Appendix F

Noise Impact Analysis

Noise Impact Analysis – DAX9, West Covina, California Delivery Station

June 22, 2021

Prepared For:

Glenn Lajoie, AICP
Vice President/Senior Project Manager
Psomas

Dear Mr. Lajoie,

NV5 is pleased to present the Noise Impact Analysis for the Delivery Station DAX9 located in West Covina, CA. Please refer to the report for our findings and conclusions.

If you have any questions, please contact Cecile Felsher at (310)756-9693 or by email at cecile.felsher@nv5.com.

For and on behalf of NV5-Alta,

Cecile Felsher, CIH
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1 INTRODUCTION

1.1 Noise Impact Study Purpose and Objectives

This noise impact analysis was completed to evaluate the potential noise impacts and identify possible noise mitigation measures associated with the proposed facility located in West Covina, California. This study evaluates the long-term noise impacts on the residential properties located near the site, from the on-site operations of the proposed facility and off-site traffic related to the site's activities.

1.2 Facility Description and Operations

This proposed facility is located at 1200 E. San Bernardino, West Covina, California. The site is surrounded by San Bernardino Road on the north and Badillo Street on the south. East of the site is Lark Ellen Village Apartments and west of the site are other commercial and light industrial facilities. The current building is being used as a church and a school.

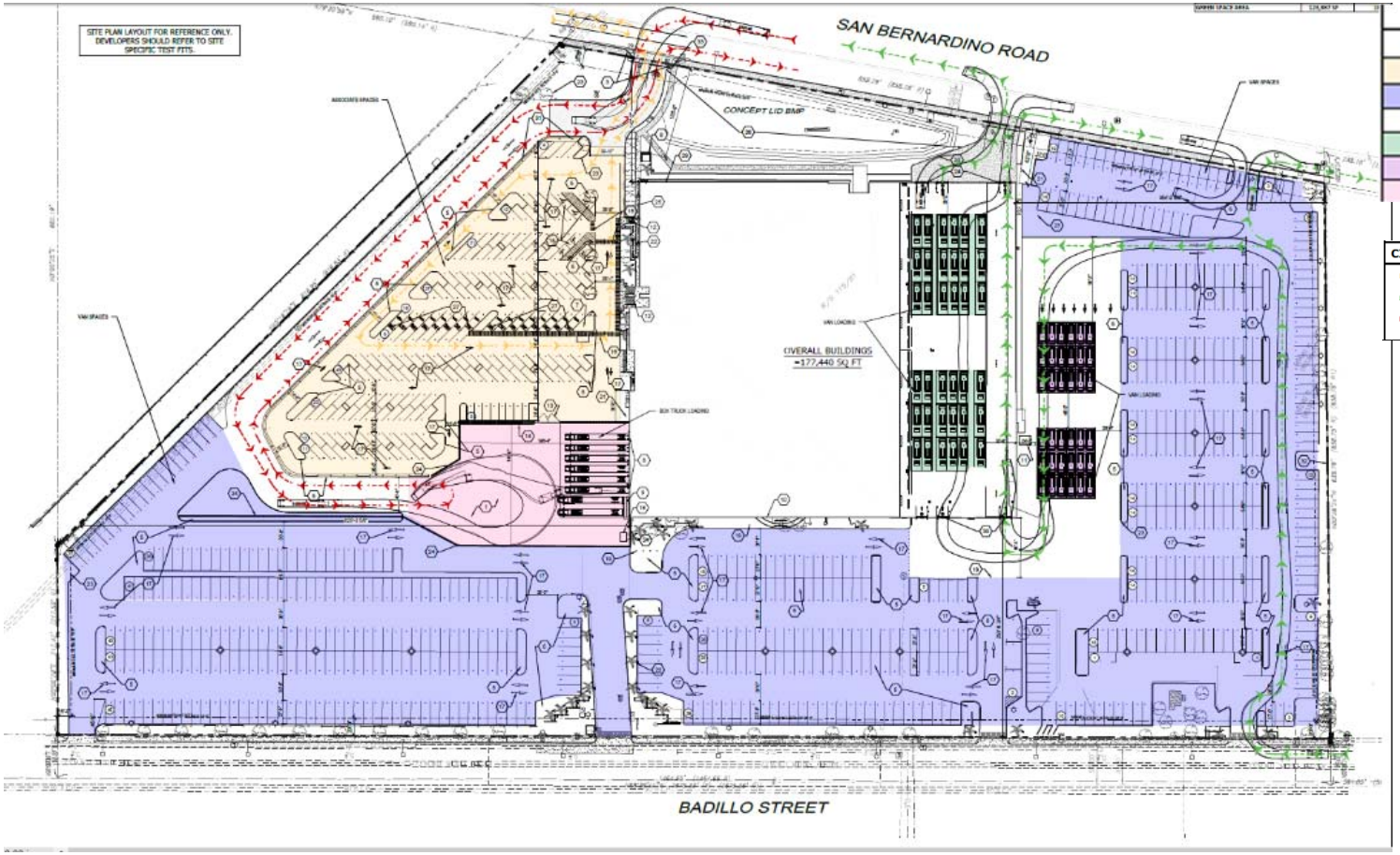
The nearest sensitive receptor is the Lark Ellen Village, located approximately 30 feet east of the site and 830 from the truck loading docks. The next closest sensitive receptors are residential communities to the north and south of the site, approximately 95 feet and 115 feet from the site, respectively. The south residential community is approximately 350 feet from the truck loading docks and the north residential community is about 550 feet from the loading docks. Southeast of the site is Grovecenter Elementary School, approximately 300 feet away from the site and 1,000 feet from the truck loading docks.

Based on the Concept Plan, the facility will consist of a 177,440 square foot building located in the northern center of the site. There will be a van parking lot on the southern and eastern portions of the site. The western portions of the property will have parking spots reserved for associates and DSP drivers. The truck loading docks will be located southwest of the proposed building. A 12-foot tall wall is planned to be installed south of the truck court. Van staging will be taking place east of the building and van loading will be taking place inside the building.

Trucks will enter the site using the northwest driveway on San Bernardino Road and drive south and east to the loading docks. They will leave the site using the same driveway. Vans will enter the site using the southeast driveway from Badillo Street to either park in van parking areas or to drive north and west for van staging and loading. Vans will exit the facility using the northeast driveway onto San Bernardino Road. Employees will enter the employee parking areas using the northwest driveway from San Bernardino Road and exist the facility using the same driveway.

Exhibit A – Project Location

Exhibit B –Site Concept Plan



PARKING BREAKDOWN

PARKING	PROPOSED ON-SITE
ASSOCIATE SPACES (9'x18')	185
VAN SPACES (11'X27')	626
TOTAL PARKING	811
UTR / VAN LOADING	36
VAN STAGING	36
TRAILER / BOX TRUCK LOADING	8

CIRCULATION LEGEND

- ASSOCIATE TRAFFIC FLOW DIRECTION
- DSP / FLEX TRAFFIC FLOW DIRECTION
- TRUCK TRAFFIC FLOW DIRECTION

2 FUNDAMENTALS OF NOISE

2.1 Sound, Noise and Acoustics

Sound is a mechanical radiant energy that is transmitted by longitudinal pressure waves in a material medium, such as air in the case of traffic and stationary noise, and is the objective cause for human hearing. Sound is technically described in terms of the loudness (amplitude) and frequency (pitch) of the sound. Noise is defined as an unwanted sound.

2.2 Frequency

When sound travels through air, the atmospheric pressure varies periodically. The number of pressure variations per second is called the frequency of sound and is measured in Hertz (Hz) which is defined as cycles per second. Our hearing systems are not equally sensitive to all sound frequencies. Thus, not all frequencies are perceived as being equally loud at the same sound pressure level, and when calculating overall environmental noise ratings it is necessary to consider sounds at some frequencies as more impactful than those at other frequencies. Low-frequency sounds are low in pitch (bass sounding) and high-frequency sounds are high in pitch (squeak). The human ear can hear from a bass pitch starting at 20 Hz all the way to the high pitch of 20,000 Hz.

2.3 Sound Pressure Levels and Decibels

Sound pressure level (SPL or Lp) is a logarithmic measure of the effective pressure of a sound relative to a reference value. The sound pressure levels are measured in decibels abbreviated dB. The human ear is not equally sensitive to sound at all frequencies. The “A-weighted scale,” abbreviated dBA, reflects the normal hearing sensitivity range of the human ear. On this scale, the range of human hearing extends from approximately 3 to 140 dBA. Exhibit C provides examples of A-weighted noise levels from common sounds.

Exhibit C – A-weighted Common Noise Level Scale

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	— 110 —	Rock band
Jet fly-over at 1000 feet		
	— 100 —	
Gas lawn mower at 3 feet		
	— 90 —	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	— 80 —	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	— 70 —	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	— 60 —	
		Large business office
Quiet urban daytime	— 50 —	Dishwasher next room
Quiet urban nighttime	— 40 —	Theater, large conference room (background)
Quiet suburban nighttime		
	— 30 —	Library
Quiet rural nighttime		Bedroom at night, concert
	— 20 —	
		Broadcast/recording studio
	— 10 —	
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

dBA = A-weighted decibels; mph = miles per hour

Source: California Department of Transportation, *Technical Noise Supplement*, September 2013.

2.4 Addition of Decibels

Because decibels are on a logarithmic scale, sound pressure levels cannot be added or subtracted by simple plus or minus addition. To add two or more noise levels, if the difference between the highest and next highest noise level is: 0–1 dB then add 3 dB to the higher level to give the total noise level, 2–3 dB then add 2 dB to the higher level to give the total noise level, 4–9 dB then add 1 dB to the higher level to give the total noise level, 10 dB and over, then the noise level is unchanged (i.e. the higher level is the total level)

2.5 Human Response to Changes in Noise Levels

In general, the healthy human ear is most sensitive to sounds between 1,000 Hz and 5,000 Hz, and it perceives a sound within that range as being more intense than a sound with a higher or lower frequency with the same magnitude. For purposes of this report as well as with most environmental documents, overall sound levels are determined by applying frequency weighted adjustments to spectral sound levels. The A-scale weighting scale is used to mimic human hearing response, so sound is reported in terms of A-weighted decibels (dBA). Typically, the human ear can barely perceive a change in noise level of 3 dB. A change in noise level of 5 dB is readily perceptible, and a change of 10 dB is perceived as being twice or half as loud.

2.6 Sound Propagation

Sound is transmitted in air by pressure variations from its source to the surroundings. Sound levels will decrease as the distance between the source and the receiver increases. While absorption by air is one of the factors attributing to the weakening of a sound during transmission, distance plays a more important role in noise reduction during transmission. Depending on the source of the sound for every doubling of distance the level will be reduced between 3 and 6 dB. The reduction of a sound is called attenuation.

Other factors for noise attenuation are ground absorption and shielding. Noise models use hard site (reflective surfaces) and soft site (absorptive surfaces) to help calculate predicted noise levels. Hard site conditions assume no excessive ground absorption between the noise source and the receiver. Soft site conditions such as grass, soft dirt or landscaping attenuate noise at a rate of an additional 1.5 dB per doubling of distance.

In order to break the line of sight, walls between a noise source and a receiver are often used for noise attenuation to reduce the noise levels at the receiver. Additional barriers such as buildings, hills and heavy vegetations can also reduce the noise levels. Typically, walls will reduce noise levels by 5-10 dB. The higher the wall is, the higher the noise reduction will be.

2.7 Measurement of Sound

There are many ways to evaluate noise measured over periods of time. Equivalent continuous sound level (Leq) is the total sound energy measured over a stated period of time. LAs(Max) is the maximum level with A-weighted frequency response and slow time constant. The Community Noise Equivalent Level (CNEL) is the LAeq (equivalent noise level) over a 24-hour

period with a penalty of 5 dB for noises occurring from 7:00 p.m. to 10:00 p.m. and a penalty of 10 dB for noises occurring from 10:00 p.m. to 7:00 a.m. The noise penalty is added to the noise events during the evening and nighttime hours when individuals are more sensitive to noise.

2.1 Ground-Borne Vibration

Vibration is periodic motion of a solid medium in alternately opposite directions from the position of equilibrium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. The peak particle velocity (PPV) or the root mean square (RMS) velocity is usually used to describe vibration amplitudes. The PPV is defined as the maximum instantaneous peak or negative peak of the vibration wave. The RMS is defined as the square root of the average of the squared amplitude of the signal. PPV is the most commonly used descriptor for evaluating potential building damage, whereas RMS is generally used to assess human response. Typically, ground-borne vibration, generated by man-made activities, attenuates rapidly with distance from the source of vibration. Man-made vibration issues are therefore usually confined to short distances (i.e., 500 feet or less) from the source.

Operation of construction equipment, maintenance operations, and traffic traveling on roadways can generate ground-borne vibration. However, if the roadway is smooth, the vibration from traffic is typically not perceptible.

