.8
Medium Trucks:	68.2	66.6	60.5	59.8	67.8	68.0
Heavy Trucks:	72.5	70.3	65.5	66.4	73.4	73.6
Vehicle Noise:	75.4	73.3	69.7	68.6	75.9	76.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	188	405	872	1,878
CNEL:	196	422	909	1,958

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project | Project Name: Colony Commerce East
Road Name: Limonite | Job Number: 10524
Road Segment: e/o Sumner Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	50,301	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,030	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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	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	-8.22	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.78	-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	67.9	66.5	62.7	70.3	70.8
Medium Trucks:	68.2	66.5	60.5	59.8	67.8	68.0
Heavy Trucks:	72.4	70.2	65.5	66.3	73.4	73.5
Vehicle Noise:	75.4	73.3	69.6	68.5	75.8	76.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	186	401	864	1,862
CNEL:	194	418	901	1,941

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project | Project Name: Colony Commerce East
Road Name: Limonite | Job Number: 10524
Road Segment: e/o Scholar Wy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	50,503	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,050	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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	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	-8.21	-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:	70.2	67.9	66.6	62.8	70.3	70.8
Medium Trucks:	68.2	66.5	60.5	59.8	67.8	68.0
Heavy Trucks:	72.4	70.2	65.5	66.3	73.4	73.6
Vehicle Noise:	75.4	73.3	69.6	68.5	75.9	76.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	187	402	867	1,867
CNEL:	195	419	903	1,946

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project | Project Name: Colony Commerce East
Road Name: Limonite | Job Number: 10524
Road Segment: e/o Hamner Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	54,674	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,467	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:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	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	5.15	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-7.86	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.42	-1.84	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	68.3	66.9	63.1	70.7	71.1
Medium Trucks:	68.5	66.9	60.8	60.2	68.1	68.3
Heavy Trucks:	72.8	70.6	65.8	66.7	73.7	73.9
Vehicle Noise:	75.7	73.6	70.0	68.9	76.2	76.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	197	424	914	1,968
CNEL:	205	442	952	2,052

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project | Project Name: Colony Commerce East
Road Name: SR-71 | Job Number: 10524
Road Segment: n/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	131,390	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	13,139	vehicles
Vehicle Speed:	70	mph
Near/Far Lane Distance:	130	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	140.0	feet
Centerline Dist. to Observer:	140.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	7.04	-6.03	-1.20	*-4.80*	0.000	0.000
Medium Trucks:	85.95	-5.97	-6.02	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	88.97	-6.53	-6.02	-1.20	*-5.08*	0.000	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	73.3	71.9	68.1	75.7	76.2
Medium Trucks:	72.8	71.1	65.0	64.4	72.3	72.5
Heavy Trucks:	75.2	73.0	68.3	69.1	76.2	76.3
Vehicle Noise:	79.5	77.3	74.1	72.4	79.8	80.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	630	1,357	2,923	6,297
CNEL:	660	1,421	3,062	6,596

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project
Road Name: SR-71
Road Segment: s/o Euclid Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	145,930	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	14,593	vehicles
Vehicle Speed:	70	mph
Near/Far Lane Distance:	130	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	140.0	feet
Centerline Dist. to Observer:	140.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	7.50	-6.03	-1.20	-4.80	0.000	0.000
Medium Trucks:	85.95	-5.52	-6.02	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.97	-6.07	-6.02	-1.20	-5.08	0.000	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	73.8	72.4	68.6	76.1	76.6
Medium Trucks:	73.2	71.6	65.5	64.8	72.8	73.0
Heavy Trucks:	75.7	73.5	68.7	69.5	76.6	76.8
Vehicle Noise:	79.9	77.8	74.5	72.8	80.3	80.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	675	1,455	3,134	6,753
CNEL:	707	1,524	3,284	7,074

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project
Road Name: I-15
Road Segment: n/o Cantu-Galleano Ranch Rd.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	89,480	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	8,948	vehicles
Vehicle Speed:	70	mph
Near/Far Lane Distance:	130	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	140.0	feet
Centerline Dist. to Observer:	140.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	5.37	-6.03	-1.20	-4.80	0.000	0.000
Medium Trucks:	85.95	-7.64	-6.02	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.97	-8.20	-6.02	-1.20	-5.08	0.000	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	71.6	70.3	66.5	74.0	74.5
Medium Trucks:	71.1	69.4	63.4	62.7	70.7	70.9
Heavy Trucks:	73.6	71.3	66.6	67.4	74.5	74.7
Vehicle Noise:	77.8	75.7	72.4	70.7	78.1	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	487	1,050	2,262	4,874
CNEL:	511	1,100	2,370	5,106

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project
Road Name: I-15
Road Segment: s/o Cantu-Galleano Ranch Rd.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	86,590	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	8,659	vehicles
Vehicle Speed:	70	mph
Near/Far Lane Distance:	130	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	140.0	feet
Centerline Dist. to Observer:	140.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	5.23	-6.03	-1.20	-4.80	0.000	0.000
Medium Trucks:	85.95	-7.78	-6.02	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.97	-8.34	-6.02	-1.20	-5.08	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.8	71.5	70.1	66.3	73.9	74.3
Medium Trucks:	70.9	69.3	63.2	62.6	70.5	70.7
Heavy Trucks:	73.4	71.2	66.4	67.3	74.3	74.5
Vehicle Noise:	77.7	75.5	72.3	70.6	78.0	78.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	477	1,027	2,213	4,768
CNEL:	500	1,076	2,319	4,995

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project
Road Name: I-15
Road Segment: s/o Limonite Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	100,660	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	10,066	vehicles
Vehicle Speed:	70	mph
Near/Far Lane Distance:	130	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	140.0	feet
Centerline Dist. to Observer:	140.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	5.88	-6.03	-1.20	-4.80	0.000	0.000
Medium Trucks:	85.95	-7.13	-6.02	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.97	-7.68	-6.02	-1.20	-5.08	0.000	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	72.1	70.8	67.0	74.5	75.0
Medium Trucks:	71.6	69.9	63.9	63.2	71.2	71.4
Heavy Trucks:	74.1	71.9	67.1	67.9	75.0	75.2
Vehicle Noise:	78.3	76.2	72.9	71.2	78.6	78.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	527	1,136	2,447	5,272
CNEL:	552	1,190	2,563	5,523

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project | Project Name: Colony Commerce East
Road Name: SR-60 | Job Number: 10524
Road Segment: w/o Archibald Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	142,920 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	14,292 vehicles
Vehicle Speed:	70 mph
Near/Far Lane Distance:	130 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	130.0 feet
Centerline Dist. to Observer:	130.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	112.694
Medium Trucks:	112.616
Heavy Trucks:	112.623

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	7.40	-5.40	-1.20	*-4.80*	0.000	0.000
Medium Trucks:	85.95	-5.61	-5.39	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	88.97	-6.16	-5.39	-1.20	*-5.10*	0.000	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	74.3	72.9	69.1	76.7	77.2
Medium Trucks:	73.8	72.1	66.0	65.4	73.3	73.5
Heavy Trucks:	76.2	74.0	69.2	70.1	77.1	77.3
Vehicle Noise:	80.5	78.3	75.1	73.4	80.8	81.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	681	1,467	3,161	6,810
CNEL:	713	1,537	3,311	7,134

