AMG & Associates, LLC

Alamo Street Mixed Use Project

Noise Study

June 2018

rincon

Environmental Scientists Planners Engineers

NOISE STUDY

ALAMO STREET MIXED USE PROJECT

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Noise Study

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ALAMO STREET MIXED USE PROJECT
CITY OF SIMI VALLEY
NOISE STUDY

This report analyzes the potential noise impacts of the proposed Alamo Street Mixed Use Project in the City of Simi Valley. The report has been prepared by Rincon Consultants, Inc. under contract to AMG and Associates, LLC for use by the City of Simi Valley, in support of the environmental documentation being prepared pursuant to the California Environmental Quality Act (CEQA). The purpose of this study is to evaluate the project's potential temporary noise impacts associated with construction activity, long-term noise impacts associated with project operation, including roadway noise from vehicle trips generated by the project, and the potential exposure of future site residents to traffic noise from Alamo Street and Tapo Street. The analyses herein rely partially on data from a Traffic Impact Report prepared by LSA Associates, Inc. (2018).

PROJECT DESCRIPTION

The project site measures approximately 6.88 acres and is located on the northeast corner of Alamo Street and Tapo Street, south of the Elwood shopping center in the City of Simi Valley. The project site includes two parcels, a 1.01 acre commercial parcel and a 5.87 acre residential parcel. The project site is currently occupied by an approximately 78,000 square foot retail center.

The project involves the demolition of all of the existing buildings, except for one 8,000 square foot commercial building. The project involves the construction of three-stories of residential units over one story of parking. The residential complex would be separated by 12 courtyards with a total of 278 residential units in 296,036 square feet of residential space with 60,519 square feet of common courtyard space and a 2,566 square foot clubhouse. In addition, the project would include 611 parking spaces for residential uses and 33 parking spaces for commercial uses.

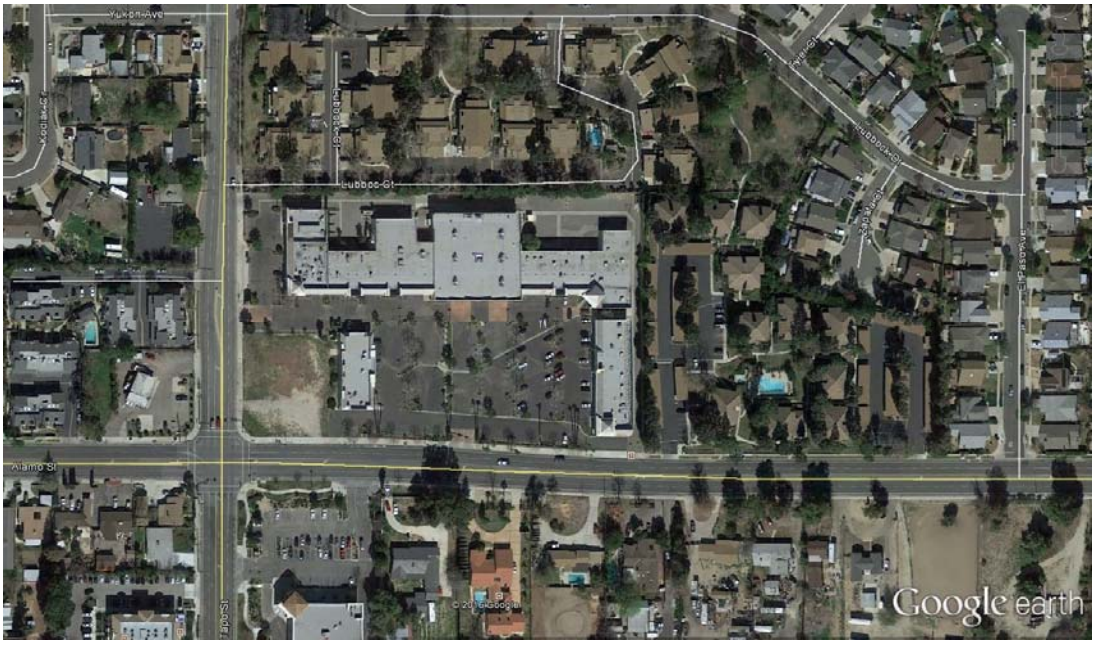

Figure 1. Project Site Location

SETTING

Overview of Sound Measurement

Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels to be consistent with that of human hearing response, which is most sensitive to frequencies around 4,000 Hertz (about the highest note on a piano) and less sensitive to low frequencies (below 100 Hertz).

