Appendix I

Noise Study and Supplemental Memorandum

Kimley»Horn

NOISE STUDY

LADYFACE VISTA PROFESSIONAL CENTER

City of Agoura Hills, California

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Envicom Project # 2021-038-01

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TABLES

FIGURES

1.0 INTRODUCTION

1.1 Purpose of Study

The purpose of this study is to describe and evaluate the noise impacts of the Ladyface Vista Professional Center (Project), proposed by Martin Teitelbaum, Construction, Inc., in the context of the City of Agoura Hills (City) regulatory framework.

1.2 Project Summary

The proposed Project would develop five one-story office buildings, an associated surface parking lot, and retaining walls on an approximately 3.45-acre vacant site (Project site or subject property) located at 29541-29555 Canwood Street. **Figure 1, Project Location Map** shows the Project location. The Project site is associated with Assessor Parcel Number (APN 2053-001-008). The City has zoned the site Business Park-Office Retail in a Freeway Corridor Overlay District (BP-OR-FC) The proposed development would include five one-story office buildings with approximately 20,279 sf of floor area, and approximately 56,546 square feet of paving for 109 parking spaces and drive areas.

Surrounding and nearby uses include the Los Angeles County Fire Department Station No. 89 and multifamily residential properties to the west, medical offices and medical care facilities to the east, Canwood Road and the 101 Freeway to the south, and residential properties and undeveloped parcels to the north. The sensitive receptors closest to the Project site are 1) multifamily residences located approximately 280 feet to the west of the Project site boundary and Project's limits of disturbance (west of the Fire Station), and 2) single-family residences located approximately 160 feet to the north of the Project site boundary and approximately 320 feet to the north of the limits of disturbance.

Source: ESRI, World Street Map, 2021.

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Project Location Map

FEET 0 750 1,500

FIGURE 1

2.0 NOISE FUNDAMENTALS

The following introduces the fundamental definitions and concepts used to qualify and quantify noise and impacts used throughout this study.

In a basic sense, noise is unwanted sound as perceived by a receptor. Sound is energy transmitted in waves through a compressible medium such as air. There are a variety of parameters that describe the rates of oscillation of sound waves, the distance between successive troughs or crests, the speed of propagation, and the pressure level, or energy content, of a given sound wave. Sound pressure level is the most common descriptor used to describe the perceived “loudness” of an ambient sound level. The standard measurement unit of sound pressure is called a decibel (dB).

Given that sound pressure levels can vary in intensity by over one million times within the range of human hearing, a logarithmic scale similar to the Richter Scale used to measure seismicity is used to keep sound intensity numbers convenient and manageable. The ear is not equally sensitive to all sound frequencies within the entire spectrum, so sound pressure levels at maximum human sensitivity are factored more heavily into sound descriptions in a process called "A-weighting", written as dBA. Subsequent references to decibels in this discussion written as "dB" should be understood as A-weighted.

Variations in noise exposure over time are expressed in terms of a steady-state energy level equivalent to the energy content of the time period, called Leq. Because human receptors are more sensitive to unwanted noise intrusion during the evening and at night hours, California statute requires, for planning purposes, an additional dB increment be added to quiet time noise levels in a 24-hour noise descriptor: either the Day-Night Average Level (Ldn) or the Community Noise Equivalent Level (CNEL). The Ldn metric adds a penalty of 10 dB for the nighttime hours of 10:00 p.m. to 7:00 a.m., while CNEL adds both the 10 dB nighttime penalty and a penalty of 5 dB for the evening hours of 7:00 p.m. to 10:00 p.m. CNEL levels are less than 1 dB higher than Ldn levels and in practice, the metrics are sometimes used interchangeably.

3.0 REGULATORY SETTING

This chapter presents applicable policies from the City General Plan and noise ordinances that pertain to the evaluation and regulation of noise. Project compliance with regulatory requirements, as applicable, introduced in this chapter is a consideration for the impact analysis presented in Chapter 6.0.

City of Agoura Hills General Plan

The Community Safety Element of the City General Plan, which applies to the City as a whole, addresses noise mitigation regulations, goals and polices. The noise and land use compatibility guidelines from Table N-1 of the Community Safety Element are provided in **Table 3-1, Noise/Land Use Compatibility Matrix** and the City's interior and exterior noise standards from Table N-2 of the Community Safety Element are provided in **Table 3-2, Interior and Exterior Noise Standards**.

Table 3-1
Noise/Land Use Compatibility Matrix

Land Use Categories		Community Noise Equivalent Level (CNEL)						
Categories	Uses	<55	60	65	70	75	80>	
Residential	Single Family, Duplex, Multiple Family	A	A	B	B	C	D	D
Residential	Mobile Homes	A	A	B	C	C	D	D
Commercial Regional, District	Hotel, Motel, Transient Lodging	A	A	B	B	C	C	D
Commercial Regional, Village District, Special	Commercial Retail, Bank, Restaurant, Movie Theater	A	A	A	A	B	B	C
Commercial Industrial Institutional	Office Building, Research and Development, Professional Offices, City Office Building	A	A	A	B	B	C	D
Commercial Recreation **Institutional** Civic Center	Amphitheater, Concert Hall Auditorium, Meeting Hall	B	B	C	C	D	D	D
Commercial Recreation	Children's Amusement Park, Miniature Golf Course, Go-cart Track; Equestrian Center, Sports Club	A	A	A	B	B	D	D
Commercial General, Special **Industrial, Institutional**	Automobile, Service Station, Auto Dealership, Manufacturing, Warehousing, Wholesale, Utilities	A	A	A	A	B	B	B
Institutional General	Hospital, Church, Library, Schools' Classroom	A	A	B	C	C	D	D
Open Space	Parks	A	A	A	B	C	D	D
Open Space	Golf Course, Cemeteries, Nature Centers, Wildlife Habitat	A	A	A	A	B	C	C

SOURCE: Mestre Greve Associates, 1992 General Plan

Zone A: Clearly Compatible	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.
Zone B: Normally Compatible	New construction or development should be undertaken only after detailed analysis of the noise reduction requirements are made and needed noise insulation features in the design are determined. Conventional construction, with closed windows and fresh air supply systems or air conditioning, will normally suffice.
Zone C: Normally Incompatible	New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in the design.
Zone D: Clearly Incompatible	New construction or development should generally not be undertaken.