3 COMMUNITY STANDARDS

3.1 Noise Standards

3.1.1 West Covina, General Plan

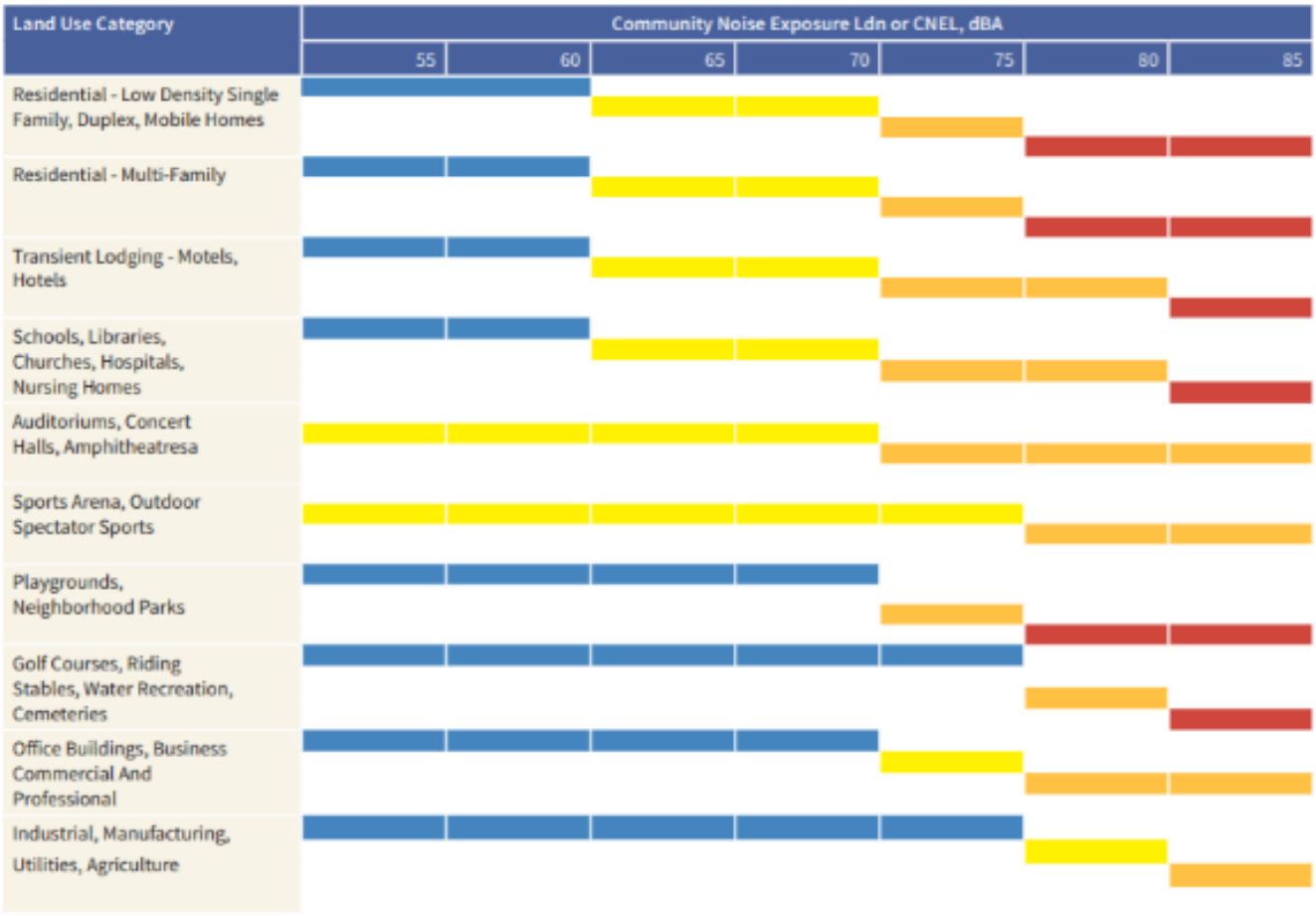
The City of West Covina General Plan Noise Element provides guidance on improving the safety and health of the community and abatement of excessive noise.

In 1974, the EPA published a document entitled "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare With an Adequate Margin of Safety." The EPA "levels document" does not constitute a standard, specification or regulation, but identifies safe levels of environmental noise exposure without consideration for economic cost for achieving these levels. The West Covina General Plan includes the For Residential properties, the Environmental Protections Agency Noise Guidelines recommends 45 dBA L_{dn} for indoor noise levels and 55 dBA L_{dn} for outdoor noise levels.

The FHWA has adopted and published noise abatement criteria for highway construction projects. The noise abatement criteria specified by the FHWA are presented in the City of West Covina General Plan in terms of the maximum one-hour Leq. The FHWA noise abatement criteria basically establish an exterior noise goal for residential land uses of 67 Leq and an interior goal for residences of 52 Leq. The noise abatement criteria applies to private yard areas and assumes that typical wood frame homes with windows open provide 10 dB noise reduction (outdoor to indoor) and 20 dB noise reduction with windows closed.

The noise section provides information on the existing noise environment and includes goals, objectives, policies, and implementation programs to ensure an acceptable noise environment. The predominant noise source in most of the City is motor vehicles on roadways within the City. Commercial activities, including air compressors and commercial compactors, landscaping maintenance equipment, and daily activities also contribute to noise levels. Although two rail lines are located just outside the City (the San Bernardino Metrolink line to the north and a freight line and the Riverside Metrolink line to the south), no major rail lines exist within City limits, and noise from these rail lines, although audible, is not a major source of noise in the community. No airports are located within or immediately adjacent to West Covina, and aircraft noise is also not a major noise source, although certain aircraft related noise (such as from low-flying helicopters) can be of concern. West Covina does not have major “point sources” of noise, such as large factories. The general plan outlines land use compatibility standards as a guideline for locating new land uses, which have been adopted from the California Office of Noise Control. The land use compatibility guidelines are outlined in Exhibit D. Per Policy 6.23 (a). new developments shall reduce exterior noise levels for any usable outdoor area to the “normally acceptable range” as shown in Exhibit D. Policy 6.24 requires that new developments analyze potential noise impacts on nearby noise sensitive receptors and as feasible require noise mitigation to address any identified significant impacts.

Exhibit D – City of West Covina Land Use/ Noise Compatibility Matrix



Normally Acceptable. Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable. New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

Normally Unacceptable. New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable. New construction or development should generally not be undertaken.

3.1.2 West Covina, Municipal Code

The West Covina Code of Ordinances, Chapter 15, Article IV, Section 15, establishes noise requirements for the city. Section 15-85 establishes that it shall be unlawful for any person within any residential zone of the city to willfully make or continue or cause to be made or continued, any loud, unnecessary or unusual noise which unreasonably disturbs the peace and quiet of any residential neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area. Any noise that is plainly audible at a distance of fifty (50) feet from any property, building, structure, or vehicle in which it is located shall be presumed to be a noise created in violation of the ordinance.

Per Chapter 26, Article X, Section 26-580, no portion of the property shall be used in such a manner as to create a nuisance to adjacent properties, such as but not limited to vibration, sound, electro-mechanical disturbance or radiation, air or water pollution, dust, emission of odorous, toxic, or noxious matter.

The Noise Ordinance (Section 15-95) prohibits any construction activities between the hours of 8pm to 7am (or 6am for unloading and loading activities) that causes the noise level at the property line to exceed the ambient noise level by more than 5dB, unless a permit has been obtained, or in the case of emergency work as defined in the Noise Ordinance.

Per Section 1-37,

(a) Whenever in this Code or in any ordinance of the city an act is prohibited or is made or declared to be unlawful or an offense or a misdemeanor, or whenever in such Code or ordinance the doing of any act is required or the failure to do any act is declared to be unlawful, and no specific penalty is provided therefore, the violation of any such provision or the failure to perform any such act shall be punished by a fine not exceeding $1,000 or by imprisonment not to exceed 6 months or by both such fine and imprisonment at the discretion of the court.

(b) Violation of any provision of this Code or city ordinance shall be a misdemeanor unless by such provision it is made an infraction. Such a violation may be prosecuted in the name of the people of the state, or redressed by civil action. Every violation determined to be an infraction is punishable by a fine. Each day any such violation or failure to perform such act shall continue shall constitute a separate offense, unless otherwise specifically provided.

3.2 Vibration Standards

Neither the City of West Covina Municipal Code nor the General Plan has specific and/or quantitative regulatory standards for construction or operational vibration sources. In lieu of quantified vibration criteria, impacts are defined as significant if they exceed the Federal Transit Administration's (FTA) standards for vibration (as found in "Transit Noise and Vibration Impact Assessment" [FTA 2006]). For structural damage, FTA guidelines define an impact as significant if it exceeds 0.20 inch/second for nonengineered timber and masonry buildings, and 0.30 inch/second for engineered concrete and masonry (no plaster) buildings. For vibration

annoyance, an impact is defined as significant if it exceeds 78 VdB during the day at a residential receiver or if it exceeds 84 VdB at commercial/office land uses.

3.3 Significance Thresholds

For the purpose of this study the following threshold of significance will be used to determine the noise and vibration impact on the nearest sensitive receptors:

Construction Noise

- Construction activities between the hours of 7:00 am and 8:00 pm.

- The City of West Covina does not have a maximum numeric limit for noise levels related to construction activities at the sensitive receptors. The Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment provides an eight-hour construction noise level threshold of 80 dBA Leq during daytime at residential (noise-sensitive) uses, and 85dBA during the daytime at commercial uses. Therefore, those thresholds were used to evaluate the need of mitigation measures during construction activities.

Construction Vibration

- 78 VdB during the day at a residential receiver.

Off-Site Traffic

- An increase of less than 3 dBA is barely perceptible to people, while a 5-dBA increase is readily noticeable (Caltrans, 2013).

On-Site Operational Noise

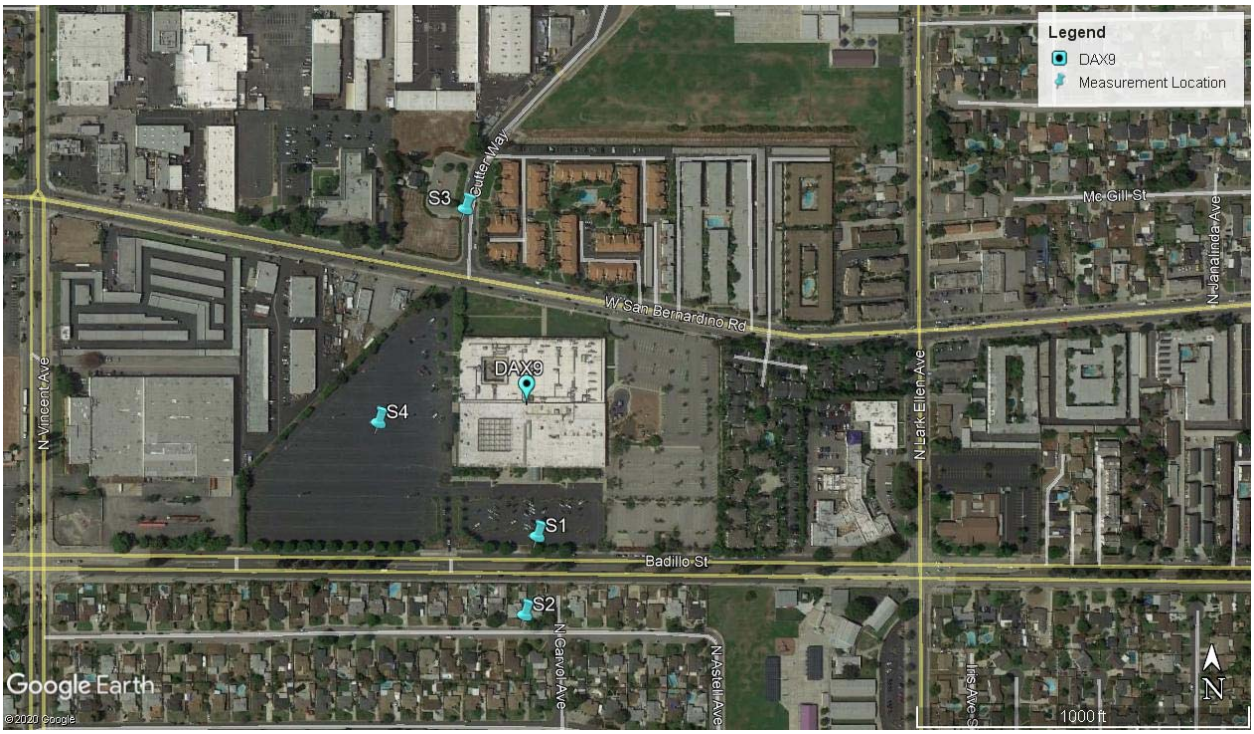
- Neither the West Covina Municipal Code nor the West Covina General Plan include a quantitative noise standard relevant to operational activities associated with the proposed site. Typically, a change in noise level of 5 dB is readily perceptible and therefore may be perceived as a noise disturbance. Therefore, the proposed project would have a significant impact related to operational noise if operational noise levels exceed 5 dBA at the sensitive receptors near the project site.

4 EXISTING AMBIENT NOISE ENVIRONMENT

Ambient noise or background levels are the all-encompassing noises associated with a given environment at a specific time, usually a composite of sound from many sources from many directions, near and far without any particular dominant sound. The existing noise environment at the proposed facility and in the surrounding area results primarily from vehicular traffic along San Bernardino Road and Badillo Street and noises from the nearby industrial facilities.

NV5 conducted short-term and long-term noise level measurements on October 6th through 7th, 2020 at four locations in the vicinity of the proposed site as shown in Exhibit E.

Exhibit E – Ambient Noise Measurement Location



All the measurements were conducted using a Larson Davis 831c – Type 1 Sound Level Meter (SLM). The SLM was calibrated before and after each measurement of noise levels; the measurement was made using the A-weighting scale, the SML was placed 5 feet off the ground. Three 15-minute noise level measurements were taken at S1, S2, and S3 during daytime hours and analyzed with Leq. A 24-hour noise level measurement was taken at S4 and analyzed with Leq and LAmax. At nighttime, the main sources of noise are from vehicular traffic. The maximum noise levels measured shown in Exhibit F, included noise such as loud motocycles accelerating.

Table 1 summarizes the results of the short-term measurement for each of the locations. Table 2 summarizes the results of the 24-hour noise level measurement.