Sound pressure level is measured on a logarithmic scale with the 0 dBA level based on the lowest detectable sound pressure level that people can perceive (an audible sound that is not zero sound pressure level). Based on the logarithmic scale, a doubling of sound energy is equivalent to an increase of 3 dBA, and a sound that is 10 dBA less than the ambient sound level has no effect on ambient noise. Because of the nature of the human ear, a sound must be about 10 dBA greater than the reference sound to be judged as twice as loud. In general, a 3 dBA change in community noise levels is noticeable, while 1-2 dBA changes generally are not perceived. Quiet suburban areas typically have noise levels in the range of 40-50 dBA, while arterial streets are in the 50-60+ dBA range. Normal conversational levels are in the 60-65 dBA range, and ambient noise levels greater than 65 dBA can interrupt conversations.

Noise levels typically attenuate (or drop off) at a rate of 6 dBA per doubling of distance from point sources (such as industrial machinery). Noise from non-point sources, such as roadways, typically attenuates at a rate of 4.5 dBA per doubling of distance from lightly traveled roads and 3 dBA per doubling of distance from heavily travelled roads. Noise levels may also be reduced by intervening structures. Generally, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm that breaks the

line-of-sight reduces noise levels by 5 to 10 dBA. The manner in which newer structures in California are constructed generally provides a reduction of exterior-to-interior noise levels of about 20-25 dBA with closed windows (Federal Highway Administration [FHWA], May 2006).

In addition to the instantaneous measurement of sound levels, the duration of sound is important since sounds that occur over a long period of time are more likely to be an annoyance or cause direct physical damage or environmental stress. One of the most frequently used noise metrics that considers both duration and sound power level is the equivalent noise level (Leq). The Leq is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period of time (essentially, the average noise level). Typically, Leq is summed over a one-hour period. For other time periods, the duration is shown in brackets; for example, a 30-minute Leq would be shown as Leq[30]. Lmax is the highest root mean squared (RMS) sound pressure level within the measuring period, and Lmin is the lowest RMS sound pressure level within the measuring period. While, L_{10} is the sound pressure level (measured in dBA) exceeded 10 percent of time within the measuring period.

The time period in which noise occurs is also important since noise that occurs at night tends to be more disturbing than that which occurs during the day. Community noise is usually measured using Day-Night Average Level (Ldn), which is the 24-hour average noise level with a 10-dBA penalty for noise occurring during nighttime (10 p.m. to 7 a.m.) hours, or Community Noise Equivalent Level (CNEL), which is the 24-hour average noise level with a 5 dBA penalty for noise occurring from 7 p.m. to 10 p.m. and a 10 dBA penalty for noise occurring from 10 p.m. to 7 a.m. Noise levels described by Ldn and CNEL typically do not differ by more than 1 dBA. In practice, CNEL and Ldn are often used interchangeably.

Sensitive Receptors

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. Noise sensitive land uses typically include residences, hospitals, schools, guest lodging, libraries, and parks. The predominant noise sensitive land uses in the area of the project site are residences, which surround the project site on all sides. The closest residences are within 30 feet to the east and 50 feet to the north of the project site boundary. Additional residences lie approximately 120 feet to the west across Tapo Street and 200 feet south across Alamo Street. Commercial buildings, which are not typically considered noise-sensitive, are located approximately 150 feet west and 300 feet south of the project site boundary. The project would include mixed residential and commercial uses. The proposed residential units would be new sensitive receptors on the site. Alamo Street (50 feet from roadway centerline to the nearest on site receptor), and Tapo Street (40 feet from roadway centerline to nearest on site receptor) are the noise sources closest to the proposed residential units.