Source: City Agoura Hills General Plan, Chapter 5: Community Safety, Section G: Noise, Table N-1

Table 3-2
Interior and Exterior Noise Standards

Land Use Categories		CNEL	
Categories	Uses	Interior[a]	Exterior[b]
Residential	Single Family, Duplex, Multiple Family	45 [c]	55
	Mobile Home	45	55
Commercial	Hotel, Motel, Transient Lodging	45	—
	Commercial Retail, Bank, Restaurant	55	—
	Office Building, Research and Development, Professional Offices, City Office Building	50	—
	Amphitheater, Concert Hall, Auditorium, Meeting Hall	45	—
	Gymnasium (Multipurpose)	50	—
	Sports Club, Movie Theatres	55	—
Industrial	Manufacturing, Warehousing, Wholesale, Utilities	65	—
Institutional	Hospital, Schools' classroom	45	55
	Church, Library	45	55
Open Space	Parks	—	65

a. Includes bathrooms, toilets, closets, corridors
b. Limited to the following:
- Private yard of single family
- Multi-family private patio or balcony which is served by a means of exit from inside the dwelling
- Balconies 6 feet deep or less are exempt
- Mobile home park
- Park's picnic area
- School's playground

c. Noise level requirement with closed windows. Mechanical ventilating system or other means of natural ventilation shall be provided as of Chapter 12, Section 1205 of UBC.

Source: City Agoura Hills General Plan, Chapter 5: Community Safety, Section G: Noise, Table N-2

Municipal Code

Operational Noise

Agoura Hills Municipal Code Section 9656.2, Exterior Noise Standards establishes the noise standards for residential properties, which are shown in **Table 3-3, Municipal Code Residential Exterior Noise Standards**. The Municipal Code prohibits noise exceeding these standards on residential properties. In the event the alleged offensive noise consists entirely of impact noise, simple tone noise, speech, music, or any combination thereof, each of the above noise levels shall be reduced by 5 dB(A). If ambient noise levels exceed any of the noise limit categories, the applicable noise level is increased to reflect the ambient noise level.

Table 3-3
Municipal Code Residential Exterior Noise Standards

Time	Exterior Noise Standard (dB)				
	L_{25} 15 min/hr	$L_{16.7}$ 10 min/hr	$L_{8.3}$ 5 min/hr	$L_{1.7}$ 1 min/hr	L_{max} at no time
7 AM to 10 PM (Daytime)	55	60	65	70	75
10 PM to 7 AM (Nighttime)	50	55	60	65	70
Source: City of Agoura Hills, Agoura Hills Municipal Code, Section 9656.2, December 10, 2020. Accessed on February 22, 2021 at https://library.municode.com/ca/agoura_hills/codes/code_of_ordinances?nodeId= AGHIMUCO.					

Municipal Code Section 9656.3, Interior Noise Standards establishes the noise standards for residential properties, which are shown in **Table 3-4, Municipal Code Residential Interior Noise Standards**. The Municipal Code prohibits noise exceeding these standards on residential properties. If ambient noise levels exceed any of the first two noise limit categories, the applicable noise level is increased to reflect the ambient noise level. If ambient noise levels exceed the third noise limit categories, the maximum noise level is increased to reflect the maximum ambient noise level.

Table 3-4
Municipal Code Residential Interior Noise Standards

Time	Interior Noise Standard (dB)		
	$L_{8.3}$ 5 min/hr	$L_{1.7}$ 1 min/hr	L_{max} at no time
7 AM to 10 PM (Daytime)	45	50	55
10 PM to 7 AM (Nighttime)	45	50	55
Source: City of Agoura Hills, Agoura Hills Municipal Code Section 9656.3, December 10, 2020. Accessed on February 22, 2021 at https://library.municode.com/ca/agoura_hills/codes/code_of_ordinances?nodeId=AGHIMUCO.			

Municipal Code Section 9305, Performance standards which apply to commercial districts. Section 9302 states that BP-OR land uses are established as commercial districts. The applicable standards are:

> Section 9305(A)1: "All commercial activities shall not create any noise that would exceed an exterior noise level of sixty (60) dBA during the hours of 10:00 p.m. to 7:00 a.m. and sixty-five (65) dBA during the hours of 7:00 a.m. to 10:00 p.m."
>
> Section 9305(A)2: "Loading and unloading. No person shall cause the loading, unloading, opening, closing, or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects between the hours of 10:00 p.m. and 7:00 a.m., in a manner which would cause a noise disturbance to a residential area."

Construction Noise

Section 9656.4, Special Provisions of the Municipal Code excepts certain activities from the noise regulation of Municipal Code Section 9656. Section 9656.4(E) exempts construction, repair, remodeling or grading activity noise provided the activities do not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a legal holiday. Municipal Code Section 4100 prohibits construction from 7:00 p.m. and 7:00 a.m. and on Sundays or holidays.