Table 1 - Summary of Short-Term Noise Measurements (dBA)

ID	Sample Location	Sample Time	Description	Leq (dBA)	LSmax (dBA)
1	1211 Badillo Street: South Parking Lot	8:37 A.M. - 8:52 A.M.	Noise from automobiles, motorcycles, semitrucks, airplanes, animals, and pedestrians	67.2	85.8
2	1233 Elgenia Street	9:10 A.M. – 9:25 A.M.	Noise from automobiles, animals, and pedestrians	50.6	62.9
3	529 Cutler Way	9:41 A.M. – 9:56 A.M.	Noise from automobiles, semitrucks, motorcycles, animals, trains, industrial activities, and pedestrians	61.9	81.0

dBA = A-weighted decibels
Leq = equivalent continuous level over a period of 15 minutes
LS max = maximum level and slow time constant over a period of 15 minutes

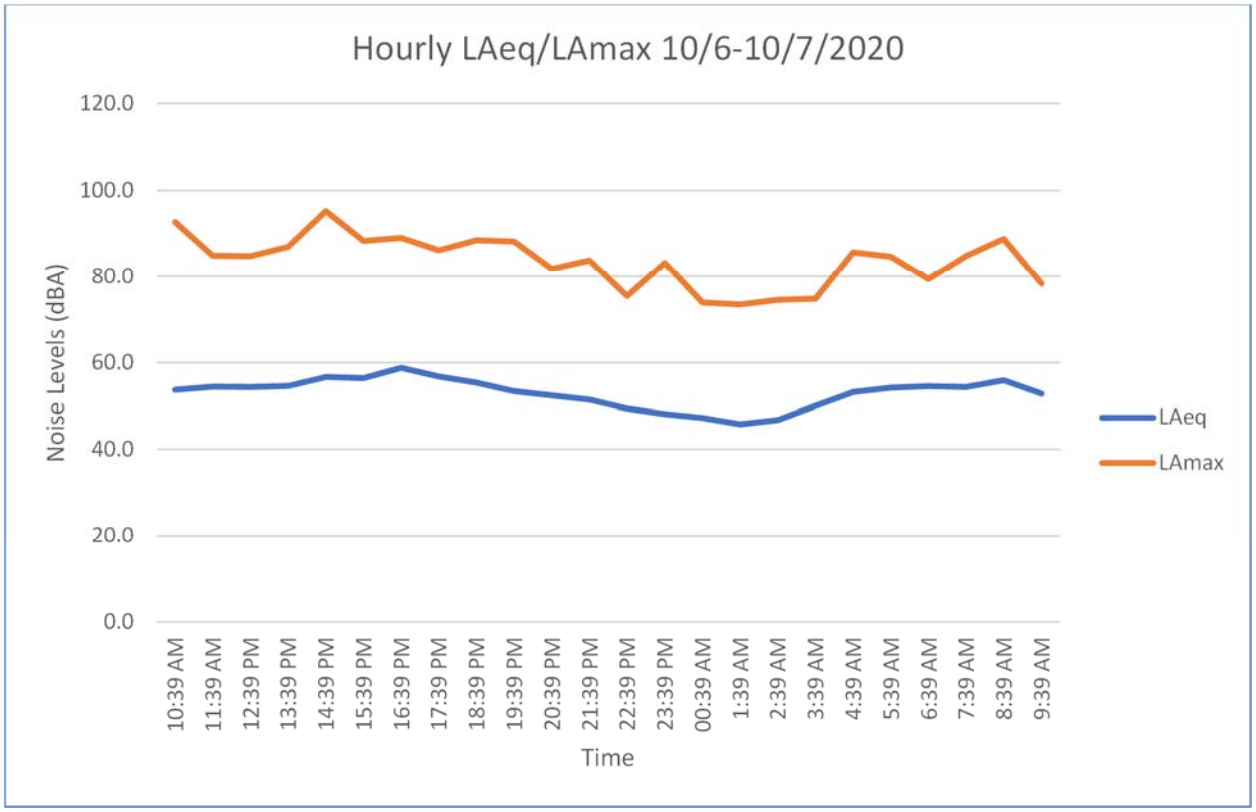
Table 2 - Summary of Long-Term Noise Measurements (dBA)

ID	Sample Location	Sample Time	Description	Lden (dBA)	Leq_{Day} (dBA)	$Leq_{Evening}$ (dBA)	Leq_{Night} (dBA)
4	1211 Badillo Street: West Parking Lot	10:39 A.M. 10/06/2020 - 10:39 A.M. 10/07/2020	Noise from automobiles, semitrucks, motorcycles, animals, airplanes, trains, industrial activities, and pedestrians	58.7	55.4	51.7	50.0

dBA = A-weighted decibels
Leq = equivalent continuous level over a period of 1 hour
Day = 7:00 a.m. – 7 p.m.
Evening = 7 p.m. – 10 p.m.
Night = 10 p.m. – 7 a.m.
Lden = equivalent continuous level over a period of 24 hours with a penalty of 5 dB for noises occurring from 7:00 pm to 10:00 pm and a penalty of 10 dB for noises occurring from 10:00 p.m. to 7:00 a.m

Exhibit F below shows the hourly equivalent noise levels (Leq) and the maximum noise levels (LAmax) during the long-term measurement at location 4.

Exhibit F – Long-Term Hourly Noise Levels



5 FUTURE COMMUNITY NOISE IMPACTS

5.1 On-site operational noise impacts

The potential noise impacts on the community would be associated with stationary sources on operating on the project site. Motor vehicle noise on public streets is often considered as part of the ambient noise; when vehicles enter a private site, they are considered as part of the site's noise sources. The trucks, vans, and associate cars activities on site could affect the closest sensitive receptors.

The impact evaluation of the Project was performed using SoundPlan Essential 5.1, an environmental noise propagation computer program that was developed to assist with noise propagation calculations for major noise sources and projects. The program calculates the sound pressure level at a location utilizing the sound emission properties of the source(s) and environmental propagation factors (sound spreading due to distance, ground affects, barriers, topography, as well as atmospheric attenuation). The program also includes a number of standardized methodologies that can be utilized to quantify the acoustic effect of these environmental factors. The specific standard employed by this program is that described in the

ISO standard 9613 “Acoustics - Attenuation of sound during propagation outdoors”. The modeled ambient temperature was 10 degrees C (50 degrees F) and the assumed relative humidity (RH) was 70 percent. The ground absorption value utilized in the model was 0 (for hard ground), which is conservatively representative of the land at the site. A 12ft wall was added to the model on the south side of the loading docks from the southwest corner of the building to the edge of the island located south of the truck path.

This study evaluates the acoustical impact of the proposed facility on the adjacent sensitive receptors and compares it to the ambient noise levels and local noise standards to assess if any mitigation measure would be necessary to reduce the noise exposure to the community. Future community noise impacts from the onsite operations were modeled using SoundPlan Essentials 5.1 acoustical modeling software. This study focuses on the daytime and nighttime noise levels in order to determine the acoustical impact of the site on the closest receivers.

5.1.1 Noise Sources

5.1.1.1 Vehicles Noise Sources

The main noise sources are trucks entering and leaving the site during the day and at night. Based on the traffic count provided (Appendix C), the following are the noise sources on site:

The main noise sources are trucks entering and leaving the site during the day and at night and vans staging during the day. Based on the traffic count provided, the following are the noise sources related to vehicles driving on site:

Daytime:

- Four (4) diesel trucks will be entering and five (5) will be leaving the project site between the hours of 7 a.m. and 7 p.m.

- Forty-five (45) personal drivers (Flex) will be entering the site, loading, and leaving the site between 4 p.m. and 6 p.m.

- One hundred and forty-two (142) vans will be leaving between the hours of 10 a.m. and 11:30 a.m.

- Forty (40) associate cars and one hundred and twenty-seven (127) DSP drivers will be coming into the site between the hours of 7 a.m. and 7 p.m. One hundred and six (106) associate cars will be leaving the site between the hours of 7 a.m. and 7 p.m.

Evening:

- Three (3) diesel trucks will be entering and two (2) will be leaving the project site between the hours of 7 p.m. and 10 p.m.

- One hundred and forty-two (142) vans will be entering the site to park in the van parking between the hours of 7 p.m. and 10 p.m.

- One hundred and twenty-seven (127) DSP drivers will be leaving the site between the hours of 7 p.m. and 10 p.m.

Nighttime:

- Seven (7) diesel trucks will be entering and leaving the project site between the hours of 10 p.m. and 7 a.m.

- There will be no van activities at nighttime.

- Eighty-nine (89) associate cars will be coming in and twenty-three (23) will be leaving the site between the hours of 10 p.m. and 7 a.m.

Noise sources were entered in the system as octave band sound power levels based on reference noise levels measured at a similar delivery station facility. NV5 took sound pressure level measurements with a reference distance of 50 feet in order to represent the noise levels associated with the different noise sources. The measurements included:

- Sound pressure levels of one truck driving and parking at the loading docks. This data is used to represent the noise levels associated with a single truck entering the site or being active at the loading dock.
- Sound pressure levels of 20 vans at the queuing area and 20 vans at the loading area. This data is used to represent the noise levels associated with 40 vans in the van queuing and staging areas.

Trucks

One area source was placed southwest of the proposed building to represent the truck activities (line haul) at the loading docks. One truck was modeled to be operating at the loading dock. One line source was placed between the truck entrance and the loading docks to model the noise from trucks driving on site. One truck was modeled to be driving on site.
Most of the truck activity is expected at night, however some truck activity will take place during the day. Therefore, trucks were modeled to be active during the day and at nighttime. Truck activities are staggered and no more than one truck is expected to be active at once on site. Trucks are instructed to be quiet at nighttime and avoid the use of horns, sound system, and other noise making devices. In addition, a Yard Marshall will be in place to monitor and assist vehicle movement while on site.

Vans

One area source was placed east of the proposed building to represent 72 vans queuing and loading. While the vans are queuing and loading, the drivers turn off the engine, therefore, the noise levels for van queuing and loading only include engine ignition noises, door opening/closing, van backup alarms and cart movements.

Employee and Van Parking

Van parking was represented by a parking area above in the eastern and southern portions of the site. The employee parking was represented by a parking area in the northwestern portion of the property. The noises associated with parking of vehicles that are accounted for in the model include engine ignition, vehicle doors opening and closing. The traffic volume of the parking lot is entered with the number of moves per parking bay (in and out are each considered a single move), the hour (for the time slices day and night) and the number of parking bays.

The model predicted the maximum noise levels produced by the truck, vans, and employee car activities using expected noise sources from trucks, vans, and employee cars. The sources were modeled as operating at the same time to represent the worst-case scenario.

Tables 2 and 3 list the sources that were considered in the analyses and Exhibit E shows the locations of noise sources and the proposed building.

Table 3 - Source Sound Power Levels in Octave Band Format (dBA, re 10-12W)- Fleets

Source name	Level (dBA)	Octave Band Centre Frequency (Hz), Sound Power Levels (dBA)								
		31	63	125	250	500	1,000	2,000	4,000	8,000
Van Staging	91.8	18	41.8	57.5	68.6	77.9	86.1	88.4	84.7	74.8
Truck Loading	104.3	48.0	71.7	86.2	95.1	96.9	96.9	98.3	96.2	93.8
Truck Path	104.3	48.0	71.7	86.2	95.1	96.9	96.9	98.3	96.2	93.8

Table 4 - Source Sound Power Levels – Parking Lots

Name	Size		Movements per hour			Road surface	Lw, ref (dBA)
			Day	Evening	Night		
Van parking	626	Parking bays	0.178	0.134	0	Asphaltic driving lanes	97.8
Employee Parking	185	Parking bays	0.525	0.442	0.387	Asphaltic driving lanes	91.2

5.1.1.2 HVAC Noise Sources

To assess the impacts created by the roof-top air conditioning units at the proposed delivery station building, data from the HVAC design package was entered for each exhaust fan and roof top unit. The HVAC units were modelled to be running continuously.

Table 5 - Source Sound Power Levels in Octave Band Format (dBA, re 10-12W)- HVACs

Source name	Reference	Level (dBA)	Octave Band Centre Frequency (Hz), Sound Power Levels (dBA)							
			63	125	250	500	1,000	2,000	4,000	8,000
EF-1	Lw/unit	61.8	42.8	50.9	59.4	53.8	53	47.2	43	36.9
EF-2 to 4	Lw/unit	69.1	46.8	55.9	63.4	63.8	62	61.2	54	44.9
EF-5	Lw/unit	67.5	45.8	58.9	61.4	59.8	61	60.2	52	46.9
EF-6 to 8	Lw/unit	71.7	52.8	63.9	65.4	66.8	64	60.2	53	45.9
RTU1	Lw/unit	89								
RTU2	Lw/unit	89								
RTU3	Lw/unit	79								
RTU4	Lw/unit	94								
RTU5 -11	Lw/unit	95.2	78.8	77.9	87.4	89.8	90	86.2	83	75.9

5.1.2 Sensitive Receivers

Sensitive receivers that may be affected by the proposed delivery station are the residences located to the north, south, and east of the site, and the elementary school located southeast of the site.

A total of six (7) receivers were modeled to evaluate the proposed project's operational noise impact. Receivers 1, 2 and 3 represent the residences located south of the site. Receiver 4 represents the Lark Ellen Village east of the site. Receivers 5 and 7 represent the residences of the single-family homes and the apartment complex located north of the site, respectively. Receiver 6 represents the school located southeast of the site. A receiver is denoted by a yellow dot. Receivers 1, 2, 3 and 6 are one-story high and Receivers 4, 5, and 7 are two-story high.

Exhibit G shows the predicted noise level map at the sensitive receptor areas. Exhibits H through K show the estimated noise level contours for the project.

Operational noise levels are anticipated to range between 46.9-55.6 dBA during the daytime, 45.9-55.5 dBA during the evening, and between 44.7-55.5 dBA at nighttime at the nearest sensitive receivers without any noise mitigation. Table 6 shows the results of the noise level predictions.

Noise from truck driving on site is the main noise contributor at nighttime. Table 7 shows the results of the noise level predictions from truck path.

Table 6 - Receiver Predicted Noise Levels

				Ambient Noise Levels dBA				Predicted noise levels dBA				Combined noise levels dBA				Difference between Ambient and Combined				Ambient noise levels higher than the source noise levels?		
No.	**Receiver name**	**Building Side**	**Floor**	**Day**	**Evening**	**Night**	**Lden**	**Day**	**Evening**	**Night**	**Lden**	**Day**	**Evening**	**Night**	**Lden**	**Day**	**Evening**	**Night**	**Lden**	**Day**	**Evening**	**Night**
1	1109 E Elgenia Avenue	North	GF	67.2	56.7	55.0	66.0	49.8	49.7	49.3	56.1	67.3	57.5	56.0	66.4	0.1	0.8	1.0	0.4	Yes	Yes	Yes
2	1209 E Elgenia Avenue	North	GF	67.2	56.7	55.0	66.0	51.8	51.5	50.8	57.6	67.3	57.8	56.4	66.6	0.1	1.1	1.4	0.6	Yes	Yes	Yes
3	1247 E Elgenia Avenue	North	GF	67.2	56.7	55.0	66.0	51	50.2	49.1	56.1	67.3	57.6	56.0	66.4	0.1	0.9	1.0	0.4	Yes	Yes	Yes
4	1350 E San Bernardino Road	West	GF	55.4	51.7	50.0	58.7	51	49.6	46.9	54.5	56.7	53.8	51.7	60.1	1.4	2.1	1.7	1.4	Yes	Yes	Yes
4	1350 E San Bernardino Road	West	1.Fl	55.4	51.7	50.0	58.7	51.7	50.6	48.8	56	56.9	54.2	52.5	60.6	1.6	2.5	2.4	1.9	Yes	Yes	Yes
5	1431 Cutter Way	South	GF	61.9	56.7	55.0	63.3	55.6	55.5	55.5	62.1	62.8	59.2	58.3	65.8	0.9	2.5	3.3	2.5	Yes	Yes	No
5	1431 Cutter Way	South	1.Fl	61.9	56.7	55.0	63.3	55.5	55.5	55.4	62.1	62.8	59.2	58.2	65.8	0.9	2.5	3.2	2.5	Yes	Yes	No
6	Grovecenter Elementary School	North	GF	67.2	56.7	55.0	66.0	46.9	45.9	44.7	51.7	67.2	57.0	55.4	66.2	0.0	0.3	0.4	0.2	Yes	Yes	Yes
7	Mountain View Venture	South	GF	61.9	56.7	55.0	63.3	51.1	50.2	49.4	56.3	62.2	57.6	56.1	64.1	0.3	0.9	1.1	0.8	Yes	Yes	Yes
7	Mountain View Venture	South	1.Fl	61.9	56.7	55.0	63.3	51.6	50.9	50.3	57.2	62.3	57.7	56.3	64.3	0.4	1.0	1.3	1.0	Yes	Yes	Yes

*The Long-Term (S4) noise levels were used as the ambient noise levels for Receiver 3 for daytime, evening, and nighttime hours. The ambient noise levels for all other receivers for evening and nighttime were determined using S4 by comparing the noise level difference during the daytime and applying the difference in the evening and at night. The Short-Term noise level of S1 was used as the daytime ambient noise levels for Receivers 1, 2, and 5. The Short-Term noise level of S3 was used as the daytime ambient noise levels for Receivers 4 and 6.