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 Without Project | Project Name: Colony Commerce East
Road Name: SR-60 | Job Number: 10524
Road Segment: e/o Archibald Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	145,470 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	14,547 vehicles
Vehicle Speed:	70 mph
Near/Far Lane Distance:	130 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	130.0 feet
Centerline Dist. to Observer:	130.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	112.694
Medium Trucks:	112.616
Heavy Trucks:	112.623

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	7.48	-5.40	-1.20	*-4.80*	0.000	0.000
Medium Trucks:	85.95	-5.53	-5.39	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	88.97	-6.09	-5.39	-1.20	*-5.10*	0.000	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	74.4	73.0	69.2	76.8	77.2
Medium Trucks:	73.8	72.2	66.1	65.4	73.4	73.6
Heavy Trucks:	76.3	74.1	69.3	70.2	77.2	77.4
Vehicle Noise:	80.5	78.4	75.1	73.5	80.9	81.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	689	1,485	3,198	6,891
CNEL:	722	1,555	3,351	7,219

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project | Project Name: Colony Commerce East
Road Name: Euclid Av. | Job Number: 10524
Road Segment: s/o Merrill Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	55,492 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	5,549 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	154 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	103.0 feet
Centerline Dist. to Observer:	103.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.16%
Medium Trucks:	81.9%	5.1%	13.0%	4.62%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	68.593
Medium Trucks:	68.464
Heavy Trucks:	68.476

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.33	-2.16	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	82.40	-8.62	-2.15	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.01	-2.15	-1.20	*-5.15*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.7	70.5	69.1	65.3	72.9	73.3
Medium Trucks:	70.4	68.8	62.7	62.0	70.0	70.2
Heavy Trucks:	74.0	71.8	67.1	67.9	75.0	75.1
Vehicle Noise:	77.4	75.3	71.8	70.5	77.8	78.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	342	738	1,589	3,424
CNEL:	358	770	1,660	3,576

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project | Project Name: Colony Commerce East
Road Name: Euclid Av. | Job Number: 10524
Road Segment: s/o Kimball Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,447 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,845 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:	103.0 feet
Centerline Dist. to Observer:	103.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.05%
Medium Trucks:	81.9%	5.1%	13.0%	4.64%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	68.593
Medium Trucks:	68.464
Heavy Trucks:	68.476

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.73	-2.16	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	82.40	-10.19	-2.15	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.52	-2.15	-1.20	*-5.15*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	68.9	67.5	63.7	71.3	71.7
Medium Trucks:	68.9	67.2	61.1	60.5	68.4	68.6
Heavy Trucks:	72.5	70.3	65.6	66.4	73.5	73.6
Vehicle Noise:	75.9	73.7	70.2	68.9	76.3	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	270	582	1,254	2,701
CNEL:	282	608	1,309	2,820

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project
Road Name: Euclid Av.
Road Segment: s/o Pine Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	58,955	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,895	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:	103.0	feet
Centerline Dist. to Observer:	103.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.19%
Medium Trucks:	81.9%	5.1%	13.0%	4.61%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	68.593
Medium Trucks:	68.464
Heavy Trucks:	68.476

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.60	-2.16	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	82.40	-8.36	-2.15	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-8.77	-2.15	-1.20	*-5.15*	0.000	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	70.7	69.4	65.6	73.1	73.6
Medium Trucks:	70.7	69.0	63.0	62.3	70.3	70.5
Heavy Trucks:	74.3	72.1	67.3	68.1	75.2	75.4
Vehicle Noise:	77.7	75.5	72.0	70.7	78.1	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	356	767	1,652	3,560
CNEL:	372	801	1,726	3,717

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project
Road Name: Euclid Av.
Road Segment: e/o SR-71
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	56,288	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,629	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:	103.0	feet
Centerline Dist. to Observer:	103.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.18%
Medium Trucks:	81.9%	5.1%	13.0%	4.61%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	68.593
Medium Trucks:	68.464
Heavy Trucks:	68.476

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	5.27	-2.16	-1.20	*-4.77*	0.000	0.000
Medium Trucks:	79.45	-7.69	-2.15	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.09	-2.15	-1.20	*-5.15*	0.000	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	68.1	66.7	62.9	70.5	70.9
Medium Trucks:	68.4	66.7	60.7	60.0	68.0	68.2
Heavy Trucks:	72.8	70.6	65.8	66.7	73.7	73.9
Vehicle Noise:	75.7	73.5	69.9	68.8	76.1	76.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	264	569	1,226	2,641
CNEL:	275	593	1,278	2,752

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project
Road Name: Archibald Av.
Road Segment: s/o SR-60 Ramps
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	42,489	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,249	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.79%
Medium Trucks:	81.9%	5.1%	13.0%	4.69%
Heavy Trucks:	72.1%	6.0%	21.9%	4.52%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.57	-1.05	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	81.00	-9.30	-1.03	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.46	-1.03	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	69.2	67.9	64.1	71.6	72.1
Medium Trucks:	69.5	67.8	61.7	61.1	69.0	69.3
Heavy Trucks:	73.7	71.5	66.7	67.6	74.6	74.8
Vehicle Noise:	76.7	74.5	70.9	69.8	77.1	77.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	221	476	1,025	2,208
CNEL:	230	496	1,068	2,302

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project
Road Name: Archibald Av.
Road Segment: s/o Walnut St.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,358	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,436	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.64%
Medium Trucks:	81.9%	5.1%	13.0%	4.72%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.64	-1.05	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	81.00	-10.20	-1.03	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-10.27	-1.03	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	68.3	66.9	63.1	70.7	71.2
Medium Trucks:	68.6	66.9	60.9	60.2	68.1	68.4
Heavy Trucks:	72.9	70.7	65.9	66.7	73.8	74.0
Vehicle Noise:	75.8	73.7	70.0	68.9	76.3	76.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	194	417	898	1,936
CNEL:	202	435	937	2,018

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project | Project Name: Colony Commerce East
Road Name: Archibald Av. | Job Number: 10524
Road Segment: s/o Riverside Dr.

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	42,010 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	4,201 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	55 mph		
Near/Far Lane Distance:	93 feet		
Site Data		**Vehicle Mix**	
Barrier Height:	**0.0 feet**		
Barrier Type (0-Wall, 1-Berm):	0.0		
Centerline Dist. to Barrier:	74.0 feet		
Centerline Dist. to Observer:	74.0 feet		
Barrier Distance to Observer:	0.0 feet		
Observer Height (Above Pad):	5.0 feet		
Pad Elevation:	0.0 feet		
Road Elevation:	0.0 feet		
Road Grade:	0.0%		
Left View:	-90.0 degrees		
Right View:	90.0 degrees		

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.79%
Medium Trucks:	81.9%	5.1%	13.0%	4.69%
Heavy Trucks:	72.1%	6.0%	21.9%	4.52%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.10	-1.05	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	82.40	-9.76	-1.03	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.92	-1.03	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.6	70.4	69.0	65.2	72.7	73.2
Medium Trucks:	70.4	68.8	62.7	62.0	70.0	70.2
Heavy Trucks:	74.2	72.0	67.3	68.1	75.2	75.4
Vehicle Noise:	77.5	75.4	71.8	70.6	77.9	78.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	249	536	1,155	2,489
CNEL:	260	560	1,206	2,598

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project | Project Name: Colony Commerce East
Road Name: Archibald Av. | Job Number: 10524
Road Segment: s/o Chino Rd.