4.0 EXISTING CONDITIONS

4.1 Ambient Noise Levels

Transportation systems are a primary source of urban noise. Management of noise from the most significant of these sources (aircraft, trains and freeways) is generally preempted by federal and state authority. The primary local authority is municipal regulation of land use (i.e., land use planning) and establishment and enforcement of noise ordinances. Management of noise emanating from freeways is generally within the authority of federal and state jurisdictions, namely, the Federal Highway Administration and California Department of Transportation (Caltrans).

Existing sources of noise in the vicinity of the Project site include traffic on the 101 Freeway, Canwood Avenue, and the fire station to the west. The City of Agoura Hills General Plan Noise Element provides roadway noise contours for an existing year scenario and a future year of 2035. According to the existing and future noise contours, most of the Project site is within the 70 dBA CNEL noise contour of the nearest major roadway, the 101 Freeway, while part of the site is outside the 70 dBA CNEL traffic noise contour and within the 65 dBA CNEL noise contour.

Project location ambient noise measurements at the Project site are provided in **Table 4-1, Ambient Noise Measurements**, and **Table 4-2, 24-hour Noise Levels,** and shown in **Figure 2, Noise Measurement Locations**.

Table 4-1
Ambient Noise Measurements

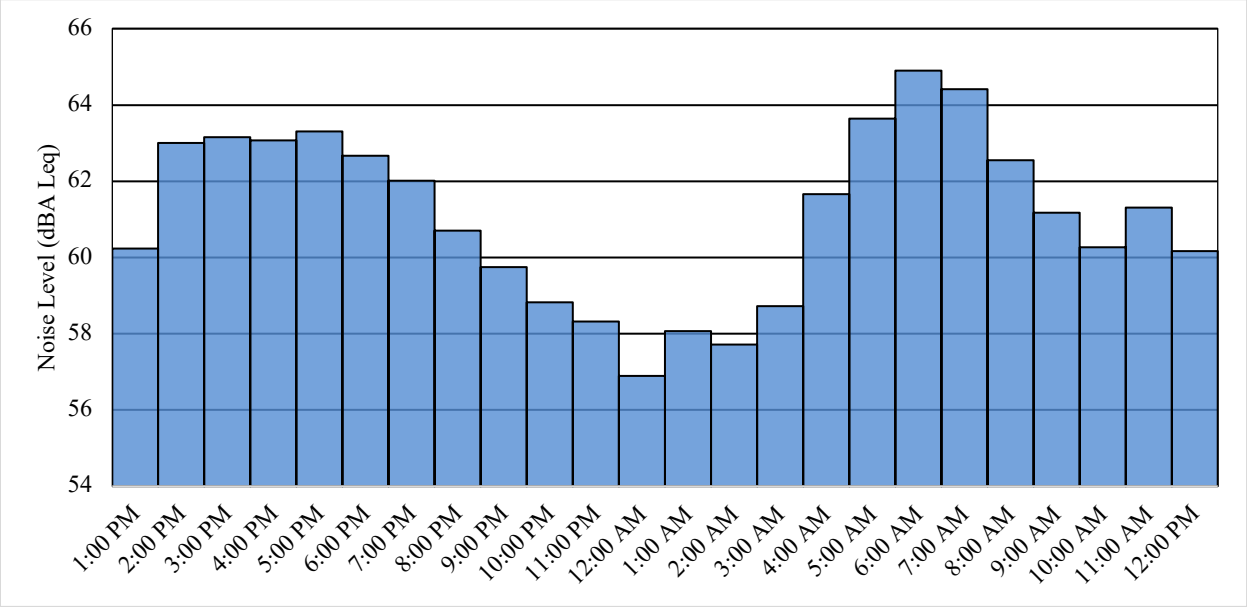
Number	Location	Time	dBA Leq[1]	dBA CNEL	Primary Noise Sources
ST-1	Project Site – Southern Boundary	8:54 a.m. – 9:09 a.m.	71.4	--	Traffic on the 101 Freeway and light traffic on Canwood Street
ST-2	Project Site – Northern Limits of Disturbance	9:27 a.m. – 9:42 a.m.	69.0	--	Traffic on the 101 Freeway, some Heating, Ventilation, and Cooling (HVAC) noise from fire station for a few minutes
LT-1	North of Project Site – near single family residences to the north	1:00 p.m. – 1:00 p.m.	56.9 – 64.9 [a]	67.7	Traffic on the 101 Freeway

Source: Envicom Corporation, field visit February 23, 2021. Measured using a Larson Davis LxT Sound Level Meter meeting the American National Standards Institute (ANSI) Type 1 standard.
[1] Leq is the average noise level equivalent to the energy content of the time period.
[a] Range of hourly averages from 24-hour measurement.

Envicom Corporation staff measured ambient noise levels in 15-minute intervals at two locations (short term, or ST), one location near the southern boundary and one location in the northern portion of the site. Staff obtained a 24-hour (long term, or LT) measurement at one location approximately 50 feet north of the Project site's northerly boundary.

As shown in Table 4-1, measured ambient noise levels on the Project site range from 69.0 dBA to 71.4 dBA Leq. As shown on Tables 4-1 and 4-2, measured ambient hourly average noise levels near the single-family residences to the north range from 60.2 dBA to 74.9 dBA and 24-hour average noise levels are 67.7 dBA CNEL. As noted earlier, the nearest sensitive receptors are the single-family residences to the north and the multifamily residences to the west. At the single-family residences to the north, existing daytime (7:00 a.m. to 10:00 p.m.) noise levels range from 59.7 dBA Leq to 64.4 dBA Leq based on measurements at LT-1. Noise levels at the multifamily residences to the south are 60.0 dBA Leq, based on measurements at ST-1, with calculated distance attenuation from the 101 Freeway centerline at the homes, and an assumed 10 dBA barrier insertion loss for the existing wall at the southern property line of the multifamily residential development.[1] These noise levels will be used as the existing daytime ambient noise levels for the purpose of this study.