Table 7 - Receiver Predicted Noise Levels from Truck Path

			Noise levels from truck path			
No.	**Receiver name**	**Floor**	**Day**	**Evening**	**Night**	**Lden**
1	1109 E Elgenia Avenue	GF	46.9	46.9	46.9	53.5
2	1209 E Elgenia Avenue	GF	45.2	45.2	45.2	52.1
3	1247 E Elgenia Avenue	GF	41.9	41.9	41.9	48.6
4	1350 E San Bernardino Road	GF	38.7	38.7	38.7	45.4
4	1350 E San Bernardino Road	1.Fl	39.2	39.2	39.2	45.9
5	1431 Cutter Way	GF	53.1	53.1	53.1	59.7
5	1431 Cutter Way	1.Fl	52.7	52.7	52.7	59.4
6	Grovecenter Elementary School	GF	37.9	37.9	37.9	44.6
7	Mountain View Venture	GF	44.7	44.7	44.7	51.3
7	Mountain View Venture	1.Fl	44.1	44.1	44.1	50.7

Exhibit G –Operations Noise Level Projections

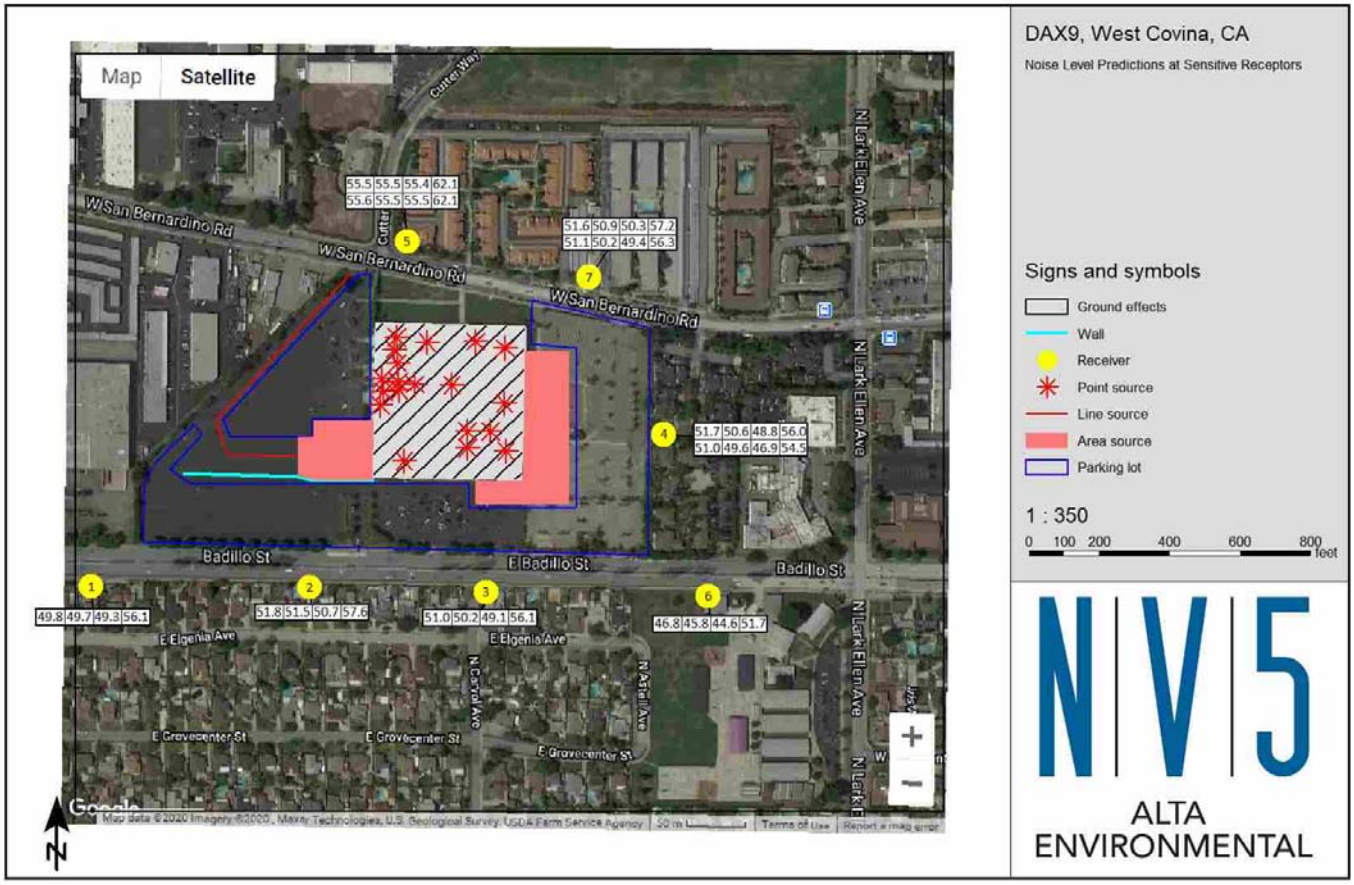


Exhibit H –Operations Noise Level Contours (Daytime)

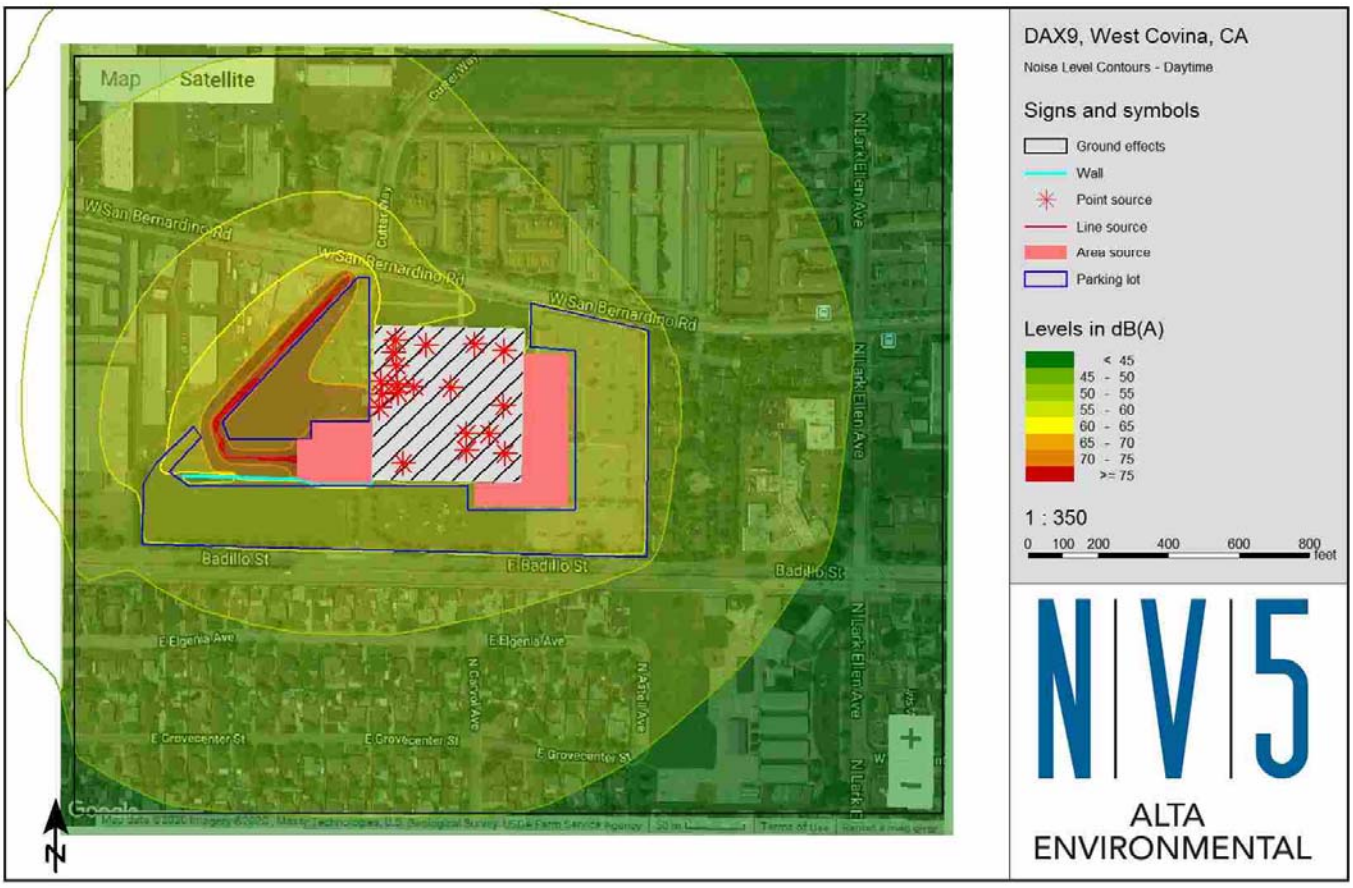


Exhibit I –Operations Noise Level Contours (Evening)

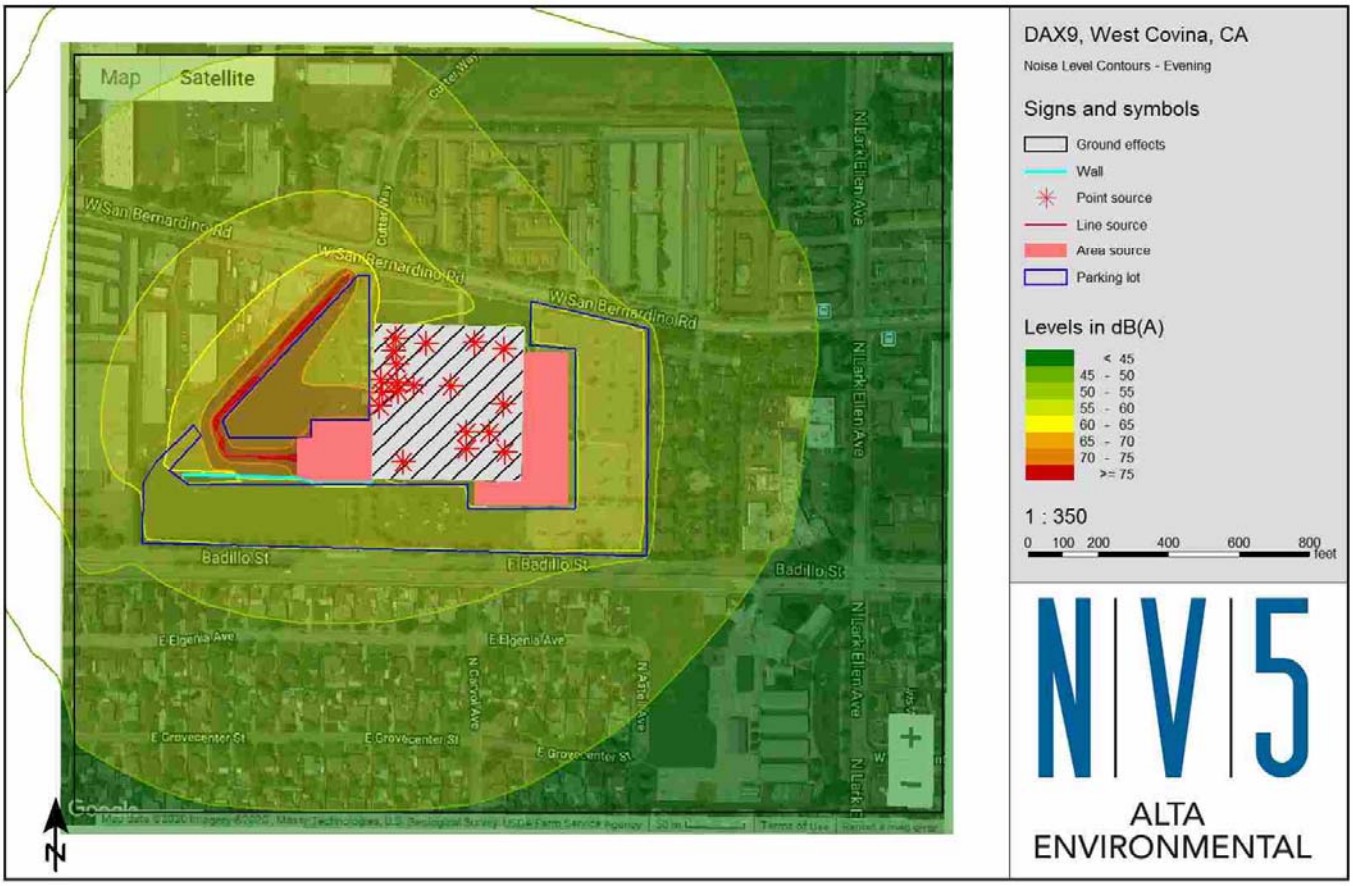


Exhibit J – DAX9, Operations Noise Level Contours (Nighttime)