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	40,767 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	4,077 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	55 mph		
Near/Far Lane Distance:	93 feet		
Site Data		**Vehicle Mix**	
Barrier Height:	**0.0 feet**		
Barrier Type (0-Wall, 1-Berm):	0.0		
Centerline Dist. to Barrier:	74.0 feet		
Centerline Dist. to Observer:	74.0 feet		
Barrier Distance to Observer:	0.0 feet		
Observer Height (Above Pad):	5.0 feet		
Pad Elevation:	0.0 feet		
Road Elevation:	0.0 feet		
Road Grade:	0.0%		
Left View:	-90.0 degrees		
Right View:	90.0 degrees		

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.77%
Medium Trucks:	81.9%	5.1%	13.0%	4.69%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.97	-1.05	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	82.40	-9.89	-1.03	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.04	-1.03	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	70.2	68.9	65.1	72.6	73.1
Medium Trucks:	70.3	68.6	62.6	61.9	69.8	70.1
Heavy Trucks:	74.1	71.9	67.2	68.0	75.1	75.2
Vehicle Noise:	77.4	75.2	71.7	70.4	77.8	78.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	244	526	1,134	2,442
CNEL:	255	549	1,183	2,549

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project | Project Name: Colony Commerce East
Road Name: Archibald Av. | Job Number: 10524
Road Segment: s/o Schaefer Av.

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	38,200 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	3,820 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	55 mph		
Near/Far Lane Distance:	93 feet		
Site Data		**Vehicle Mix**	
Barrier Height:	**0.0 feet**		
Barrier Type (0-Wall, 1-Berm):	0.0		
Centerline Dist. to Barrier:	74.0 feet		
Centerline Dist. to Observer:	74.0 feet		
Barrier Distance to Observer:	0.0 feet		
Observer Height (Above Pad):	5.0 feet		
Pad Elevation:	0.0 feet		
Road Elevation:	0.0 feet		
Road Grade:	0.0%		
Left View:	-90.0 degrees		
Right View:	90.0 degrees		

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.73%
Medium Trucks:	81.9%	5.1%	13.0%	4.70%
Heavy Trucks:	72.1%	6.0%	21.9%	4.57%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.69	-1.05	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	82.40	-10.17	-1.03	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-10.29	-1.03	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.2	69.9	68.6	64.8	72.3	72.8
Medium Trucks:	70.0	68.3	62.3	61.6	69.6	69.8
Heavy Trucks:	73.9	71.7	66.9	67.7	74.8	75.0
Vehicle Noise:	77.1	75.0	71.4	70.2	77.5	77.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	234	505	1,088	2,345
CNEL:	245	527	1,136	2,447

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project | Project Name: Colony Commerce East
Road Name: Archibald Av. | Job Number: 10524
Road Segment: s/o Ontario Ranch Rd.

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS	
Highway Data		**Site Conditions (Hard = 10, Soft = 15)**	
Average Daily Traffic (Adt):	45,907 vehicles	Autos:	15
Peak Hour Percentage:	10%	Medium Trucks (2 Axles):	15
Peak Hour Volume:	4,591 vehicles	Heavy Trucks (3+ Axles):	15
Vehicle Speed:	55 mph		
Near/Far Lane Distance:	93 feet		
Site Data		**Vehicle Mix**	
Barrier Height:	**0.0 feet**		
Barrier Type (0-Wall, 1-Berm):	0.0		
Centerline Dist. to Barrier:	74.0 feet		
Centerline Dist. to Observer:	74.0 feet		
Barrier Distance to Observer:	0.0 feet		
Observer Height (Above Pad):	5.0 feet		
Pad Elevation:	0.0 feet		
Road Elevation:	0.0 feet		
Road Grade:	0.0%		
Left View:	-90.0 degrees		
Right View:	90.0 degrees		

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.60%
Medium Trucks:	81.9%	5.1%	13.0%	4.71%
Heavy Trucks:	72.1%	6.0%	21.9%	4.69%

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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.48	-1.05	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	82.40	-9.36	-1.03	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.38	-1.03	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.0	70.7	69.4	65.6	73.1	73.6
Medium Trucks:	70.8	69.2	63.1	62.4	70.4	70.6
Heavy Trucks:	74.8	72.6	67.8	68.7	75.7	75.9
Vehicle Noise:	77.9	75.8	72.2	71.0	78.4	78.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	268	576	1,242	2,675
CNEL:	279	601	1,296	2,791

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project
Road Name: Archibald Av.
Road Segment: s/o Eucalyptus Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	46,949	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,695	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	90.62%
Medium Trucks:	81.9%	5.1%	13.0%	4.70%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.58	-1.05	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	82.40	-9.27	-1.03	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.29	-1.03	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.1	70.8	69.5	65.7	73.2	73.7
Medium Trucks:	70.9	69.2	63.2	62.5	70.5	70.7
Heavy Trucks:	74.9	72.7	67.9	68.7	75.8	76.0
Vehicle Noise:	78.0	75.9	72.3	71.1	78.5	78.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	271	584	1,259	2,712
CNEL:	283	610	1,313	2,830

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project
Road Name: Archibald Av.
Road Segment: s/o Merrill Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,752	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,775	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	93	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	74.0	feet
Centerline Dist. to Observer:	74.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.03%
Medium Trucks:	81.9%	5.1%	13.0%	4.63%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	57.782
Medium Trucks:	57.629
Heavy Trucks:	57.644

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.67	-1.05	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	82.40	-9.26	-1.03	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-9.55	-1.03	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.2	70.9	69.6	65.8	73.3	73.8
Medium Trucks:	70.9	69.3	63.2	62.5	70.5	70.7
Heavy Trucks:	74.6	72.4	67.7	68.5	75.6	75.7
Vehicle Noise:	77.9	75.8	72.3	71.0	78.4	78.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	267	575	1,239	2,669
CNEL:	279	600	1,293	2,787

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project
Road Name: Archibald Av.
Road Segment: s/o Limonite Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,831	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,583	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	78	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	76.0	feet
Centerline Dist. to Observer:	76.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.44%
Medium Trucks:	81.9%	5.1%	13.0%	4.55%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.93	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	81.00	-9.10	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.66	-1.84	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	68.8	67.4	63.6	71.2	71.6
Medium Trucks:	68.9	67.2	61.1	60.5	68.4	68.6
Heavy Trucks:	72.7	70.5	65.7	66.5	73.6	73.8
Vehicle Noise:	75.9	73.8	70.2	69.0	76.3	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	201	433	933	2,011
CNEL:	210	452	974	2,099

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project
Road Name: Ontario Ranch Rd.
Road Segment: e/o Archibald Av,
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,384	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,738	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	115	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	80.0	feet
Centerline Dist. to Observer:	80.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.00%
Medium Trucks:	81.9%	5.1%	13.0%	4.63%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	55.846
Medium Trucks:	55.687
Heavy Trucks:	55.703