Table 4-2
24-hour Noise Levels



[1] 71.4 dBA – 10 • log (265 ft /190 ft) – 10 dBA = 60 dBA

Aerial Source: Valtus Imagery Services: Hexagon Imagery Program (HxIP), 2018.

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Noise Measurement Locations

FEET 0 75 150

FIGURE 2

5.0 THRESHOLDS OF SIGNIFICANCE

This chapter presents thresholds of significance for noise from the State California Environmental Quality Act (CEQA) Guidelines approved by the California Office of Administrative Law on December 28, 2018. Project noise impacts are measured against these thresholds of significance. Local standards codified in the City's General Plan and municipal code refine these thresholds by establishing standards.

5.1 Thresholds of Significance

The following thresholds of significance for this Project analysis are based upon Section XII. Noise, in Appendix G of the State CEQA Guidelines:

Would the project result in:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- For a project located within the vicinity of a private airstrip or an airport land use plan, or where such plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

6.0 IMPACT ANALYSIS

6.1 Temporary or Permanent Increase in Ambient Noise Levels

Temporary increases in ambient noise levels would be due to construction equipment used while constructing the proposed Project. Permanent increases in ambient noise levels would be due to operation of Project components such as roof-mounted HVAC units, and vehicle trips generated on local roadways. The following impact analysis considers each of these types of noise impacts by topic.

Construction Noise

The Construction Noise Handbook prepared by the Federal Highway Administration includes a national database of construction equipment noise levels. The Federal Highway Administration uses these reference noise emission levels in the Roadway Construction Noise Model (RCNM). **Table 6-1, Construction Equipment Noise Levels,** identifies highest (Lmax) noise levels associated with quantity and type of construction equipment. The RCNM also provides an acoustical usage factor which estimates the fraction of time each piece of equipment is operating at full power during construction. The acoustical usage factor (U.F.), is a key input used to calculate sound levels averaged over time expressed as Leq. Table 6-1 adjusts the maximum noise levels (Lmax) using the U.F. published in the Federal Highway Administration Construction Noise Handbook. The sound level prediction equation is expressed as follows for the hourly average sound level (Leq) at distance (D) between the source and receiver.

$$Leq = Lmax - 20 \bullet \log (D/50) + 10 \bullet \log (U.F./100) - I.L.$$

Where:

Lmax is the published reference noise level at 50 feet
U.F. is the acoustical usage factor for full power operation per hour
I.L. is the insertion loss for intervening barriers, if applicable

Table 6-1 lists equipment types and quantities similar to those anticipated to be used for the Project. Table 6-1 is organized by equipment and describes the noise level for each individual piece of equipment at a 50-foot distance between the equipment and receptor as provided in the RCNM.

As shown below in Table 6-1, the construction equipment that could generate the highest noise level is a rubber-tired dozer which would generate a maximum noise level of 82 dBA Lmax at 50 ft and an average noise level of 78 dBA Leq at 50 ft. Construction proceeds in phases such as site preparation, grading, building construction, paving, and architectural coating. Therefore, at any particular phase of construction, contractors would use only the types of equipment needed as shown in Table 6-1, rather than using all the equipment throughout all phases. Furthermore, as decibels are logarithmic units sound levels cannot be added by ordinary arithmetic means. When the sound pressure level of two sources is equal, the resulting noise level is 3 dB greater than the noise level of one source.

Table 6-1
Construction Equipment Noise Levels

Phase	Quantity and Equipment Type [1]	Lmax at 50 feet (dBA) [2, 3]	Usage Factor (U.F.) [4]	Leq at 50 feet (dBA) [5]
Grading	Rubber-Tired Dozer	82	40	78
	Tractors/Loaders/Backhoe	79	40	75
Building Construction	Forklift	75	20	68
	Tractors/Backhoe	78	40	74
Paving	Paver	77	50	74
	Roller	80	20	73
	Tractor/Loader	79	40	75
	Paving Equipment	83	20	76

[1] Construction Equipment List from Martin Teitelbaum Construction Inc., email correspondence with Envicom Corporation, February 24, 2021.
[2] Noise levels are for individual equipment pieces. Each piece of equipment would operate at a distance from other equipment.
[3] Source: Federal Highway Administration, Construction Noise Handbook, 2006, Ch. 9, Construction Equipment Noise Levels and Ranges.
[4] Usage Factor (U.F.) is the portion of time equipment is operating at full power.

The worst-case noise levels at the closest receptor locations, which would occur when the loudest two pieces of equipment for a given phase operate at the edge of construction activity are shown below in **Table 6-2, Construction Activity Noise Levels**.