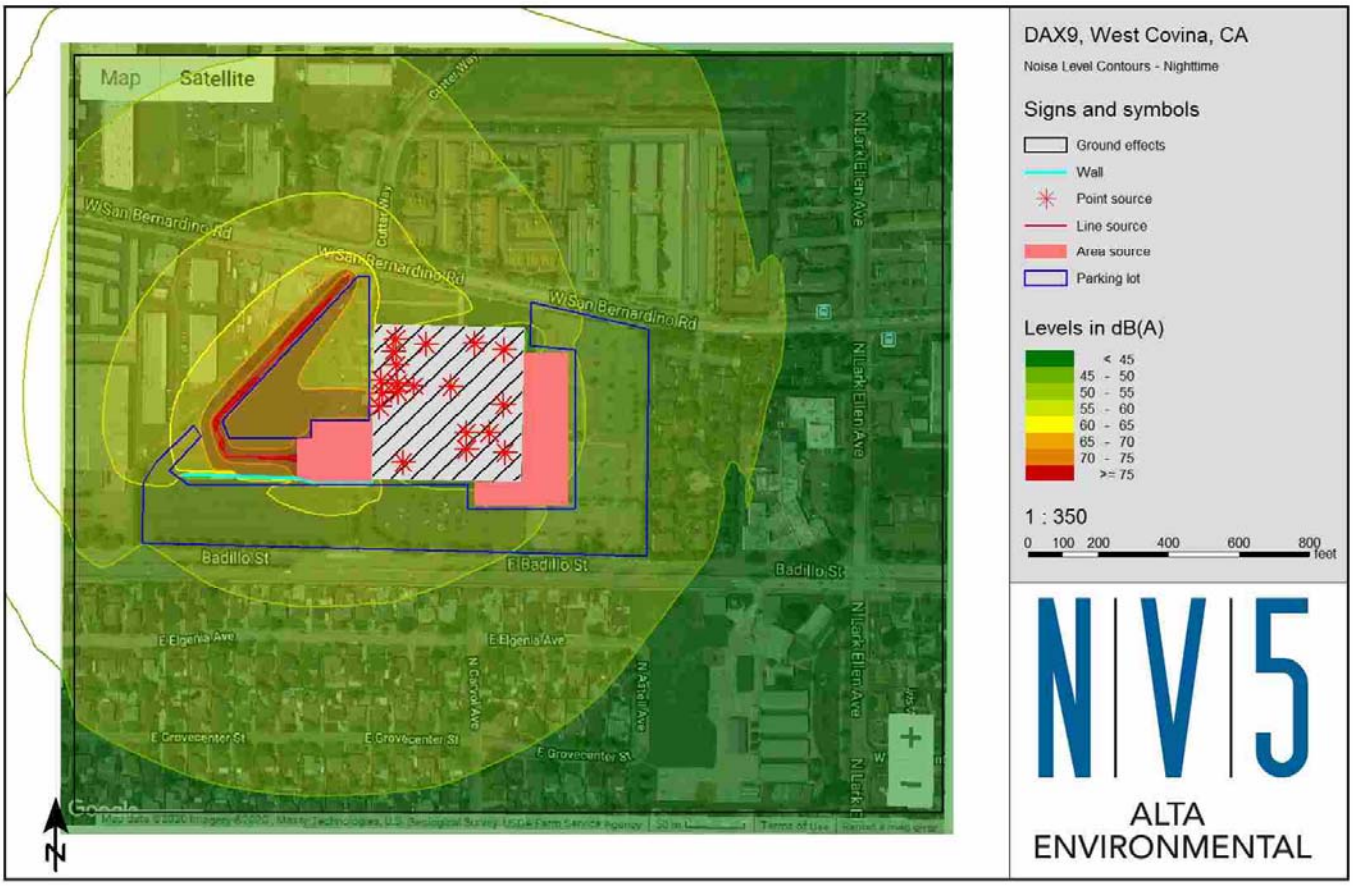
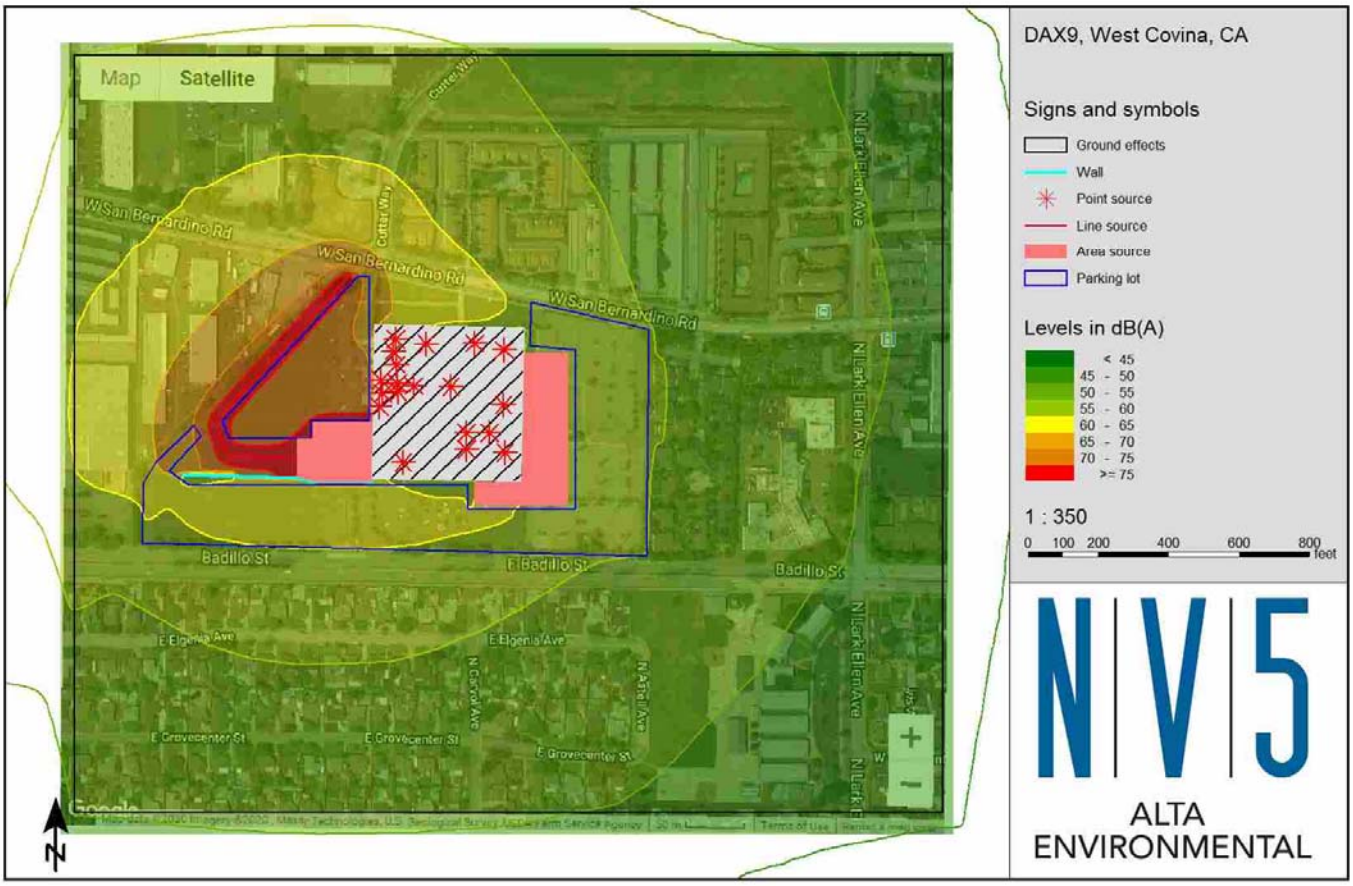


Exhibit K – DAX9, Operations Noise Level Contours (Lden)



5.1.3 Impact Analysis

As discussed above, the City of West Covina prohibits any noise within any residential zone of the city that is loud, unnecessary or unusual which unreasonably disturbs the peace and quiet of any residential neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area. Typically, a change in noise level of 5 dB is readily perceptible and therefore may be perceived as a noise disturbance.

The ambient noise levels were measured to be 67.2 dBA during the daytime, 56.7 dBA during the evening, and 55 dBA at nighttime for the sensitive receptors north of the site, 61.9 dBA during the daytime, 56.7 dBA during the evening, and 55 dBA at nighttime for the sensitive receptors south of the site and 55.4 dBA during the daytime, 51.7 dBA during the evening, and 50 dBA at nighttime for the sensitive receptors east of the site .Operational outdoor noise levels are anticipated to range between 46.9-55.6 dBA during the daytime, 45.9-55.5 dBA during the evening, and between 44.7-55.5 dBA at nighttime at the nearest sensitive receivers located north, east, and south of the site. The difference between the combined noise levels, including the predicted operational noise levels and the ambient noise levels, and the ambient noise levels is expected to be between 0-1.6dB during the daytime, 0.3-2.5dB in the evening and 0.4-3.3dB at nighttime. The ambient noise levels are not expected to be raised by more than 5dB and therefore, the activities on the proposed site are not expected to cause any disturbances during the daytime, evening and nighttime. In addition, residents living off W San Bernardino Road are not expected to be noise sensitive to traffic noise including noise from trucks as the W San Bernardino Road is a busy road and a designated truck route.

The site parking lot is divided in 2 sections: the employee parking lot located west of the site and the van parking lot located south and east of the site.

The employee parking lot is expected to generate noise during daytime and nighttime when employees' shift change. A maximum of 70 employees will be coming in and out of the parking lot at once. Sensitive receptors east and south of the site are not expected to be impacted by the noise from this activity due to the building and a wall being located between the sensitive receptor and the site. Sensitive receptors north of the site are about 300 feet from the employee parking lot and W San Bernardino Road is between the site and the residences, the residences are not expected to hear the activity on the employee parking lot due to distance attenuation and the high level of existing traffic on W San Bernardino Road during the daytime and at night.

The van parking lot is expected to generate noise throughout the day and evening intermittently. Van drivers will enter the site in the morning between 9am and 11am and park their car in the van driver parking lot located southwest of the building. They will then pick up a van in the van parking lot area (south and east portion of the site) and will drive to the staging and loading area to load their packages to deliver. Once the delivery is complete, they will return to the site and park the van back in the van parking lot. Site parking attendants are often used on site during the daytime to direct traffic on site and to direct the van drivers to their parking area which reduced the amount of time the van will be active on site. Van activity is also staggered to reduce the number of vans active at once on site and limit the noise. Vans have backup alarms, however the staging area and loading areas are set up for forward movement to avoid using back up alarms. Backup alarms will be used if vans must back up out of their parking space. Vans are expected to be active in the parking lot between 10am and 11:30am and between 7pm to 9pm. The van parking lot has

534 parking spaces but only 142 vans are expected to be active daily. Van backup beepers were measured to be producing a noise level of 78dBA at 20 feet. Based on distance attenuation, at 50 feet, where the closest residence east of site is located, maximum intermittent parking lot noise events would be approximately 70dBA and approximately 60 dBA at 150 feet where the closest residences north and south of the site would be located. This parking area would surround the proposed building to the east, and south so individual noise events would be spread out across the site at varying distances from residences. Due to the staggered schedule, the large amount of parking space throughout the site and the limited use of the backup alarms, those backup alarms are expected to be heard on site seldomly during the morning and evening van activity. In addition, due to the location of the site between two busy roads with heavy traffic and an hospital located east of the Lark Ellen Village with an Ambulance entrance just east of the Lark Ellen Village residences, it is expected that higher number of impulsive noise already exist as part of the ambient noise and the sensitive receptors near the site (north, east and south) will not be disturbed by the site activities during the daytime and in the evening. Therefore, the noise generated on the site parking lots, employees and vans, is not expected to cause a disturbance for the residences north, east and south of the site.

Trucks at the Project site would also utilize backup alarms during loading/unloading activities. Backup alarms produce a typical noise level of 97dBA at 1m (3.28ft). Based on distance attenuation, at 350ft, where the closest residence south of the site is located, backup alarms noise levels would be approximately 56dBA and 52dBA at 550ft, where the closest residence north of the site is located. The 12ft wall located south of the loading docks will provide approximately 5dB additional attenuation to the residences south of the site. Residences north of the site will be partially shielded by the building. Existing noise in the vicinity of the site include truck noise, vehicular traffic including loud motorcycle. Based on the maximum noise levels measured in the vicinity of the site, between 73dBA and 86dBA, and the ambient noise level of 55dBA measured at nighttime, trucks backup alarms are not expected to cause additional disturbance for the residences north and south of the site.

The City of West Covina General Plan requires to evaluate the outdoor noise impact, however indoor noise impact was also evaluated in this analysis to evaluate the risk of possible noise disturbance due to night activities at the site. The main activity at night will be trucks entering the site and driving to the loading docks. Truck arrival will be staggered so not more than one truck will be driving at once on the property. Based on the 20dB reduction from windows closed mentioned in the General Plan, the indoor noise levels from truck path will be between 17.9 dBA and 33.1 dBA at the nearest sensitive receptors. The World Health Organization, in the Guidelines for Community Noise (April 1999), provides guidance for indoor noise levels related to sleep disturbance. If the noise is continuous, a maximum indoor noise level of 30 dBA should not be exceeded. If the noise is not continuous, noise events exceeding 45 dBA should be limited. The noise from trucks driving on site will be limited to about 5 minutes per hour and is not expected to exceed 33.1 dBA at the residences located north, east, and south of the site. In addition, the ambient noise levels are expected to be higher throughout the night than the operational noise levels. Therefore, it is not expected that residents will be disturbed by the truck activities.

Therefore, the site's operational noise impacts will **be less than significant**.

A 12ft concrete masonry sound wall, color to match the building, is already included as part of the current concept plan for the site, additional mitigations measures will not be necessary for this site with the current concept plan.

5.2 Off-site traffic noise impacts

Offsite Traffic noise was assessed using the FHWA Traffic Noise Model Version 3.0 (TNM 3.0). TNM 3.0 is a computer model released in 2020. Key inputs to the traffic noise model were roadway widths, traffic mix, and speed. Noise levels were modeled for the project site for Existing (2020) and Existing Plus Project.

5.2.1 Off-Site Traffic Noise Prediction Model Inputs

The Project would generate traffic along adjacent roads including W San Bernardino Road and Badillo Street. Table 8 identifies the 4 roadway segments and the posted vehicle speeds.