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.67	-0.82	-1.20	*-4.74*	0.000	0.000
Medium Trucks:	81.00	-11.27	-0.81	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-11.51	-0.81	-1.20	*-5.23*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	67.6	66.2	62.4	70.0	70.4
Medium Trucks:	67.7	66.1	60.0	59.3	67.3	67.5
Heavy Trucks:	71.9	69.6	64.9	65.7	72.8	73.0
Vehicle Noise:	74.9	72.8	69.2	68.0	75.4	75.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	182	392	844	1,819
CNEL:	190	409	880	1,897

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project
Road Name: Ontario Ranch Rd.
Road Segment: e/o Hamner Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	42,219 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,222 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	115 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	80.0 feet
Centerline Dist. to Observer:	80.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.14%
Medium Trucks:	81.9%	5.1%	13.0%	4.61%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	55.846
Medium Trucks:	55.687
Heavy Trucks:	55.703

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.56	-0.82	-1.20	-4.74	0.000	0.000
Medium Trucks:	81.00	-9.41	-0.81	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-9.75	-0.81	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	69.4	68.1	64.3	71.8	72.3
Medium Trucks:	69.6	67.9	61.9	61.2	69.2	69.4
Heavy Trucks:	73.6	71.4	66.6	67.5	74.5	74.7
Vehicle Noise:	76.7	74.6	71.0	69.8	77.2	77.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	240	517	1,115	2,401
CNEL:	250	540	1,163	2,505

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project
Road Name: Merrill Av.
Road Segment: e/o Euclid Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,639 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,064 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:	70.9%	12.9%	16.2%	90.99%
Medium Trucks:	81.9%	5.1%	13.0%	4.65%
Heavy Trucks:	72.1%	6.0%	21.9%	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	2.16	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.76	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-11.03	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:	72.4	70.1	68.8	65.0	72.5	73.0
Medium Trucks:	70.4	68.7	62.6	62.0	69.9	70.1
Heavy Trucks:	74.5	72.2	67.5	68.3	75.4	75.6
Vehicle Noise:	77.5	75.4	71.8	70.6	77.9	78.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	149	321	691	1,490
CNEL:	155	335	721	1,554

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project
Road Name: Merrill Av.
Road Segment: e/o Grove Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	34,124 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,412 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:	70.9%	12.9%	16.2%	91.05%
Medium Trucks:	81.9%	5.1%	13.0%	4.63%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.63	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.31	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-10.61	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:	72.9	70.6	69.3	65.5	73.0	73.5
Medium Trucks:	70.8	69.1	63.1	62.4	70.4	70.6
Heavy Trucks:	74.9	72.7	67.9	68.7	75.8	76.0
Vehicle Noise:	77.9	75.8	72.2	71.1	78.4	78.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	159	343	740	1,594
CNEL:	166	358	772	1,663

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project
Road Name: Merrill Av.
Road Segment: e/o Flight Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,257 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,226 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:	70.9%	12.9%	16.2%	91.04%
Medium Trucks:	81.9%	5.1%	13.0%	4.63%
Heavy Trucks:	72.1%	6.0%	21.9%	4.33%

Noise Source Elevations (in feet)

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

Lane Equivalent Distance (in feet)

Autos:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.38	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.55	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-10.84	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.7	70.4	69.0	65.2	72.8	73.2
Medium Trucks:	70.6	68.9	62.8	62.2	70.1	70.3
Heavy Trucks:	74.6	72.4	67.7	68.5	75.6	75.8
Vehicle Noise:	77.7	75.6	72.0	70.8	78.1	78.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	154	331	714	1,537
CNEL:	160	345	744	1,603

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project
Road Name: Merrill Av.
Road Segment: e/o Hellman Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,560	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	3,056	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:	70.9%	12.9%	16.2%	91.05%
Medium Trucks:	81.9%	5.1%	13.0%	4.62%
Heavy Trucks:	72.1%	6.0%	21.9%	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	2.15	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-10.80	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-11.07	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.4	70.1	68.8	65.0	72.5	73.0
Medium Trucks:	70.3	68.7	62.6	61.9	69.9	70.1
Heavy Trucks:	74.4	72.2	67.4	68.3	75.3	75.5
Vehicle Noise:	77.5	75.3	71.7	70.6	77.9	78.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	148	319	688	1,483
CNEL:	155	333	718	1,546

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project
Road Name: Merrill Av.
Road Segment: e/o Archibald Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,847	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	785	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:	70.9%	12.9%	16.2%	91.52%
Medium Trucks:	81.9%	5.1%	13.0%	4.51%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.73	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-16.81	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-17.36	1.31	-1.20	-5.50	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	64.3	62.9	59.1	66.7	67.1
Medium Trucks:	64.3	62.6	56.6	55.9	63.9	64.1
Heavy Trucks:	68.1	65.9	61.2	62.0	69.1	69.2
Vehicle Noise:	71.4	69.2	65.7	64.4	71.8	72.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	269	579
CNEL:	60	130	281	605

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project
Road Name: Bellgrave Av.
Road Segment: w/o Hamner Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,006	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	1,101	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:	70.9%	12.9%	16.2%	91.49%
Medium Trucks:	81.9%	5.1%	13.0%	4.53%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	40.460
Medium Trucks:	40.241
Heavy Trucks:	40.262

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.27	1.28	-1.20	-4.61	0.000	0.000
Medium Trucks:	81.00	-15.32	1.31	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-15.88	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:	68.0	65.7	64.4	60.6	68.1	68.6
Medium Trucks:	65.8	64.1	58.1	57.4	65.4	65.6
Heavy Trucks:	69.6	67.4	62.6	63.5	70.5	70.7
Vehicle Noise:	72.8	70.7	67.2	65.9	73.3	73.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	337	727
CNEL:	76	163	352	759

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project
Road Name: Kimball Av.
Road Segment: e/o Hellman Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,315	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	2,932	vehicles
Vehicle Speed:	50	mph
Near/Far Lane Distance:	78	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	76.0	feet
Centerline Dist. to Observer:	76.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.47%
Medium Trucks:	81.9%	5.1%	13.0%	4.54%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	65.422
Medium Trucks:	65.286
Heavy Trucks:	65.299

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.99	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	81.00	-11.06	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-11.61	-1.84	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	66.9	65.5	61.7	69.2	69.7
Medium Trucks:	66.9	65.2	59.2	58.5	66.5	66.7
Heavy Trucks:	70.7	68.5	63.8	64.6	71.7	71.8
Vehicle Noise:	74.0	71.8	68.3	67.0	74.4	74.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	149	321	692	1,491
CNEL:	156	335	722	1,556

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project
Road Name: Limonite
Road Segment: e/o Archibald Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,910	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	4,791	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	78	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	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:	70.9%	12.9%	16.2%	91.17%
Medium Trucks:	81.9%	5.1%	13.0%	4.60%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	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	4.57	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-8.40	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.78	-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	67.7	66.3	62.5	70.1	70.5
Medium Trucks:	68.0	66.3	60.3	59.6	67.6	67.8
Heavy Trucks:	72.4	70.2	65.5	66.3	73.4	73.6
Vehicle Noise:	75.3	73.2	69.5	68.4	75.8	76.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	184	396	853	1,837
CNEL:	191	412	889	1,915