Table 6-2
Construction Activity Noise Levels

Receptor	Phase	Equipment	Distance from Construction Activity (feet) [1]	Individual Equipment Leq (dBA) [2]	Total Composite Leq (dBA) [4]
Multi-Family Residences to the West	Grading	Rubber-Tired Dozer	280	63	65
		Tractors/Loaders/Backhoe		60	
	Building Construction	Forklift	340	51	58
		Tractors/Backhoe		57	
	Paving	Tractor/Loader	280	60	64
		Paving Equipment		61	
Single Family Residences to the North	Grading	Rubber-Tired Dozer	320	62	64
		Tractors/Loaders/Backhoe		59	
	Building Construction	Forklift	430	49	56
		Tractors/Backhoe		55	
	Paving	Tractor/Loader	340	58	62
		Paving Equipment		59	

Source: Calculations from Envicom Corporation, May 2021.
[1] Distance from the center of construction activity for a given phase of construction to the property lines of the nearest residences.
[2] Noise levels for individual equipment at the residences after distance attenuation.
[3] Composite noise level for the two loudest pieces of equipment for a given phase.

Based on the noise levels in Table 6-2, during the grading phase of Project construction, which would be the loudest phase, the average noise levels would be up to 65 dBA at the nearest multifamily residences to the west and up to 64 dBA at the single-family residences to the north. The Agoura Hills Municipal Code does not specify a numerical limit on construction noise, but requires construction to adhere to the City's limitations for construction hours. Consistent with the City Code, the project does not propose construction between the hours of 7:00 p.m. and 7:00 a.m. or on Sundays or holidays. Therefore, construction noise impacts would be less than significant through regulatory compliance, and no mitigation measures would be required.

Operation

Heating, Ventilation, and Air Conditioning Units

During operations, the Project's rooftop HVAC units could be a source of noise affecting existing ambient noise levels in the immediate vicinity. The Project HVAC would be most active during the daytime as the project is an office building. This analysis assumes that the Project would include one commercial packaged rooftop HVAC unit for each of the five proposed office buildings. The sound power generated by a typical HVAC unit of this type is 79 dBA.[2] This sound power propagation half-spherically due to roof mounting is equivalent to a sound pressure level of 71 dBA Leq at 3.28 ft (1 meter) based on the following equation:

$$L = Lw - |10 \cdot \log (Q/4\pi r^2)|$$

L = sound pressure level
Lw = sound power
Q = directivity factor; for half-spherical propagation Q = 2
r = radius from source to fixed distance in meters

Distance attenuation for the proposed HVAC units was calculated using the following formula to calculate the noise level (L_2) in dB depending on distance (r_2) based on specification sheets from an HVAC unit manufacturer.

$$L_2 = L_1 - 20 \cdot \log (r_2 / r_1)$$

Where:

L_2 = *noise level at a given distance*
L_1 = *reference noise level*
r_1 = *reference distance*
r_2 = *given distance*

Given that decibels are expressed in logarithmic units, which cannot be added or subtracted arithmetically, the following formula converts decibels from logarithmic units to linear units for addition of the decibels and calculation of the increase in ambient noise.

$$L = 10 \cdot \log (\sum_{i=1}^{n} 10^{Li/10})$$

Where:

L = composite noise level
n = number of individual noise levels being summed
L_i = *individual noise level*

[2] Bryant Corporation, Product Data: 582k/559k Legacy Line™ Single Packaged Rooftop 3 to 6 Nominal Tons, 2019.

Because the exact location of HVAC units is not known, this analysis conservatively assumes that HVAC units could be placed near the edge of the roof of each proposed building. As shown below in **Table 6-3, HVAC Noise Levels**, the estimated operative noise level from the proposed HVAC units would be 37.0 dBA Leq at the closest multifamily residences to the west and 34.1 dBA Leq at the single-family residences to the north, after accounting for distance attenuation. These noise levels would not exceed the City's exterior daytime noise standard of 55 dBA Leq for time periods of 15 minutes or more in an hour. Typical warm weather residential construction would provide a noise reduction of 12 dBA with windows open, which would result in noise levels of 25.0 dBA Leq at the multifamily residences to the west and 22.1 dBA Leq, which would not exceed the City's interior noise standard of 45 dBA Leq for time periods of 15 minutes or more in an hour.[3] In addition, based on the formula for the addition of decibels, the addition of 37.0 dBA from the proposed HVAC units to the existing ambient Leq at the multifamily residential uses to the west would result in a negligible (less than 0.0 dBA) increase above the existing ambient noise level of 60 dBA. At the single-family residences to the north, the addition of 37.0 dBA from the proposed HVAC units to the existing ambient Leq at the single-family residential uses to the north would result in a negligible (less than 0.0 dBA) increase above the lowest daytime existing hourly ambient noise level of 59.7 dBA Leq. Therefore, noise from Project HVAC would be less than significant

Table 6-3
HVAC Noise Levels

Receptor	Reference HVAC Noise Level at 3.28 feet (dB) [1]	Distance to Receptor (ft)	Distance Attenuation (dB) [3]	Noise Level at Sensitive Receptor (dB Leq)	Total HVAC Noise Level at Sensitive Receptor (dB Leq)
Multi- Family Residences to the West	71	340	40.3	30.7	37.0
	71	340	40.3	30.7	
	71	360	40.8	30.2	
	71	400	41.7	29.3	
	71	410	41.9	29.1	
Single-Family Residences to the North	71	430	42.4	28.6	34.1
	71	500	43.7	27.3	
	71	520	44.0	27.0	
	71	580	45.0	26.0	
	71	600	45.2	25.8	

[1] Bryant Corporation, Product Data: 582k/559k Legacy Line™ Single Packaged Rooftop 3 to 6 Nominal Tons, 2019. The specified sound power (Lw) of 79 dB is equivalent to a sound pressure level of 71 dB Leq at 3.28 feet, assuming a half-spherical propagation of sound due to roof mounting.