Table 8 – Off-site Roadways

ID	Roadway	Segment	Receiving Land Use[1]	Vehicle Speed (mph)[2]
1	W San Bernardino Road	Westbound - N Lark Ellen Ave to N Vincent Ave	Sensitive	45
2	W San Bernardino Road	Eastbound - N Vincent Ave to N Lark Ellen Ave	Sensitive	45
3	Badillo Street	Eastbound - N Vincent Ave to N Lark Ellen Ave	Sensitive	45
4	Badillo Street	Westbound - N Lark Ellen Ave to N Vincent Ave	Sensitive	45

1 Noise sensitive uses limited to noise sensitive residential land uses
2 Vehicle Speed Posted

The Average Daily Traffic (ADT) used in this study are presented in Table 9 based on the traffic analysis done by NV5 for this project for the following scenario: Existing (2021) and Existing + Project (2021). The ADT vary for each roadway segment based on the existing traffic volumes and the combination of project traffic distributions.

Table 9 – Average Daily Traffic Volumes with Time of Day and Vehicle Splits

		Existing (2021)		Existing + Project (2021)		Increase	
		San Bernardino Road	Badillo Street	San Bernardino Road	Badillo Street	San Bernardino Road	Badillo Street
ADT		16,000	19,000	16,772	19,142	5%	1%
Daytime (7am-7pm)	Cars/Passenger Vehicles	12,920	15,827	13,425	15,827	4%	0%
	Medium Trucks	544	323	544	323	0%	0%
	Heavy Trucks	136	0	145	0	6%	0%
Evening (7pm-10pm)	Cars/Passenger Vehicles	912	1,117	1,039	1,259	12%	11%
	Medium Trucks	38	23	38	23	0%	0%
	Heavy Trucks	10	0	15	0	34%	0%
Night (10pm-7am)	Cars/Passenger Vehicles	1,368	1,676	1,480	1,676	8%	0%
	Medium Trucks	58	34	58	34	0%	0%
	Heavy Trucks	14	0	28	0	50%	0%

The traffic volumes were taken by National Data & Surveying Services (NDS). 24-hour volume and classification counts were taken on Badillo Street and San Bernardino Road between Vincent Ave and Lark Ellen Ave on March 2, 2021. NV5 adjusted the volumes using factors developed for the Traffic Impact Study to account for COVID's impact on traffic volumes. The resulting daily volumes are in line with historic counts and anticipated growth (between the years the historic counts were taken and 2021).

5.2.2 Off-Site Traffic Noise Impact

The noise levels from off-site transportation sources were modeled including only vehicular noise on area roadways and do not include noise contributions from the surrounding stationary noise sources within the project area.

Three main receivers were modeled to be representative of the sensitive receivers near the site:

- One receiver at 1431 Cutter Way representative of residences along W San Bernardino Road.
- One receiver at the Lark Ellen Village Apartments representative to the residence east of the project site.

- One receiver at 1209 E Elgenia Avenue representative of the residences along Badillo Street.

Table 10 presents the CNEL noise levels at the sensitive receptors for the Existing conditions and Existing + Projects conditions. As shown in Table 10, the Project off-site traffic noise level will result in a maximum 0.4 dB increase of noise levels.

Table 10 – Traffic Noise Levels

Modeled Receptor	Distance to Centerline	Key Roadway Segment	Existing Noise Level (dBA CNEL)	Existing + Project Noise Level (dBA CNEL)	Noise Level Increase (dB)
Residences on W San Bernardino Road	80 feet	W San Bernardino	65.6	66.0	0.4
Residences at Lark Ellen Village Apartments	260 feet/ 450 feet	W San Bernardino/Badillo Street	59.9	60.3	0.4
Residences on Badillo Street	70 feet	Badillo Street	66.8	66.8	0

Therefore, noise impact from increased traffic would be **less than significant**.

5.3 Construction Noise and Vibration Impact

This section analyzes the potential exposure to noise and evaluates the impacts resulting from the short-term construction activities associated with the development of the Project. Scope of work includes demolition of existing parking lot, site prep, rough and fine grading, paving, landscaping, installation of light poles and signage.

To assess the potential for short-term construction noise impacts, three representative sensitive receiver locations, were identified as shown in Table 12. All distances are measured from the Project site center to the outdoor living areas (e.g., private backyards) or at the building facade, whichever is closer to the Project site. 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. Distance is measured in a straight line from the project boundary for each phase to each receiver location. Refer to Table 12 for the distances of the sensitive receptors to the equipment.

5.3.1 Construction Noise Sources

Construction is anticipated to start November 2021 and last until April 2022. Construction activities will take place from 7 a.m. to 8 p.m. which is within the City's allowable construction hours and will be temporary in nature.

Noise impacts from the construction activities were evaluated by estimating the typical noise levels for each type of construction equipment using the Federal Highway Administration (FHWA) roadway construction model (RCNM) and comparing the Leq at the nearest sensitive receptors with the ambient noise levels from the field measurement (see Table 11).
Estimated usage was estimated for each expected equipment from the construction activities as shown in Table 11. Each type of construction equipment produces a maximum noise levels (Lmax) at a reference distance of 50 feet from the noise source.

Table 11 – Maximum Noise Levels and Estimated Usage of Typical Construction Equipment

Type of Equipment	Estimated Usage (%)	Lmax at 50 Feet (dBA)
Backhoe	40	77.6
Excavator	40	80.7
Front End Loader	40	79.1
Soil Compactor	20	83.2
Grader	40	85
Paver	50	77.2

Using the RCNM, the noise levels were calculated for nearest sensitive receptors from the construction equipment, as presented in Table 12.

Table 12 – Predicted Construction Noise Levels at the Nearest Sensitive Receptors

No.	Receiver Name	Receiver Location	Distance to Equipment	Daytime Ambient Noise Levels (dBA)	Predicted Noise levels Leq (dBA)	Significant Impact?
1	1431 Cutler Way	150 ft northeast of the site	500	61.9	64.7	No
2	1350 E San Bernardino Road	30 ft east of the site	220	55.4	71.9	No
3	1209 E Elgenia Avenue	100 ft south of the site	350	67.2	67.8	No

5.3.2 Construction Noise Impact

Construction activities for this project is expected to be light as the building is already built.
As shown in Table 12, the predicted noise levels at residences northeast, east, and south of the site will be less than 80 dBA. In addition, construction activities will only take place during the daytime between 7 a.m. and 8 p.m.

Therefore, construction noise impacts are expected to be **less than significant** during construction of the proposed project.

5.3.3 Ground-borne Vibration During Construction

This section focuses on the assessment of potential impacts associated with construction-generated vibration.

The City of West Covina has not adopted significance thresholds for vibration. Vibration may be expressed through a number of parameters that describe the displacement, the vibration velocity, or acceleration experienced by an object. Ground-borne vibration related to human annoyance is related to rms velocity levels, expressed in VdB. Vibration level L_v can be estimated using the following equation:

$$L_{vdistance} = L_{vref} - 30\log(D/25)$$

where:

$L_{vdistance}$ = the rms velocity level adjusted for distance, VdB
L_{vref} = the source reference vibration level at 25 ft, VdB
D = distance from the equipment to the receiver, ft

The construction activities for this project are expected to be limited to light construction in the parking lot areas. The construction equipment is not expected to come within 100 feet to the residences on the east of the site. North and south of the site, the construction equipment swill not be within at least 200 feet from the closest residences.

Loaded trucks or similar construction equipments could create vibration levels of 86VdB at 25 feet. At 100 feet, loaded trucks would create vibration level of 68VdB which would be below the nuisance threshold. Other construction equipment expected to be used as part of this project has lower vibration levels and therefore, will not be a nuisance.

Therefore, vibration impacts will be **less than significant.**

6 MITIGATION MEASURE

A 12ft concrete masonry sound wall, color to match the building, is already included as part of the current concept plan for the site, additional mitigations measures will not be necessary for this site with the current concept plan.

7 REFERENCES

- West Covina Code of Regulatory Ordinances, Chapter 15, Article IV, Section 15-85 to Section 15-95
- West Covina Code of Regulatory Ordinances, Chapter 26, Article X, Section 26-580
- West Covina Code of Regulatory Ordinances, Chapter 1, Section 1-37
- West Covina General Plan, December 2016
- Federal Highway Administration, Traffic Noise Model TNM Software Version 3.0.
- Caltrans, Transportation- and Construction-Induced Vibration Guidance Manual, April 2020.
- California Department of Transportation, Technical Noise Supplement, September 2013
- Federal Transit Administration, Transit Noise and Vibration Impact Assessment, September 2018.
- Soundplan Essential 5.0, Noise Sources: Parking Noise.

APPENDIX A – Ambient Noise Measurements

NV5
ALTA ENVIRONMENTAL

Noise Measurement Field Data			
Project:	DAX9 West Covina, CA	Project Number:	202044.07
Sample Name:	S4 – 24 Hour Sample	Date:	10/6-10/7/20
Analyst:	Natalie Kvochak, Therese Rizarri, and Carbany Becerril	Time:	10:39-10:39
Location:	1211 Badillo Street – West Parking Lot		
Noise Sources:	Automobiles, semitrucks, motorcycles, airplanes, trains, industrial activities, animal noises, pedestrians		
Comments:	Day: Moderate traffic on Badillo Street and San Bernardino Road. Airplanes flying overhead. Loading and unloading activities at neighboring facilities. Occasional emergency vehicle with siren, semitruck, or motorcycle passes by. Bird chirping. Occasional pedestrian walks by. Evening: Moderate traffic on Badillo Street and San Bernardino Road. Airplanes and helicopter flying overhead. Occasional train horn in distance. Occasional emergency vehicle with siren, semitruck, or motorcycle drives by. Bird and cricket chirping and dog barking. Humming from streetlights. Occasional pedestrian walks by Night: Light traffic on Badillo Street and San Bernardino Road. Some industrial activity at nearby facilities. Occasional semitruck or motorcycle drives by, pedestrian walks by, or train horn in distance. Birds chirping and dogs barking. Day: Light to moderate traffic on Badillo Street and San Bernardino Road. Airplanes/helicopter flies overhead. Occasional emergency vehicle with siren, semitruck, or motorcycle drives by. Occasional train horn in distance. Some gardening activities at near by sites.		

Results (dBA):			
Lden:	LDay (07:00-19:00)	LEvening (19:00-22:00):	LNight (22:00-07:00):
58.5	55.7	53.2	50.6

Equipment		**Weather**	
Sound Level Meter:	SoundAdvisor™ Model 831C	Temperature (˚F):	79˚ F
Calibrator:	CAL200	Wind (MPH):	2 MPH
Response Time:	Slow	Sky:	Clear
Weighting:	A weighting	Barometric Pressure:	N/A
Microphone Height:	5’ feet	Humidity:	32%

Photo:

Noise Measurement Field Data			
Project:	DAX9 West Covina, CA	Project Number:	202044.07
Sample Name:	S1 - Daytime	Date:	10/6/2020
Analyst:	Natalie Kvochak & Therese Rizarri	Time:	08:37-08:52
Location:	1211 Badillo Street- South Parking Lot		
Noise Sources:	Automobiles, motorcycles, semitrucks, airplanes, animals, pedestrians		
Comments:	Moderate traffic on Badillo Street. Faint airplane sounds and light pedestrian traffic. Birds chirping. 8:44 motorcycle drives by, car alarm goes off, train horn in distance, and pedestrian walks by. 8:50 semitruck drives by. 8:52 semitruck drives by.		

Results (dBA):		
Leq:	Ls(min):	Ls(max):
67.2	49.5	85.8

Equipment		**Weather**	
Sound Level Meter:	SoundAdvisor™ Model 831C	Temperature (˚F):	70˚ F
Calibrator:	CAL200	Wind (MPH):	2 MPH
Response Time:	Slow	Sky:	Clear
Weighting:	A weighting	Barometric Pressure:	N/A
Microphone Height:	5’ feet	Humidity:	47%

Photo:

NV5
ALTA ENVIRONMENTAL

Noise Measurement Field Data			
Project:	DAX9 West Covina, CA	Project Number:	202044.07
Sample Name:	S2 - Daytime	Date:	10/6/2020
Analyst:	Natalie Kvochak & Therese Rizarri	Time:	09:10-09:25
Location:	1233 Elgenia Street		
Noise Sources:	Automobiles, animals, and pedestrians		
Comments:	Light to no traffic on Elgenia Street. Bird chirping. Can faintly hear traffic from Badillo Street. 9:20 pedestrian walks by with dog. 9:23 pedestrian walks by. Car with muffler drives by at 9:24; dog barking at 9:24.		

Results (dBA):		
Leq:	Ls(min):	Ls(max):
50.6	46.2	62.9

Equipment		Weather	
Sound Level Meter:	SoundAdvisor™ Model 831C	Temperature (˚F):	72˚ F
Calibrator:	CAL200	Wind (MPH):	0 MPH
Response Time:	Slow	Sky:	Clear
Weighting:	A weighting	Barometric Pressure:	N/A
Microphone Height:	5’ feet	Humidity:	42%

Photo:

Noise Measurement Field Data			
Project:	DAX9 West Covina, CA	Project Number:	202044.07
Sample Name:	S3 - Daytime	Date:	10/6/2020
Analyst:	Natalie Kvochak & Therese Rizarri	Time:	09:41-09:56
Location:	529 Cutler Way		
Noise Sources:	Automobiles, semitrucks, motorcycles, animals, trains, industrial activities, and pedestrians		
Comments:	Moderate to heavy traffic on San Bernardino Road. Semi-truck parked on Cutler Way with motor running. Back up alarms in distance. 9:42 truck drives by and pedestrians with dogs walk by. 9:47 train horn in distance and truck drives by. Truck drives by at 9:48, 9:50, and 9:51. Car playing loud music drives by from 9:53-9:54.		