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project
Road Name: Limonite
Road Segment: e/o Harrison Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	51,402	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,140	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:	70.9%	12.9%	16.2%	91.19%
Medium Trucks:	81.9%	5.1%	13.0%	4.60%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	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	4.87	-1.85	-1.20	*-4.73*	0.000	0.000
Medium Trucks:	79.45	-8.10	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.48	-1.84	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	68.0	66.6	62.8	70.4	70.8
Medium Trucks:	68.3	66.7	60.6	59.9	67.9	68.1
Heavy Trucks:	72.7	70.5	65.8	66.6	73.7	73.8
Vehicle Noise:	75.6	73.5	69.8	68.7	76.0	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	192	414	893	1,923
CNEL:	200	432	930	2,004

Thursday, October 12, 2017

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project
Road Name: Limonite
Road Segment: e/o Sumner Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	50,725	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,073	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:	70.9%	12.9%	16.2%	91.18%
Medium Trucks:	81.9%	5.1%	13.0%	4.60%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	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	-8.16	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.54	-1.84	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	67.9	66.6	62.8	70.3	70.8
Medium Trucks:	68.3	66.6	60.5	59.9	67.8	68.0
Heavy Trucks:	72.7	70.5	65.7	66.5	73.6	73.8
Vehicle Noise:	75.5	73.4	69.7	68.7	76.0	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	191	411	885	1,907
CNEL:	199	428	922	1,987

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project
Road Name: Limonite
Road Segment: e/o Scholar Wy.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	50,910	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,091	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:	70.9%	12.9%	16.2%	91.18%
Medium Trucks:	81.9%	5.1%	13.0%	4.60%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	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	-8.14	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.52	-1.84	-1.20	*-5.25*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	67.9	66.6	62.8	70.3	70.8
Medium Trucks:	68.3	66.6	60.5	59.9	67.8	68.1
Heavy Trucks:	72.7	70.5	65.7	66.6	73.6	73.8
Vehicle Noise:	75.5	73.4	69.7	68.7	76.0	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	191	412	887	1,912
CNEL:	199	429	925	1,992

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project | Project Name: Colony Commerce East
Road Name: Limonite | Job Number: 10524
Road Segment: e/o Hamner Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	55,013	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	5,501	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:	70.9%	12.9%	16.2%	91.19%
Medium Trucks:	81.9%	5.1%	13.0%	4.61%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	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	-7.80	-1.84	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	84.25	-8.19	-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:	70.6	68.3	66.9	63.1	70.7	71.1
Medium Trucks:	68.6	67.0	60.9	60.2	68.2	68.4
Heavy Trucks:	73.0	70.8	66.0	66.9	73.9	74.1
Vehicle Noise:	75.9	73.8	70.1	69.0	76.3	76.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	201	433	934	2,012
CNEL:	210	452	973	2,096

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project | Project Name: Colony Commerce East
Road Name: SR-71 | Job Number: 10524
Road Segment: n/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	131,390	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	13,139	vehicles
Vehicle Speed:	70	mph
Near/Far Lane Distance:	130	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	140.0	feet
Centerline Dist. to Observer:	140.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	7.04	-6.03	-1.20	*-4.80*	0.000	0.000
Medium Trucks:	85.95	-5.97	-6.02	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	88.97	-6.53	-6.02	-1.20	*-5.08*	0.000	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	73.3	71.9	68.1	75.7	76.2
Medium Trucks:	72.8	71.1	65.0	64.4	72.3	72.5
Heavy Trucks:	75.2	73.0	68.3	69.1	76.2	76.3
Vehicle Noise:	79.5	77.3	74.1	72.4	79.8	80.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	630	1,357	2,923	6,297
CNEL:	660	1,421	3,062	6,596

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project | Project Name: Colony Commerce East
Road Name: SR-71 | Job Number: 10524
Road Segment: s/o Euclid Av.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	146,168	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	14,617	vehicles
Vehicle Speed:	70	mph
Near/Far Lane Distance:	130	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	140.0	feet
Centerline Dist. to Observer:	140.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.32%
Medium Trucks:	81.9%	5.1%	13.0%	4.59%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	7.50	-6.03	-1.20	*-4.80*	0.000	0.000
Medium Trucks:	85.95	-5.49	-6.02	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	88.97	-5.99	-6.02	-1.20	*-5.08*	0.000	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	73.8	72.4	68.6	76.1	76.6
Medium Trucks:	73.2	71.6	65.5	64.8	72.8	73.0
Heavy Trucks:	75.8	73.5	68.8	69.6	76.7	76.9
Vehicle Noise:	80.0	77.8	74.5	72.9	80.3	80.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	680	1,464	3,155	6,797
CNEL:	712	1,534	3,304	7,119

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project | Project Name: Colony Commerce East
Road Name: I-15 | Job Number: 10524
Road Segment: n/o Cantu-Galleano Ranch Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	89,887	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	8,989	vehicles
Vehicle Speed:	70	mph
Near/Far Lane Distance:	130	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	140.0	feet
Centerline Dist. to Observer:	140.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.28%
Medium Trucks:	81.9%	5.1%	13.0%	4.59%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	5.38	-6.03	-1.20	*-4.80*	0.000	0.000
Medium Trucks:	85.95	-7.60	-6.02	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	88.97	-8.06	-6.02	-1.20	*-5.08*	0.000	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	71.6	70.3	66.5	74.0	74.5
Medium Trucks:	71.1	69.5	63.4	62.7	70.7	70.9
Heavy Trucks:	73.7	71.5	66.7	67.6	74.6	74.8
Vehicle Noise:	77.9	75.7	72.4	70.8	78.2	78.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	493	1,062	2,287	4,928
CNEL:	516	1,112	2,396	5,162

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project
Road Name: I-15
Road Segment: s/o Cantu-Galleano Ranch Rd.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	86,590	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	8,659	vehicles
Vehicle Speed:	70	mph
Near/Far Lane Distance:	130	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	140.0	feet
Centerline Dist. to Observer:	140.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.41%
Medium Trucks:	81.9%	5.1%	13.0%	4.57%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	5.23	-6.03	-1.20	*-4.80*	0.000	0.000
Medium Trucks:	85.95	-7.78	-6.02	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	88.97	-8.34	-6.02	-1.20	*-5.08*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.8	71.5	70.1	66.3	73.9	74.3
Medium Trucks:	70.9	69.3	63.2	62.6	70.5	70.7
Heavy Trucks:	73.4	71.2	66.4	67.3	74.3	74.5
Vehicle Noise:	77.7	75.5	72.3	70.6	78.0	78.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	477	1,027	2,213	4,768
CNEL:	500	1,076	2,319	4,995

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project
Road Name: I-15
Road Segment: s/o Limonite Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	100,915	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	10,091	vehicles
Vehicle Speed:	70	mph
Near/Far Lane Distance:	130	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	140.0	feet
Centerline Dist. to Observer:	140.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.28%
Medium Trucks:	81.9%	5.1%	13.0%	4.59%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	124.097
Medium Trucks:	124.025
Heavy Trucks:	124.032

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	5.89	-6.03	-1.20	*-4.80*	0.000	0.000
Medium Trucks:	85.95	-7.10	-6.02	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	88.97	-7.56	-6.02	-1.20	*-5.08*	0.000	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	72.1	70.8	67.0	74.5	75.0
Medium Trucks:	71.6	70.0	63.9	63.2	71.2	71.4
Heavy Trucks:	74.2	72.0	67.2	68.1	75.1	75.3
Vehicle Noise:	78.4	76.2	72.9	71.3	78.7	79.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	532	1,147	2,470	5,322
CNEL:	557	1,201	2,587	5,574