Traffic Noise

Upon completion, Project-generated vehicle trips would cause an incremental increase in traffic noise levels on local streets throughout the Project area. Doubling the number of noise sources would produce a 3 dBA increase in the noise level. Therefore, a doubling of traffic volumes would generally be required to result in a 3 dBA increase in noise.

The Local Transportation Impact Assessment for the Project provided peak hour traffic volumes on local roadway intersection without and with the project for the existing year (2021), the future year (2023) cumulative conditions, and future year (2035) cumulative conditions.[4] For the purposes of this traffic

[3] U.S. Environmental Protection Agency, Protective Noise Levels: Condensed Version of EPA Levels Document, November, 1978.

[4] Linscott, Law, & Greenspan, Engineers, Transportation Impact Assessment: Canwood Office Campus Project, May 20, 2021.

noise analysis, the intersection turn volumes were tabulate to obtain roadway segment volumes. Evening (PM) peak hour volumes were selected for this analysis because the project trip generation would be greater than in the Morning (AM) Peak hour and because traffic volumes on roadways were generally higher at that time. The PM peak hour volumes were multiplied by a typical factor of 10 to estimate average daily trips (ADT). The traffic noise level increase was calculated by comparing the traffic volumes for "With Project" and "Without Project" scenarios using the following equation:

$$L = 10 \cdot \log (v_2 / v_1)$$

Where:

L = traffic noise level increase
v_1 = without Project traffic volume
v_2 = with Project traffic volume

Table 6-4, Existing Year Traffic Noise Increase 2021, shows the existing year (2021) Project-related traffic noise increase, **Table 6-5 Future Year Traffic Noise Increase 2023** shows the future year (2023) Project-related traffic noise increase, and **Table 6-6, Future Year Traffic Noise Increase 2035**, shows the Project-related and cumulative noise increases in the future year (2035).

Table 6-4
Existing Year Traffic Noise Increase 2021

Roadway Segment	Existing Without Project (2021) ADT	Existing (2021) With Project ADT	Existing Project-Related Noise Increase (dBA CNEL)
Reyes Adobe Road north of Canwood Street	14,200	14,350	0.0
Reyes Adobe Road south of Canwood Street	14,120	14,300	0.1
Reyes Adobe Road north of US-101 NB Ramps	15,870	16,050	0.0
Reyes Adobe Road south of US-101 NB Ramps	21,480	21,580	0.0
Reyes Adobe Road north of US-101 SB Ramps	14,020	14,120	0.0
Reyes Adobe Road south of US-101 SB Ramps	11,050	11,070	0.0
Canwood Street west of Reyes Adobe Road	5,110	5,110	0.0
Canwood Street east of Reyes Adobe Road	3,480	3,810	0.4
Canwood Street west of Kanan Road	4,330	4,740	0.4
Kanan Road north of Canwood Street	32,920	33,070	0.0
Kanan Road south of Canwood Street	19,610	19,830	0.0
Kanan Road north of Roadside Drive	30,150	30,370	0.0
Kanan Road south of Roadside Drive	14,920	14,950	0.0
Roadside Drive east of Kanan Road	6,370	6,370	0.0

Source: Linscott, Law, & Greenspan, Engineers, Transportation Impact Assessment: Canwood Office Campus Project, May 20, 2021.

Table 6-5
Future Year Traffic Noise Increase 2023

Roadway Segment	Future Year Without Project (2023) ADT	Future Year With Project (2023) ADT	Future Year Project-Related Noise Increase (dBA CNEL)
Reyes Adobe Road north of Canwood Street	15,330	15,480	0.0
Reyes Adobe Road south of Canwood Street	14,830	15,010	0.1
Reyes Adobe Road north of US-101 NB Ramps	17,040	17,220	0.0
Reyes Adobe Road south of US-101 NB Ramps	23,460	23,560	0.0
Reyes Adobe Road north of US-101 SB Ramps	15,510	15,610	0.0
Reyes Adobe Road south of US-101 SB Ramps	12,310	12,330	0.0
Canwood Street west of Reyes Adobe Road	5,210	5,210	0.0
Canwood Street east of Reyes Adobe Road	3,640	3,970	0.4
Canwood Street west of Kanan Road	4,530	4,940	0.4
Kanan Road north of Canwood Street	35,120	35,270	0.0
Kanan Road south of Canwood Street	23,210	23,430	0.0
Kanan Road north of Roadside Drive	36,010	36,230	0.0
Kanan Road south of Roadside Drive	19,230	19,260	0.0
Roadside Drive east of Kanan Road	6,900	6,900	0.0

Source: Linscott, Law, & Greenspan, Engineers, Transportation Impact Assessment: Canwood Office Campus Project, May 20, 2021.

Table 6-6
Future Year Traffic Noise Increase 2035

Roadway Segment	Future Year Without Project (2035) ADT	Future Year With Project (2035) ADT	Future Year Project-Related Noise Increase (dBA CNEL)	Cumulative Noise Increase (dBA CNEL)
Reyes Adobe Road north of Canwood Street	15,540	15,690	0.0	0.4
Reyes Adobe Road south of Canwood Street	15,060	15,240	0.1	0.3
Reyes Adobe Road north of US-101 NB Ramps	17,290	17,470	0.0	0.4
Reyes Adobe Road south of US-101 NB Ramps	23,780	23,880	0.0	0.5
Reyes Adobe Road north of US-101 SB Ramps	15,720	15,820	0.0	0.5
Reyes Adobe Road south of US-101 SB Ramps	12,480	12,500	0.0	0.5
Canwood Street west of Reyes Adobe Road	5,290	5,290	0.0	0.2
Canwood Street east of Reyes Adobe Road	3,690	4,020	0.4	0.6
Canwood Street west of Kanan Road	4,600	5,010	0.4	0.6
Kanan Road north of Canwood Street	35,630	35,780	0.0	0.4
Kanan Road south of Canwood Street	23,500	23,720	0.0	0.8
Kanan Road north of Roadside Drive	36,460	36,680	0.0	0.9
Kanan Road south of Roadside Drive	19,450	19,480	0.0	1.2
Roadside Drive east of Kanan Road	6,980	6,980	0.0	0.4

Source: Linscott, Law, & Greenspan, Engineers, Transportation Impact Assessment: Canwood Office Campus Project, May 20, 2021.