Results (dBA):		
Leq:	Ls(min):	Ls(max):
61.9	50.2	81.0

Equipment		**Weather**	
Sound Level Meter:	SoundAdvisor™ Model 831C	Temperature (˚F):	75˚ F
Calibrator:	CAL200	Wind (MPH):	0 MPH
Response Time:	Slow	Sky:	Clear
Weighting:	A weighting	Barometric Pressure:	N/A
Microphone Height:	5’ feet	Humidity:	38%

Photo:

APPENDIX B – SoundPlan Essential – Contributions

Contribution Levels of the Receivers

Source name		Level Day	Evening	Night	Lden
		dB(A)			
1109 E Elgenia Ave	GF	49.8	49.7	49.3	56.1
Associate Parking		32.9	32.2	31.6	38.5
EF-1		-0.1	-0.1	-0.1	6.6
EF-2		6.0	6.0	6.0	12.7
EF-3		4.2	4.2	4.2	10.9
EF-4		5.3	5.3	5.3	11.9
EF-5		5.3	5.3	5.3	12.0
EF-6		7.1	7.1	7.1	13.8
EF-7		7.7	7.7	7.7	14.4
EF-8		7.9	7.9	7.9	14.6
RTU1		25.7	25.7	25.7	32.4
RTU2		25.6	25.6	25.6	32.3
RTU3		15.4	15.4	15.4	22.1
RTU4		30.0	30.0	30.0	36.6
RTU5		31.2	31.2	31.2	37.9
RTU6		30.4	30.4	30.4	37.1
RTU7		31.8	31.8	31.8	38.5
RTU8		31.3	31.3	31.3	38.0
RTU9		31.4	31.4	31.4	38.1
RTU10		31.0	31.0	31.0	37.7
RTU11		31.5	31.5	31.5	38.2
Truck loading docks		43.9	43.9	43.9	50.6
Truck path		46.9	46.9	46.9	53.5
Van parking		39.8	38.6	-	38.8
Van staging		26.3	-	-	23.3
1209 E Elgenia Avenue	GF	51.8	51.5	50.7	57.6
Associate Parking		34.8	34.1	33.5	40.4
EF-1		3.6	3.6	3.6	10.2
EF-2		8.9	8.9	8.9	15.6
EF-3		7.7	7.7	7.7	14.4
EF-4		9.2	9.2	9.2	15.9
EF-5		11.6	11.6	11.6	18.2
EF-6		10.4	10.4	10.4	17.0
EF-7		11.6	11.6	11.6	18.2
EF-8		12.2	12.2	12.2	18.8
RTU1		30.4	30.4	30.4	37.1
RTU2		30.1	30.1	30.1	36.8
RTU3		19.4	19.4	19.4	26.1
RTU4		33.6	33.6	33.6	40.3
RTU5		34.3	34.3	34.3	41.0
RTU6		33.6	33.6	33.6	40.3
RTU7		35.5	35.5	35.5	42.2
RTU8		35.0	35.0	35.0	41.7
RTU9		35.9	35.9	35.9	42.5
RTU10		35.3	35.3	35.3	42.0
RTU11		36.3	36.3	36.3	43.0
Truck loading docks		47.3	47.3	47.3	53.9
Truck path		45.4	45.4	45.4	52.1
Van parking		44.8	43.5	-	43.8
Van staging		34.2	-	-	31.2
1247 E Elgenia Ave	GF	51.0	50.2	49.1	56.1
Associate Parking		30.9	30.2	29.6	36.5
EF-1		2.8	2.8	2.8	9.5
EF-2		8.7	8.7	8.7	15.4
EF-3		6.9	6.9	6.9	13.6
EF-4		7.8	7.8	7.8	14.5
EF-5		12.2	12.2	12.2	18.8
EF-6		11.9	11.9	11.9	18.6
EF-7		14.1	14.1	14.1	20.8
EF-8		16.7	16.7	16.7	23.4
RTU1		30.3	30.3	30.3	37.0
RTU2		29.9	29.9	29.9	36.6
RTU3		19.3	19.3	19.3	25.9
RTU4		33.4	33.4	33.4	40.1

Contribution Levels of the Receivers

Source name		Level Day	Evening	Night	Lden
			dB(A)		
RTU5		34.7	34.7	34.7	41.4
RTU6		34.8	34.8	34.8	41.5
RTU7		36.0	36.0	36.0	42.6
RTU8		36.4	36.4	36.4	43.0
RTU9		38.8	38.8	38.8	45.5
RTU10		38.8	38.8	38.8	45.5
RTU11		39.7	39.7	39.7	46.4
Truck loading docks		43.4	43.4	43.4	50.1
Truck path		41.9	41.9	41.9	48.6
Van parking		44.8	43.6	-	43.8
Van staging		41.0	-	-	38.0
1350 E San Bernardino Road	GF	51.0	49.6	46.9	54.5
Associate Parking		26.8	26.0	25.5	32.4
EF-1		0.9	0.9	0.9	7.6
EF-2		8.2	8.2	8.2	14.8
EF-3		5.4	5.4	5.4	12.0
EF-4		5.4	5.4	5.4	12.1
EF-5		7.1	7.1	7.1	13.8
EF-6		15.9	15.9	15.9	22.6
EF-7		17.1	17.1	17.1	23.8
EF-8		17.5	17.5	17.5	24.2
RTU1		28.5	28.5	28.5	35.2
RTU2		28.4	28.4	28.4	35.1
RTU3		18.3	18.3	18.3	24.9
RTU4		33.0	33.0	33.0	39.7
RTU5		35.0	35.0	35.0	41.6
RTU6		36.8	36.8	36.8	43.5
RTU7		34.9	34.9	34.9	41.6
RTU8		36.3	36.3	36.3	43.0
RTU9		37.5	37.5	37.5	44.1
RTU10		39.2	39.2	39.2	45.9
RTU11		37.4	37.4	37.4	44.1
Truck loading docks		35.2	35.2	35.2	41.9
Truck path		38.7	38.7	38.7	45.4
Van parking		47.4	46.2	-	46.4
Van staging		43.4	-	-	40.4
1350 E San Bernardino Road	1.Fl	51.7	50.6	48.8	56.0
Associate Parking		28.2	27.5	26.9	33.8
EF-1		1.9	1.9	1.9	8.5
EF-2		9.6	9.6	9.6	16.3
EF-3		7.0	7.0	7.0	13.7
EF-4		7.1	7.1	7.1	13.8
EF-5		8.8	8.8	8.8	15.5
EF-6		17.0	17.0	17.0	23.7
EF-7		18.2	18.2	18.2	24.9
EF-8		18.5	18.5	18.5	25.2
RTU1		29.3	29.3	29.3	36.0
RTU2		29.2	29.2	29.2	35.9
RTU3		19.1	19.1	19.1	25.7
RTU4		33.8	33.8	33.8	40.4
RTU5		36.7	36.7	36.7	43.4
RTU6		38.8	38.8	38.8	45.4
RTU7		36.7	36.7	36.7	43.4
RTU8		38.4	38.4	38.4	45.1
RTU9		39.6	39.6	39.6	46.3
RTU10		41.4	41.4	41.4	48.0
RTU11		39.5	39.5	39.5	46.2
Truck loading docks		38.0	38.0	38.0	44.7
Truck path		39.2	39.2	39.2	45.9
Van parking		47.3	46.1	-	46.3
Van staging		42.7	-	-	39.7
1431 Cutter Way	GF	55.6	55.5	55.5	62.1
Associate Parking		42.5	41.8	41.2	48.1
EF-1		6.2	6.2	6.2	12.9

Contribution Levels of the Receivers

Source name		Level Day	Evening	Night	Lden
			dB(A)		
EF-2		16.4	16.4	16.4	23.1
EF-3		11.6	11.6	11.6	18.3
EF-4		9.9	9.9	9.9	16.6
EF-5		8.1	8.1	8.1	14.7
EF-6		16.6	16.6	16.6	23.3
EF-7		14.1	14.1	14.1	20.8
EF-8		12.2	12.2	12.2	18.9
RTU1		33.6	33.6	33.6	40.2
RTU2		34.1	34.1	34.1	40.8
RTU3		25.5	25.5	25.5	32.2
RTU4		42.8	42.8	42.8	49.4
RTU5		42.9	42.9	42.9	49.6
RTU6		41.5	41.5	41.5	48.2
RTU7		39.6	39.6	39.6	46.3
RTU8		39.2	39.2	39.2	45.9
RTU9		36.5	36.5	36.5	43.2
RTU10		36.2	36.2	36.2	42.9
RTU11		35.8	35.8	35.8	42.5
Truck loading docks		46.8	46.8	46.8	53.4
Truck path		53.1	53.1	53.1	59.7
Van parking		35.5	34.2	-	34.5
Van staging		23.3	-	-	20.3
1431 Cutter Way	1.Fl	55.5	55.5	55.4	62.1
Associate Parking		42.0	41.3	40.7	47.6
EF-1		6.4	6.4	6.4	13.1
EF-2		16.9	16.9	16.9	23.6
EF-3		11.8	11.8	11.8	18.5
EF-4		10.2	10.2	10.2	16.9
EF-5		8.4	8.4	8.4	15.1
EF-6		17.0	17.0	17.0	23.6
EF-7		14.2	14.2	14.2	20.9
EF-8		12.4	12.4	12.4	19.0
RTU1		33.7	33.7	33.7	40.4
RTU2		34.3	34.3	34.3	40.9
RTU3		25.6	25.6	25.6	32.3
RTU4		43.7	43.7	43.7	50.4
RTU5		44.2	44.2	44.2	50.9
RTU6		42.8	42.8	42.8	49.5
RTU7		39.9	39.9	39.9	46.6
RTU8		39.5	39.5	39.5	46.1
RTU9		36.9	36.9	36.9	43.5
RTU10		36.5	36.5	36.5	43.2
RTU11		36.2	36.2	36.2	42.9
Truck loading docks		46.3	46.3	46.3	53.0
Truck path		52.7	52.7	52.7	59.4
Van parking		34.8	33.6	-	33.8
Van staging		24.4	-	-	21.4
Grovecenter Elementary School	GF	46.8	45.8	44.6	51.7
Associate Parking		26.0	25.2	24.6	31.5
EF-1		-1.1	-1.1	-1.1	5.6
EF-2		5.6	5.6	5.6	12.3
EF-3		3.1	3.1	3.1	9.8
EF-4		3.3	3.3	3.3	10.0
EF-5		5.8	5.8	5.8	12.5
EF-6		10.8	10.8	10.8	17.4
EF-7		12.1	12.1	12.1	18.8
EF-8		13.1	13.1	13.1	19.7
RTU1		25.5	25.5	25.5	32.2
RTU2		25.3	25.3	25.3	32.0
RTU3		15.1	15.1	15.1	21.7
RTU4		29.7	29.7	29.7	36.3
RTU5		31.9	31.9	31.9	38.6
RTU6		32.7	32.7	32.7	39.4
RTU7		32.3	32.3	32.3	38.9
RTU8		33.0	33.0	33.0	39.7

Contribution Levels of the Receivers

Source name		Level Day	Evening	Night	Lden
			dB(A)		
RTU9		34.1	34.1	34.1	40.7
RTU10		34.9	34.9	34.9	41.5
RTU11		34.3	34.3	34.3	40.9
Truck loading docks		37.1	37.1	37.1	43.8
Truck path		37.9	37.9	37.9	44.6
Van parking		40.8	39.5	-	39.8
Van staging		38.6	-	-	35.5
Mountain View Venture	GF	51.1	50.2	49.4	56.3
Associate Parking		32.7	32.0	31.4	38.3
EF-1		2.5	2.5	2.5	9.1
EF-2		10.6	10.6	10.6	17.2
EF-3		7.2	7.2	7.2	13.9
EF-4		6.6	6.6	6.6	13.3
EF-5		7.0	7.0	7.0	13.7
EF-6		19.2	19.2	19.2	25.9
EF-7		16.4	16.4	16.4	23.0
EF-8		14.2	14.2	14.2	20.9
RTU1		30.2	30.2	30.2	36.9
RTU2		30.4	30.4	30.4	37.1
RTU3		20.7	20.7	20.7	27.4
RTU4		36.2	36.2	36.2	42.9
RTU5		38.2	38.2	38.2	44.8
RTU6		40.9	40.9	40.9	47.6
RTU7		36.6	36.6	36.6	43.3
RTU8		38.1	38.1	38.1	44.8
RTU9		37.0	37.0	37.0	43.7
RTU10		37.7	37.7	37.7	44.4
RTU11		36.4	36.4	36.4	43.1
Truck loading docks		35.7	35.7	35.7	42.4
Truck path		44.7	44.7	44.7	51.3
Van parking		43.8	42.5	-	42.8
Van staging		42.5	-	-	39.4
Mountain View Venture	1.Fl	51.6	50.9	50.3	57.2
Associate Parking		32.4	31.7	31.1	38.0
EF-1		2.9	2.9	2.9	9.5
EF-2		11.5	11.5	11.5	18.2
EF-3		7.9	7.9	7.9	14.6
EF-4		7.3	7.3	7.3	14.0
EF-5		7.5	7.5	7.5	14.2
EF-6		20.9	20.9	20.9	27.6
EF-7		17.6	17.6	17.6	24.3
EF-8		15.2	15.2	15.2	21.9
RTU1		30.7	30.7	30.7	37.4
RTU2		30.8	30.8	30.8	37.5
RTU3		21.2	21.2	21.2	27.9
RTU4		36.8	36.8	36.8	43.5
RTU5		39.7	39.7	39.7	46.4
RTU6		43.0	43.0	43.0	49.6
RTU7		37.6	37.6	37.6	44.3
RTU8		39.3	39.3	39.3	46.0
RTU9		38.0	38.0	38.0	44.7
RTU10		39.0	39.0	39.0	45.6
RTU11		37.4	37.4	37.4	44.0
Truck loading docks		39.4	39.4	39.4	46.1
Truck path		44.1	44.1	44.1	50.7
Van parking		43.6	42.4	-	42.6
Van staging		41.8	-	-	38.8

APPENDIX C – TNM Traffic Model

REPORT: **INPUT TRAFFIC FOR TNM VEHICLES (Lden)**

TNM VERSION: 3.0.7.60002 REPORT DATE: 27 April 2021

CALCULATED WITH: 3.0.7.60002 CALCULATION DATE: 4/27/2021 1:08:39 PM

CASE: Delivery Station - West Covina, CA Existing ORGANIZATION:

PATH: ANALYSIS BY: Cecile.Felsher

CALCULATION SEQUENCE NUMBER: TNM SERIAL NUMBER:

PROJECT/CONTRACT:

Roadway Name	Road Segment			Auto				Medium Truck				Heavy Truck				Bus				Motorcycle			
	Start Point		ADT	D	E	N	Speed	D	E	N	Speed	D	E	N	Speed	D	E	N	Speed	D	E	N	Speed
	Name	No.																					
			[Veh/24 hr]	[%]	[%]	[%]	[mph]	[%]	[%]	[%]	[mph]	[%]	[%]	[%]	[mph]	[%]	[%]	[%]	[mph]	[%]	[%]	[%]	[mph]
Westbound San Bernardino - N Lark Ellen Ave to N Vincent Ave	Point-0	0	8000	95	95	95	45	4	4	4	45	1	1	1	45	0	0	0	0	0	0	0	0
	Point-1	1	8000	95	95	95	45	4	4	4	45	1	1	1	45	0	0	0	0	0	0	0	0
	Point-3	2	8000	95	95	95	45	4	4	4	45	1	1	1	45	0	0	0	0	0	0	0	0
Eastbound San Bernardino - N Vincent Ave to N Lark Ellen Ave	Point-4	0	8000	95	95	95	45	4	4	4	45	1	1	1	45	0	0	0	0	0	0	0	0
	Point-5	1	8000	95	95	95	45	4	4	4	45	1	1	1	45	0	0	0	0	0	0	0	0
	Point-7	2	8000	95	95	95	45	4	4	4	45	1	1	1	45	0	0	0	0	0	0	0	0
Eastbound Badillo - N Vincent Ave to N Lark Ellen Ave	Point-12	0	9500	98	98	98	45	2	2	2	45	0	0	0	0	0	0	0	0	0	0	0	0
	Point-13	1	9500	98	98	98	45	2	2	2	45	0	0	0	0	0	0	0	0	0	0	0	0
Westbound Badillo - N Lark Ellen Ave to N Vincent Ave	Point-18	0	9500	98	98	98	45	2	2	2	45	0	0	0	0	0	0	0	0	0	0	0	0
	Point-19	1	9500	98	98	98	45	2	2	2	45	0	0	0	0	0	0	0	0	0	0	0	0

REPORT:	**RESULTS: SOUND-LEVEL DIAGNOSIS BY ROAD SEGMENT**		
TNM VERSION:	3.0.7.60002	REPORT DATE:	27 April 2021
CALCULATED WITH:	3.0.7.60002	CALCULATION DATE:	4/27/2021 1:08:39 PM
CASE:	Delivery Station - West Covina, CA Existing	ORGANIZATION:	
ANALYSIS BY:	Cecile.Felsher	PROJECT/CONTRACT:	
ATMOSPHERICS:	68°F, 50%	DEFAULT GROUND TYPE:	HardSoil

Selected Receivers		Total	Important Roadways	Important Segments		Partial
Name	No.	Lden	Name	Name	No.	Lden
		dBA				dBA
Receiver-1	1	65.6	Westbound San Bernardino - N Lark Ellen Ave to N Vincent Ave	Point-0	0	43.1
			Westbound San Bernardino - N Lark Ellen Ave to N Vincent Ave	Point-1	1	39.2
			Eastbound San Bernardino - N Vincent Ave to N Lark Ellen Ave	Point-4	0	43.1
			Eastbound San Bernardino - N Vincent Ave to N Lark Ellen Ave	Point-5	1	39.2
			Eastbound Badillo - N Vincent Ave to N Lark Ellen Ave	Point-12	0	43.1
			Westbound Badillo - N Lark Ellen Ave to N Vincent Ave	Point-18	0	43.1
Receiver-3	3	59.9	Westbound San Bernardino - N Lark Ellen Ave to N Vincent Ave	Point-0	0	52.1
			Westbound San Bernardino - N Lark Ellen Ave to N Vincent Ave	Point-1	1	50.1
			Eastbound San Bernardino - N Vincent Ave to N Lark Ellen Ave	Point-4	0	52.1
			Eastbound San Bernardino - N Vincent Ave to N Lark Ellen Ave	Point-5	1	50.1
			Eastbound Badillo - N Vincent Ave to N Lark Ellen Ave	Point-12	0	52.1
			Westbound Badillo - N Lark Ellen Ave to N Vincent Ave	Point-18	0	52.1
Receiver-6	6	66.8	Westbound San Bernardino - N Lark Ellen Ave to N Vincent Ave	Point-0	0	60.9
			Westbound San Bernardino - N Lark Ellen Ave to N Vincent Ave	Point-1	1	33.1
			Eastbound San Bernardino - N Vincent Ave to N Lark Ellen Ave	Point-4	0	60.9
			Eastbound San Bernardino - N Vincent Ave to N Lark Ellen Ave	Point-5	1	33.1
			Eastbound Badillo - N Vincent Ave to N Lark Ellen Ave	Point-12	0	60.9
			Westbound Badillo - N Lark Ellen Ave to N Vincent Ave	Point-18	0	60.9

REPORT: **INPUT TRAFFIC FOR TNM VEHICLES (Lden)**

TNM VERSION: 3.0.7.60002 REPORT DATE: 27 April 2021

CALCULATED WITH: 3.0.7.60002 CALCULATION DATE: 4/27/2021 10:44:23 PM

CASE: Delivery Station - Existing + Project ORGANIZATION:

PATH: ANALYSIS BY: Cecile.Felsher

CALCULATION SEQUENCE NUMBER: TNM SERIAL NUMBER:

PROJECT/CONTRACT:

Roadway Name	Road Segment			Auto				Medium Truck				Heavy Truck				Bus				Motorcycle			
	Start Point		ADT	D	E	N	Speed	D	E	N	Speed	D	E	N	Speed	D	E	N	Speed	D	E	N	Speed
	Name	No.																					
			[Veh/24 hr]	[%]	[%]	[%]	[mph]	[%]	[%]	[%]	[mph]	[%]	[%]	[%]	[mph]	[%]	[%]	[%]	[mph]	[%]	[%]	[%]	[mph]
Westbound San Bernardino - N Lark Ellen Ave to N Vincent Ave	Point-0	0	8386	95	95	94.5	45	4	3.6	3.7	45	1	1.4	1.8	45	0	0	0	0	0	0	0	0
	Point-1	1	8386	95	95	94.5	45	4	3.6	3.7	45	1	1.4	1.8	45	0	0	0	0	0	0	0	0
	Point-3	2	8386	95	95	94.5	45	4	3.6	3.7	45	1	1.4	1.8	45	0	0	0	0	0	0	0	0
Eastbound San Bernardino - N Vincent Ave to N Lark Ellen Ave	Point-4	0	8386	95	95	94.5	45	4	3.6	3.7	45	1	1.4	1.8	45	0	0	0	0	0	0	0	0
	Point-5	1	8386	95	95	94.5	45	4	3.6	3.7	45	1	1.4	1.8	45	0	0	0	0	0	0	0	0
	Point-7	2	8386	95	95	94.5	45	4	3.6	3.7	45	1	1.4	1.8	45	0	0	0	0	0	0	0	0
Eastbound Badillo - N Vincent Ave to N Lark Ellen Ave	Point-12	0	9571	98	98.2	98	45	2	1.8	2	45	0	0	0	0	0	0	0	0	0	0	0	0
	Point-13	1	9571	98	98.2	98	45	2	1.8	2	45	0	0	0	0	0	0	0	0	0	0	0	0
Westbound Badillo - N Lark Ellen Ave to N Vincent Ave	Point-18	0	9571	98	98.2	98	45	2	1.8	2	45	0	0	0	0	0	0	0	0	0	0	0	0
	Point-19	1	9571	98	98.2	98	45	2	1.8	2	45	0	0	0	0	0	0	0	0	0	0	0	0

REPORT:	**RESULTS: SOUND-LEVEL DIAGNOSIS BY ROAD SEGMENT**		
TNM VERSION:	3.0.7.60002	REPORT DATE:	27 April 2021
CALCULATED WITH:	3.0.7.60002	CALCULATION DATE:	4/27/2021 10:44:23 PM
CASE:	Delivery Station - Existing + Project	ORGANIZATION:	
ANALYSIS BY:	Cecile.Felsher	PROJECT/CONTRACT:	
ATMOSPHERICS:	68°F, 50%	DEFAULT GROUND TYPE:	HardSoil

Selected Receivers		Total	Important Roadways	Important Segments		Partial
Name	No.	Lden	Name	Name	No.	Lden
		dBA				dBA
Receiver-1	1	66.0	Westbound San Bernardino - N Lark Ellen Ave to N Vincent Ave	Point-0	0	43.1
			Westbound San Bernardino - N Lark Ellen Ave to N Vincent Ave	Point-1	1	39.7
			Eastbound San Bernardino - N Vincent Ave to N Lark Ellen Ave	Point-4	0	43.1
			Eastbound San Bernardino - N Vincent Ave to N Lark Ellen Ave	Point-5	1	39.7
			Eastbound Badillo - N Vincent Ave to N Lark Ellen Ave	Point-12	0	43.1
			Westbound Badillo - N Lark Ellen Ave to N Vincent Ave	Point-18	0	43.1
Receiver-3	3	60.3	Westbound San Bernardino - N Lark Ellen Ave to N Vincent Ave	Point-0	0	52.1
			Westbound San Bernardino - N Lark Ellen Ave to N Vincent Ave	Point-1	1	50.5
			Eastbound San Bernardino - N Vincent Ave to N Lark Ellen Ave	Point-4	0	52.1
			Eastbound San Bernardino - N Vincent Ave to N Lark Ellen Ave	Point-5	1	50.5
			Eastbound Badillo - N Vincent Ave to N Lark Ellen Ave	Point-12	0	52.1
			Westbound Badillo - N Lark Ellen Ave to N Vincent Ave	Point-18	0	52.1
Receiver-6	6	66.8	Westbound San Bernardino - N Lark Ellen Ave to N Vincent Ave	Point-0	0	61.0
			Westbound San Bernardino - N Lark Ellen Ave to N Vincent Ave	Point-1	1	33.6
			Eastbound San Bernardino - N Vincent Ave to N Lark Ellen Ave	Point-4	0	61.0
			Eastbound San Bernardino - N Vincent Ave to N Lark Ellen Ave	Point-5	1	33.6
			Eastbound Badillo - N Vincent Ave to N Lark Ellen Ave	Point-12	0	61.0
			Westbound Badillo - N Lark Ellen Ave to N Vincent Ave	Point-18	0	61.0

APPENDIX D – RCNM Construction Model

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/28/2021
Case Description:

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
1431 Cutler Way	Residential	61.9	56.7	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compactor (ground)	No	20		83.2	500	0
Grader	No	40	85		500	0
Paver	No	50		77.2	500	0
Backhoe	No	40		77.6	500	0
Excavator	No	40		80.7	500	0
Front End Loader	No	40		79.1	500	0

Equipment	Results Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Noise Limit Exceedance (dBA) Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Compactor (ground)	63.2	56.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	65	61	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	57.2	54.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	57.6	53.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	60.7	56.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	59.1	55.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	65	64.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
1350 E San Bernardino Road	Residential	55.4	51.7	50

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compactor (ground)	No	20		83.2	220	0
Grader	No	40	85		220	0
Paver	No	50		77.2	220	0
Backhoe	No	40		77.6	220	0

Excavator	No	40	80.7	220	0
Front End Loader	No	40	79.1	220	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compactor (ground)	70.4	63.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	72.1	68.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	64.4	61.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	64.7	60.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	67.8	63.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	66.2	62.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	72.1	71.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
1209 E Elgenia Avenue	Residential	67.2	56.7	55

Equipment

	Impact		Spec Lmax	Actual Lmax	Receptor Distance	Estimated Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Compactor (ground)	No	20		83.2	350	0
Grader	No	40	85		350	0
Paver	No	50		77.2	350	0
Backhoe	No	40		77.6	350	0
Excavator	No	40		80.7	350	0
Front End Loader	No	40		79.1	350	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compactor (ground)	66.3	59.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	68.1	64.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	60.3	57.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	60.7	56.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	63.8	59.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	62.2	58.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	68.1	67.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

APPENDIX E – Trip Generation Count

DAX9 in West Covina, CA - Site Specific

	Associates			Trucks			DSP Drivers			DSP Vans			Flex			Total		
Time	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
00:00	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1
00:30	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
01:00	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1
01:30	70	0	70	0	0	0	0	0	0	0	0	0	0	0	0	70	0	70
02:00	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
02:30	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
04:00	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1
04:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
05:30	19	0	19	0	1	1	0	0	0	0	0	0	0	0	0	19	1	20
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
07:00	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
08:30	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1
09:00	0	0	0	0	0	0	11	0	11	0	0	0	0	0	0	11	0	11
09:30	0	0	0	1	0	1	43	0	43	0	0	0	0	0	0	44	0	44
10:00	0	0	0	0	1	1	52	0	52	0	36	36	0	0	0	52	37	89
10:30	0	0	0	0	0	0	21	0	21	0	72	72	0	0	0	21	72	93
11:00	0	0	0	0	0	0	0	0	0	0	34	34	0	0	0	0	34	34
11:30	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	70	70	0	0	0	0	0	0	0	0	0	0	0	0	0	70	70
13:00	19	0	19	0	0	0	0	0	0	0	0	0	0	0	0	19	0	19
13:30	17	0	17	0	0	0	0	0	0	0	0	0	0	0	0	17	0	17
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	19	19	0	0	0	0	0	0	0	0	0	0	0	0	0	19	19
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	39	0	39	39	0	39
16:30	0	0	0	1	0	1	0	0	0	0	0	0	6	18	24	7	18	25
17:00	0	0	0	0	1	1	0	0	0	0	0	0	0	27	27	0	28	28
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	0	17	17	1	0	1	0	0	0	0	0	0	0	0	0	1	17	18
18:30	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1
19:00	0	0	0	1	0	1	0	8	8	9	0	9	0	0	0	10	8	18
19:30	0	0	0	0	1	1	0	16	16	45	0	45	0	0	0	45	17	62
20:00	0	0	0	1	0	1	0	56	56	36	0	36	0	0	0	37	56	93
20:30	0	0	0	0	1	1	0	24	24	45	0	45	0	0	0	45	25	70
21:00	0	0	0	0	0	0	0	23	23	7	0	7	0	0	0	7	23	30
21:30	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
22:00	0	19	19	0	1	1	0	0	0	0	0	0	0	0	0	0	20	20
22:30	0	4	4	1	0	1	0	0	0	0	0	0	0	0	0	1	4	5
23:00	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1
23:30	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
Total	**129**	**129**	**258**	**14**	**14**	**28**	**127**	**127**	**254**	**142**	**142**	**284**	**45**	**45**	**90**	**457**	**457**	**914**

1st Shift:	2:00 AM	12:30 PM	78	Assoc.	27%
2nd Shift:	6:00 AM	2:30 PM	21	Assoc.	7%
3rd Shift:	1:30 PM	10:00 PM	21	Assoc.	7%
PFSD Shift:	2:00 PM	6:00 PM	19	Assoc.	7%
RTS Shift:	12:00 PM	10:30 PM	4	Assoc.	1%
Drivers:	9:20 AM	9:10 PM	142	Drivers	50%

Inputs to Table

0.90 Trip Reduction Factor
Site Specific
FPH = 9000
Sort Zones = 3408
Loading Spots = 36
SPR = 249