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project
Road Name: SR-60
Road Segment: w/o Archibald Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	143,141	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	14,314	vehicles
Vehicle Speed:	70	mph
Near/Far Lane Distance:	130	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	130.0	feet
Centerline Dist. to Observer:	130.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.32%
Medium Trucks:	81.9%	5.1%	13.0%	4.59%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	112.694
Medium Trucks:	112.616
Heavy Trucks:	112.623

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	7.41	-5.40	-1.20	*-4.80*	0.000	0.000
Medium Trucks:	85.95	-5.58	-5.39	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	88.97	-6.08	-5.39	-1.20	*-5.10*	0.000	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	74.3	72.9	69.1	76.7	77.2
Medium Trucks:	73.8	72.1	66.1	65.4	73.3	73.6
Heavy Trucks:	76.3	74.1	69.3	70.2	77.2	77.4
Vehicle Noise:	80.5	78.4	75.1	73.4	80.8	81.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	686	1,477	3,182	6,855
CNEL:	718	1,547	3,333	7,180

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: 2040 With Project
Road Name: SR-60
Road Segment: e/o Archibald Av.
Project Name: Colony Commerce East
Job Number: 10524

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	145,623	vehicles
Peak Hour Percentage:	10%	
Peak Hour Volume:	14,562	vehicles
Vehicle Speed:	70	mph
Near/Far Lane Distance:	130	feet

Site Data

Barrier Height:	**0.0**	**feet**
Barrier Type (0-Wall, 1-Berm):	0.0	
Centerline Dist. to Barrier:	130.0	feet
Centerline Dist. to Observer:	130.0	feet
Barrier Distance to Observer:	0.0	feet
Observer Height (Above Pad):	5.0	feet
Pad Elevation:	0.0	feet
Road Elevation:	0.0	feet
Road Grade:	0.0%	
Left View:	-90.0	degrees
Right View:	90.0	degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

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

Vehicle Mix

VehicleType	Day	Evening	Night	Daily
Autos:	70.9%	12.9%	16.2%	91.31%
Medium Trucks:	81.9%	5.1%	13.0%	4.59%
Heavy Trucks:	72.1%	6.0%	21.9%	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:	112.694
Medium Trucks:	112.616
Heavy Trucks:	112.623

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	75.77	7.48	-5.40	-1.20	*-4.80*	0.000	0.000
Medium Trucks:	85.95	-5.51	-5.39	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	88.97	-6.00	-5.39	-1.20	*-5.10*	0.000	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	74.4	73.0	69.2	76.8	77.2
Medium Trucks:	73.9	72.2	66.1	65.5	73.4	73.6
Heavy Trucks:	76.4	74.2	69.4	70.2	77.3	77.5
Vehicle Noise:	80.6	78.5	75.2	73.5	80.9	81.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	693	1,494	3,219	6,935
CNEL:	726	1,565	3,372	7,264

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APPENDIX 9.1:

REFERENCE DISTRIBUTION/WAREHOUSE NOISE SOURCE PHOTOS

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Reference Measurement: Motivational Fulfillment
6810 Bickmore Avenue, Chino

Motivational Fulfillment_01

Motivational Fulfillment_02

Motivational Fulfillment_03

Source_1-1

Source_1-2

Source_1-3

Reference Measurement: Motivational Fulfillment
6810 Bickmore Avenue, Chino

Source_1-4

Source_2-1

Source_2-2

Source_2-3

Source_2-4

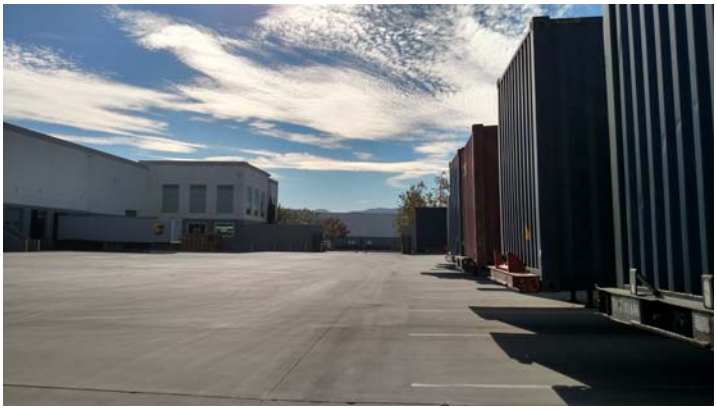
Source_2-5

Reference Measurement: Motivational Fulfillment
6810 Bickmore Avenue, Chino

Source_2-6

Source_2-7

Source_2-8



Source_2-9

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APPENDIX 9.2:

OPERATIONAL STATIONARY-SOURCE NOISE CALCULATIONS

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STATIONARY SOURCE NOISE PREDICTION MODEL

1/24/2017

Observer Location: **R1**
Source: Unloading/Docking Activity
Condition: Operational

Project Name: Colony Commerce
Job Number: 10524
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	430.0	feet	***Barrier Height:***	**30.0 feet**
Noise Distance to Barrier:	10.0	feet	*Noise Source Height:*	8.0 feet
Barrier Distance to Observer:	420.0	feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0	feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	0.0	feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0	feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	30.0	67.2	64.2	67.2	71.8	75.6	80.0
Distance Attenuation	430.0	-23.1	-23.1	-23.1	-23.1	-23.1	-23.1
Shielding (Barrier Attenuation)	10.0	-17.6	-17.6	-17.6	-17.6	-17.6	-17.6
Raw (Distance + Barrier)		26.5	23.5	26.5	31.1	34.9	39.3
60 Minute Hourly Adjustment		**26.5**	**23.5**	**26.5**	**31.1**	**34.9**	**39.3**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/24/2017

Observer Location: **R1**
Source: Roof-Top Air Conditioning
Condition: Operational

Project Name: Colony Commerce
Job Number: 10524
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	238.0	feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	238.0	feet	*Noise Source Height:*	5.0 feet
Barrier Distance to Observer:	0.0	feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0	feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	30.0	feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0	feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	5.0	77.2	74.4	53.7	51.5	50.1	78.2
Distance Attenuation	238.0	-33.6	-33.6	-33.6	-33.6	-33.6	-33.6
Shielding (Barrier Attenuation)	238.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		43.6	40.8	20.1	17.9	16.5	44.6
60 Minute Hourly Adjustment		**43.6**	**40.8**	**20.1**	**17.9**	**16.5**	**44.6**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/24/2017

Observer Location: **R2**
Source: Unloading/Docking Activity
Condition: Operational

Project Name: Colony Commerce
Job Number: 10524
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	493.0 feet	***Barrier Height:***	**6.0 feet**
Noise Distance to Barrier:	483.0 feet	*Noise Source Height:*	8.0 feet
Barrier Distance to Observer:	10.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	0.0 feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	30.0	67.2	64.2	67.2	71.8	75.6	80.0
Distance Attenuation	493.0	-24.3	-24.3	-24.3	-24.3	-24.3	-24.3
Shielding (Barrier Attenuation)	483.0	-5.4	-5.4	-5.4	-5.4	-5.4	-5.4
Raw (Distance + Barrier)		37.5	34.5	37.5	42.1	45.9	50.3
60 Minute Hourly Adjustment		**37.5**	**34.5**	**37.5**	**42.1**	**45.9**	**50.3**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/24/2017