As Tables 6-4 through 6-6 show, the Project would increase noise levels by 0.4 dBA on Canwood Street east of Reyes Adobe Road and by 0.1 dBA Reyes Adobe Road south of Canwood Street in the existing year, future year 2023, and future year 2035. The cumulative increase in traffic noise levels (future year 2035 With Project compared to existing Without Project) would be 1.2 dBA on Kanan Road south of Roadside Drive and the cumulative noise increase on other local roadways would be 0.9 dBA or less, as Table 6-6 shows. Noise level increases below 3 dBA would not be readily perceptible to the human ear in an outdoor environment and noise level increases below 1 dBA would not be perceptible even in a controlled laboratory environment. Therefore, these project-related noise increases would not be perceptible. In addition, traffic noise on the majority of Canwood Street and Roadside Drive would continue to be overshadowed by traffic noise on the 101 Freeway, which has a traffic volume of 160,000 ADT in the project vicinity.[5] Therefore, traffic-related permanent increases in ambient noise levels would be less than significant.

6.2 Airport Noise Impacts

A project located within two miles of a public airport or public use airport may result in a significant impact if a project would expose people residing or working in the project area to excessive noise levels. The nearest airport to the Project site is Camarillo Airport, located approximately 18 miles to the west. Therefore, the Project would not result in the exposure of residents or those working in the Project area to excessive noise levels from a private airstrip or public airport.

[5] California Department of Transportation, Traffic Census Program, Traffic Volumes Annual Average Daily Traffic, 2019. Accessed on May 21, 2021 at https://dot.ca.gov/programs/traffic-operations/census.

7.0 CONCLUSIONS

Construction noise impacts would be less than significant through regulatory compliance and no mitigation measures would be required. The following construction noise requirements from the Agoura Hills Municipal Code would be applicable to the proposed Project:

- In compliance with the Agoura Hills Municipal Code Section 4100, construction of the proposed Project (including grading) would be restricted to between the hours 7:00 a.m. and 7:00 p.m. on weekdays or Saturday, excluding holidays.

Operational noise impacts would be less than significant and no measures to reduce operational noise are required.

8.0 REFERENCES

Bryant Corporation, Product Data: 582k/559k Legacy Line™ Single Packaged Rooftop 3 to 6 Nominal Tons, 2019.

California Department of Transportation, Traffic Census Program, Traffic Volumes Annual Average Daily Traffic, 2019. Accessed on May 21, 2021 at https://dot.ca.gov/programs/traffic-operations/census.

City of Agoura Hills, City of Agoura Hills General Plan, Chapter 5: Community Safety, Section G: Noise, March 2010.

City of Agoura Hills, Agoura Hills Municipal Code, December 10, 2020. Accessed on February 22, 2021 at https://library.municode.com/ca/agoura_hills/codes/code_of_ordinances?nodeId= AGHIMUCO.

City of Agoura Hills, Agoura Hills Municipal Code, Section 9656.2, December 10, 2020. Accessed on February 22, 2021 at https://library.municode.com/ca/agoura_hills/codes/code_of_ordinances? nodeId=AGHIMUCO.

City of Agoura Hills, Agoura Hills Municipal Code, Section 9656.3, December 10, 2020. Accessed on February 22, 2021 at https://library.municode.com/ca/agoura_hills/codes/code_of_ordinances? nodeId=AGHIMUCO.

Linscott, Law, & Greenspan, Engineers, Transportation Impact Assessment: Canwood Office Campus Project, May 20, 2021.

U.S. Environmental Protection Agency, Protective Noise Levels: Condensed Version of EPA Levels Document, November, 1978.

MEMORANDUM

Date: August 16, 2022

To: Ladyface Vista, LP

From: Envicom Corporation, CEQA Environmental Consultants

Subj: Ladyface Vista Professional Center: Evaluation of Operational Noise from Potential Future Emergency Generators

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This evaluation was prepared to augment the Noise Study[1] for the Ladyface Vista Professional Center ("project") in the City of Agoura Hills to address operational noise from the project's potential future installation of up to five emergency generators. The project proposes concrete pads at the northwest and northeast corners of the project parking lot in which two and three emergency generators could be installed, respectively, if needed by tenants to support medical office uses in the event of a power failure. One generator would generate a noise level of 70.2 decibels (dB) at 7 meters (approximately 23 feet) based on specifications for the generator model and enclosure.[2] The Agoura Hills Municipal Code, Section 9.656.4(D), exempts "any mechanical device, apparatus or equipment used, related to or connected with any emergency machinery, vehicle or work" from the City's noise limits set forth in the preceding subsections of Section 9.656.[3]

The noise measurements from the project noise study show that existing ambient noise levels at the residences to the north range from 59.7 dB average equivalent noise level (Leq) to 64.4 dB Leq during daytime (7:00 a.m. to 10:00 p.m.) and 56.0 Leq to 64.9 dB Leq at nighttime (10:00 p.m. to 7:00 a.m.), based on the long-term measurement location (LT)-1.[4] This location is representative of the nearest residences to the north, which are single-family residences on Promontory Place. The closest residences to a potential emergency generator location are the third-row of multifamily residences on Strawberry Hill Drive. Measured ambient noise levels are 69.0 dB Leq at short-term measurement location (ST)-2, which is a similar distance from the 101 Freeway (the dominant noise source in the vicinity) as these residences, and it is assumed that there is a 10 dB barrier insertion loss for the existing wall at the southern property line of the multifamily residential development, resulting in a daytime ambient noise level of 59.0 dB Leq at

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1 Envicom Corporation, Noise Study: Ladyface Vista Professional Center, May 2021.