Observer Location: **R2**
Source: Roof-Top Air Conditioning
Condition: Operational

Project Name: Colony Commerce
Job Number: 10524
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	487.0 feet	***Barrier Height:***	**6.0 feet**
Noise Distance to Barrier:	477.0 feet	*Noise Source Height:*	5.0 feet
Barrier Distance to Observer:	10.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	30.0 feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	5.0	77.2	74.4	53.7	51.5	50.1	78.2
Distance Attenuation	487.0	-39.8	-39.8	-39.8	-39.8	-39.8	-39.8
Shielding (Barrier Attenuation)	477.0	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1
Raw (Distance + Barrier)		32.3	29.5	8.8	6.6	5.2	33.3
60 Minute Hourly Adjustment		**32.3**	**29.5**	**8.8**	**6.6**	**5.2**	**33.3**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/24/2017

Observer Location: **R3**
Source: Unloading/Docking Activity
Condition: Operational

Project Name: Colony Commerce
Job Number: 10524
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	583.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	583.0 feet	*Noise Source Height:*	8.0 feet
Barrier Distance to Observer:	0.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	0.0 feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	30.0	67.2	64.2	67.2	71.8	75.6	80.0
Distance Attenuation	583.0	-25.8	-25.8	-25.8	-25.8	-25.8	-25.8
Shielding (Barrier Attenuation)	583.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		41.4	38.4	41.4	46.0	49.8	54.2
60 Minute Hourly Adjustment		**41.4**	**38.4**	**41.4**	**46.0**	**49.8**	**54.2**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/24/2017

Observer Location: **R3**
Source: Roof-Top Air Conditioning
Condition: Operational

Project Name: Colony Commerce
Job Number: 10524
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	781.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	781.0 feet	*Noise Source Height:*	5.0 feet
Barrier Distance to Observer:	0.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	30.0 feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	5.0	77.2	74.4	53.7	51.5	50.1	78.2
Distance Attenuation	781.0	-43.9	-43.9	-43.9	-43.9	-43.9	-43.9
Shielding (Barrier Attenuation)	781.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		33.3	30.5	9.8	7.6	6.2	34.3
60 Minute Hourly Adjustment		**33.3**	**30.5**	**9.8**	**7.6**	**6.2**	**34.3**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/24/2017

Observer Location: **R4**
Source: Unloading/Docking Activity
Condition: Operational

Project Name: Colony Commerce
Job Number: 10524
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	1,568.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	1,568.0 feet	*Noise Source Height:*	8.0 feet
Barrier Distance to Observer:	0.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	0.0 feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	30.0	67.2	64.2	67.2	71.8	75.6	80.0
Distance Attenuation	1,568.0	-34.4	-34.4	-34.4	-34.4	-34.4	-34.4
Shielding (Barrier Attenuation)	1,568.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		32.8	29.8	32.8	37.4	41.2	45.6
60 Minute Hourly Adjustment		**32.8**	**29.8**	**32.8**	**37.4**	**41.2**	**45.6**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/24/2017

Observer Location: **R4**
Source: Roof-Top Air Conditioning
Condition: Operational

Project Name: Colony Commerce
Job Number: 10524
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:*	5.0 feet
Barrier Distance to Observer:	0.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	30.0 feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	5.0	77.2	74.4	53.7	51.5	50.1	78.2
Distance Attenuation	1,605.0	-50.1	-50.1	-50.1	-50.1	-50.1	-50.1
Shielding (Barrier Attenuation)	1,605.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		27.1	24.3	3.6	1.4	0.0	28.1
60 Minute Hourly Adjustment		**27.1**	**24.3**	**3.6**	**1.4**	**0.0**	**28.1**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/24/2017

Observer Location: **R5**
Source: Unloading/Docking Activity
Condition: Operational

Project Name: Colony Commerce
Job Number: 10524
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	2,128.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	2,128.0 feet	*Noise Source Height:*	8.0 feet
Barrier Distance to Observer:	0.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	0.0 feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	30.0	67.2	64.2	67.2	71.8	75.6	80.0
Distance Attenuation	2,128.0	-37.0	-37.0	-37.0	-37.0	-37.0	-37.0
Shielding (Barrier Attenuation)	2,128.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		30.2	27.2	30.2	34.8	38.6	43.0
60 Minute Hourly Adjustment		**30.2**	**27.2**	**30.2**	**34.8**	**38.6**	**43.0**

STATIONARY SOURCE NOISE PREDICTION MODEL

1/24/2017

Observer Location: **R5**
Source: Roof-Top Air Conditioning
Condition: Operational

Project Name: Colony Commerce
Job Number: 10524
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	2,559.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	2,559.0 feet	*Noise Source Height:*	5.0 feet
Barrier Distance to Observer:	0.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	30.0 feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	5.0	77.2	74.4	53.7	51.5	50.1	78.2
Distance Attenuation	2,559.0	-54.2	-54.2	-54.2	-54.2	-54.2	-54.2
Shielding (Barrier Attenuation)	2,559.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		23.0	20.2	-0.5	-2.7	-4.1	24.0
60 Minute Hourly Adjustment		**23.0**	**20.2**	**-0.5**	**-2.7**	**-4.1**	**24.0**

STATIONARY SOURCE NOISE PREDICTION MODEL

3/9/2017

Observer Location: **R1**
Source: Unloading/Docking Activity
Condition: Operational+PA3

Project Name: Colony Commerce
Job Number: 10524
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	430.0	feet	***Barrier Height:***	**30.0 feet**
Noise Distance to Barrier:	10.0	feet	*Noise Source Height:*	8.0 feet
Barrier Distance to Observer:	420.0	feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0	feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	0.0	feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0	feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	30.0	67.2	64.2	67.2	71.8	75.6	80.0
Distance Attenuation	430.0	-23.1	-23.1	-23.1	-23.1	-23.1	-23.1
Shielding (Barrier Attenuation)	10.0	-17.6	-17.6	-17.6	-17.6	-17.6	-17.6
Raw (Distance + Barrier)		26.5	23.5	26.5	31.1	34.9	39.3
60 Minute Hourly Adjustment		**26.5**	**23.5**	**26.5**	**31.1**	**34.9**	**39.3**

STATIONARY SOURCE NOISE PREDICTION MODEL

3/9/2017

Observer Location: **R1**
Source: Roof-Top Air Conditioning
Condition: Operational+PA3

Project Name: Colony Commerce
Job Number: 10524
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	238.0	feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	238.0	feet	*Noise Source Height:*	5.0 feet
Barrier Distance to Observer:	0.0	feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0	feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	30.0	feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0	feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	5.0	77.2	74.4	53.7	51.5	50.1	78.2
Distance Attenuation	238.0	-33.6	-33.6	-33.6	-33.6	-33.6	-33.6
Shielding (Barrier Attenuation)	238.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		43.6	40.8	20.1	17.9	16.5	44.6
60 Minute Hourly Adjustment		**43.6**	**40.8**	**20.1**	**17.9**	**16.5**	**44.6**

STATIONARY SOURCE NOISE PREDICTION MODEL

3/9/2017

Observer Location: **R2**
Source: Unloading/Docking Activity
Condition: Operational+PA3

Project Name: Colony Commerce
Job Number: 10524
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	493.0 feet	***Barrier Height:***	**6.0 feet**
Noise Distance to Barrier:	483.0 feet	*Noise Source Height:*	8.0 feet
Barrier Distance to Observer:	10.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	0.0 feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	30.0	67.2	64.2	67.2	71.8	75.6	80.0
Distance Attenuation	493.0	-24.3	-24.3	-24.3	-24.3	-24.3	-24.3
Shielding (Barrier Attenuation)	483.0	-5.4	-5.4	-5.4	-5.4	-5.4	-5.4
Raw (Distance + Barrier)		37.5	34.5	37.5	42.1	45.9	50.3
60 Minute Hourly Adjustment		**37.5**	**34.5**	**37.5**	**42.1**	**45.9**	**50.3**

STATIONARY SOURCE NOISE PREDICTION MODEL

3/9/2017

Observer Location: **R2**
Source: Roof-Top Air Conditioning
Condition: Operational+PA3

Project Name: Colony Commerce
Job Number: 10524
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	487.0 feet	***Barrier Height:***	**6.0 feet**
Noise Distance to Barrier:	477.0 feet	*Noise Source Height:*	5.0 feet
Barrier Distance to Observer:	10.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	30.0 feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	5.0	77.2	74.4	53.7	51.5	50.1	78.2
Distance Attenuation	487.0	-39.8	-39.8	-39.8	-39.8	-39.8	-39.8
Shielding (Barrier Attenuation)	477.0	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1
Raw (Distance + Barrier)		32.3	29.5	8.8	6.6	5.2	33.3
60 Minute Hourly Adjustment		**32.3**	**29.5**	**8.8**	**6.6**	**5.2**	**33.3**

STATIONARY SOURCE NOISE PREDICTION MODEL

3/9/2017

Observer Location: **R3**
Source: Unloading/Docking Activity
Condition: Operational+PA3

Project Name: Colony Commerce
Job Number: 10524
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	583.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	583.0 feet	*Noise Source Height:*	8.0 feet
Barrier Distance to Observer:	0.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	0.0 feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	30.0	67.2	64.2	67.2	71.8	75.6	80.0
Distance Attenuation	583.0	-25.8	-25.8	-25.8	-25.8	-25.8	-25.8
Shielding (Barrier Attenuation)	583.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		41.4	38.4	41.4	46.0	49.8	54.2
60 Minute Hourly Adjustment		**41.4**	**38.4**	**41.4**	**46.0**	**49.8**	**54.2**

STATIONARY SOURCE NOISE PREDICTION MODEL

3/9/2017

Observer Location: **R3**
Source: Roof-Top Air Conditioning
Condition: Operational+PA3

Project Name: Colony Commerce
Job Number: 10524
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	781.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	781.0 feet	*Noise Source Height:*	5.0 feet
Barrier Distance to Observer:	0.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	30.0 feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	5.0	77.2	74.4	53.7	51.5	50.1	78.2
Distance Attenuation	781.0	-43.9	-43.9	-43.9	-43.9	-43.9	-43.9
Shielding (Barrier Attenuation)	781.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		33.3	30.5	9.8	7.6	6.2	34.3
60 Minute Hourly Adjustment		**33.3**	**30.5**	**9.8**	**7.6**	**6.2**	**34.3**

STATIONARY SOURCE NOISE PREDICTION MODEL

3/9/2017

Observer Location: **R4**
Source: Unloading/Docking Activity
Condition: Operational+PA3

Project Name: Colony Commerce
Job Number: 10524
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	826.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	826.0 feet	*Noise Source Height:*	8.0 feet
Barrier Distance to Observer:	0.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	0.0 feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	30.0	67.2	64.2	67.2	71.8	75.6	80.0
Distance Attenuation	826.0	-28.8	-28.8	-28.8	-28.8	-28.8	-28.8
Shielding (Barrier Attenuation)	826.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		38.4	35.4	38.4	43.0	46.8	51.2
60 Minute Hourly Adjustment		**38.4**	**35.4**	**38.4**	**43.0**	**46.8**	**51.2**

STATIONARY SOURCE NOISE PREDICTION MODEL

3/9/2017

Observer Location: **R4**
Source: Roof-Top Air Conditioning
Condition: Operational+PA3

Project Name: Colony Commerce
Job Number: 10524
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	860.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	860.0 feet	*Noise Source Height:*	5.0 feet
Barrier Distance to Observer:	0.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	30.0 feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	5.0	77.2	74.4	53.7	51.5	50.1	78.2
Distance Attenuation	860.0	-44.7	-44.7	-44.7	-44.7	-44.7	-44.7
Shielding (Barrier Attenuation)	860.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		32.5	29.7	9.0	6.8	5.4	33.5
60 Minute Hourly Adjustment		**32.5**	**29.7**	**9.0**	**6.8**	**5.4**	**33.5**

STATIONARY SOURCE NOISE PREDICTION MODEL

3/9/2017

Observer Location: **R5**
Source: Unloading/Docking Activity
Condition: Operational+PA3

Project Name: Colony Commerce
Job Number: 10524
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	2,037.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	2,037.0 feet	*Noise Source Height:*	8.0 feet
Barrier Distance to Observer:	0.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	0.0 feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	30.0	67.2	64.2	67.2	71.8	75.6	80.0
Distance Attenuation	2,037.0	-36.6	-36.6	-36.6	-36.6	-36.6	-36.6
Shielding (Barrier Attenuation)	2,037.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		30.6	27.6	30.6	35.2	39.0	43.4
60 Minute Hourly Adjustment		**30.6**	**27.6**	**30.6**	**35.2**	**39.0**	**43.4**

STATIONARY SOURCE NOISE PREDICTION MODEL

3/9/2017

Observer Location: **R5**
Source: Roof-Top Air Conditioning
Condition: Operational+PA3

Project Name: Colony Commerce
Job Number: 10524
Analyst: A. Wolfe

NOISE MODEL INPUTS

Noise Distance to Observer	2,063.0 feet	***Barrier Height:***	**0.0 feet**
Noise Distance to Barrier:	2,063.0 feet	*Noise Source Height:*	5.0 feet
Barrier Distance to Observer:	0.0 feet	*Observer Height:*	5.0 feet
Observer Elevation:	0.0 feet	*Barrier Type (0-Wall, 1-Berm):*	0
Noise Source Elevation:	30.0 feet	*Drop Off Coefficient:*	20.0
Barrier Elevation:	0.0 feet		

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

NOISE MODEL PROJECTIONS

Noise Level	*Distance (feet)*	*Leq*	*L50*	*L25*	*L8*	*L2*	*Lmax*
Reference (Sample)	5.0	77.2	74.4	53.7	51.5	50.1	78.2
Distance Attenuation	2,063.0	-52.3	-52.3	-52.3	-52.3	-52.3	-52.3
Shielding (Barrier Attenuation)	2,063.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		24.9	22.1	1.4	-0.8	-2.2	25.9
60 Minute Hourly Adjustment		**24.9**	**22.1**	**1.4**	**-0.8**	**-2.2**	**25.9**