2 Cummins, Specification Sheet: Spark-ignited Generator Set, 2018. Specifications for C70 N6 with F217-2 sound attenuated level 2 enclosure, aluminum.

3 City of Agoura Hills, Municipal Code, Division 6: Noise Regulations. Available at: https://library.municode.com/ca/agoura_hills/codes/code_of_ordinances?nodeId=ARTIXZO_CH6REPR_PT2SPRE_DIV6NORE.

4 Envicom Corporation, Noise Study: Ladyface Vista Professional Center, May 2021, pages 7-8.

the nearest multifamily residences to the west. The lowest hourly nighttime ambient noise level at the residence to the west was estimated to be 54.7 dB Leq based on the measurement at ST-2 (69.0 dB Leq) minus the difference between the corresponding 9:00 a.m. hour and the lowest hourly nighttime level measured at LT-1 (61.2 dB Leq and 56.9 dB Leq) as well as a 10 dBA barrier insertion loss assumed for the existing wall at the southern property line of the multifamily residential development (i.e., 69.0 dB Leq - [61.2 dB Leq -56.9 dB Leq] - 10 dB = 54.7 dB Leq).

As a worst-case scenario, this analysis assumes that all five potential emergency generators would be installed and could operate at once. **Table 1, Emergency Generator Noise Levels**, shows the resulting noise levels at the nearest sensitive receptors. It should be noted that these levels are even below 55 dB Leq, the Municipal Code daytime noise standard for noises lasting more than 15 minutes in an hour and the nighttime noise standard for noises lasting between 10 and 15 minutes in an hour, from which they are exempted. Additionally, it should be noted that noise levels at the single-family residences to the north may be further reduced below those in Table 1 by the project retaining wall and intervening topography.

Table 1
Emergency Generator Noise Levels

Receptor	Reference Noise Level at 23 feet (dB) [1]	Distance to Receptor (ft)	Distance Attenuation (dB)	Noise Level at Sensitive Receptor (dB Leq) [2]	Total Noise Level at Sensitive Receptor (dB Leq) [3]
Single-Family Residences to the North	70.2	380	24.4	45.8	52.3
	70.2	390	24.6	45.6	
	70.2	400	24.8	45.4	
	70.2	420	25.2	45.0	
	70.2	440	25.6	44.6	
Multifamily Residences to the West	70.2	360	23.9	46.3	51.3
	70.2	370	24.1	46.1	
	70.2	570	27.9	42.3	
	70.2	570	27.9	42.3	
	70.2	570	27.9	42.3	

[1] Cummins, Specification Sheet: Spark-ignited Generator Set, 2018. Specifications for C70 N6 with F217-2 sound attenuated level 2 enclosure, aluminum.
[2] Noise levels from each individual emergency generator.
[3] Combined noise levels from all five emergency generators.

When the worst-case emergency generator noise levels from Table 1 are added to the existing ambient noise levels, the resulting noise levels are shown in **Table 2, Emergency Generator Noise Level Increase**.

Table 2
Emergency Generator Noise Level Increase

Receptor	Daytime (7:00 a.m. to 10:00 p.m.)			Nighttime (10:00 p.m. to 7:00 a.m.)		
	Existing Daytime Ambient Noise Level (dB Leq)	Noise Level with Emergency Generators (dB Leq)	Emergency Noise Increase (dB Leq)	Existing Nighttime Ambient Noise Level (dB Leq)	Noise Level with Emergency Generators (dB Leq)	Emergency Noise Increase (dB Leq)
Single-Family Residences to the North	59.7	60.4	0.7	56.9	58.2	1.3
Multifamily Residences to the West	59.0	59.7	0.7	54.7 [1]	56.3	1.6

[1] Nighttime noise level was based on the measurement at ST-2 minus the difference between the corresponding 9:00 a.m. hour and the lowest hourly nighttime level of LT-1. Also, an assumed 10 dBA barrier insertion loss for the existing wall at the southern property line of the multifamily residential development was subtracted. (i.e., 69.0 dB Leq - [61.2 dB Leq -56.9 dB Leq] - 10 dB = 54.7 dB Leq).

As shown on Table 2, the worst-case noise level increases associated with operation of the emergency generators would result in a daytime noise level increase of 0.7 dB at the nearest residences. Noise level increases of less than 1 dB are not perceptible to humans even in a controlled laboratory setting. Table 2 also shows that worst-case noise level increases associated with operation of the emergency generator would result in a nighttime noise level increase of 1.3 dB at the residences to the north and 1.6 dB at the residences to the west. Noise level increases of 3 dB would be less than perceptible in an outdoor environment. In addition, these noise levels would only occur on an emergency basis during power outages or during periodic testing in support of emergency operation and would not typically affect overall average noise levels at sensitive receptors. All other residences would experience even lower noise levels because they are further away from the potential emergency generator locations. Therefore, noise impacts from the project's potential emergency generators would be less than significant.