Project Site Setting

The Alamo Mixed Use project site is located in Simi Valley, and is bordered by residential condominiums to the north and east, Alamo Street to the south, and Tapo Street to the west. The primary sources of noise in the project site vicinity are motor vehicles (e.g., automobiles, buses, trucks, and motorcycles) along Alamo Street and Tapo Street. Motor vehicle noise is of concern

because it is characterized by a high number of individual events, which often create a sustained noise level, and because of its proximity to noise sensitive uses. The project site is located on the north side of Alamo Street, approximately 1,700 feet north of State Route 118 (SR 118). The distance from SR 118 places the project site outside of the City's designated Freeway Combining Zone (Simi Valley 2012).

There are no substantial existing sources of noise on the project site. The site is currently developed with a one-story commercial shopping center with a Fresh and Easy supermarket, Pizza Hut, and Taqueria Jaliscos. The remainder of the site is developed with paved parking lots, landscaped areas, and a vacant area at the southwest corner of the site.

To determine existing noise levels on the project site, Rincon conducted two peak-hour weekday morning 15-minute noise measurements using an ANSI Type II integrating sound level meter on June 14, 2016. Additionally, Rincon collected 15-minute traffic counts along Tapo Street and Alamo Street during noise measurements. These noise measurements represent peak-hour traffic noise and, therefore, provide a conservative estimate of existing on-site sound levels at two locations on the project site, which are primarily due to roadway noise from Alamo Street and Tapo Street. Table 1 identifies the measured noise levels and traffic counts. Figure 2 shows the on-site noise measurement locations.

Table 1
Noise Monitoring Results

Measurement Number	Measurement Location	Primary Noise Source	Traffic Count	Sample Time	Leq[15] (dBA)
1	Western side of project site	Tapo Street (40 Feet[1])	Cars: 66 Medium Trucks: 2	7:32 A.M. Peak Hour	66.7
2	Southern side of project Site	Alamo Street (50 Feet[1])	Cars: 123 Medium Trucks: 1	8:00 A.M. Peak Hour	67.7

1: Measured to the center of the roadway.
Source: Field visit using ANSI Type II Integrating sound level meter, June 14, 2016.
Distances are from centerlines of Alamo Street and Tapo Street.
See Figure 2 for noise measurement locations.
See Appendix for noise monitoring data sheets

The City of Simi Valley has created a Freeway Combining District Overlay to identify portions of the City that are subject to freeway noise from SR 118. Noise levels at residential properties within the Freeway Combining District may not exceed 60 dBA for outdoor living environments and may not exceed 45 dBA for interior living areas. Additionally, when evaluating noise within the Freeway Combining District, readings must include representative values for peak traffic hours as well as sleeping hours. Because the project site is not located within the Freeway Combining District Overlay, it was not necessary to take measurements during typical sleeping hours.

As shown in Figure 2, the measurement locations above are located away from the intersection of Tapo Street and Alamo Street in order to measure pass-by traffic noise as opposed to stopping noise. Additionally, Rincon Consultants conducted all measurements along street sidewalks, with clear line of sight to the primary noise sources.

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Noise Measurement Locations

Figure 2

AMG & Associates, LLC

Regulatory Setting

Simi Valley General Plan Safety and Noise Element

The Safety and Noise Element of the City of Simi Valley General Plan identifies sources of noise and provides objectives and policies that are designed to include noise control in the planning process. Goals and policies aim to maintain compatible land uses with acceptable environmental noise levels to protect Simi Valley residents from excessive noise. Overall, the City's Safety and Noise Element describes the noise environment (including noise sources) in the City, addresses noise mitigation regulations, strategies, and programs, and addresses noise compatibility with different land uses within the City.

The Safety and Noise Element establishes noise standards for residential and commercial/ institutional land use classifications. The goal of the City's noise standards is to maintain identified ambient noise levels and to limit, mitigate, or eliminate intrusive noise that exceeds the ambient noise levels within a specified zone. Table 2 shows the adopted interior and exterior noise standards for different land uses within the City.

Table 2
Interior and Exterior Noise Standards

Land Use Categories		CNEL	
Categories	**Uses**	**Interior**	**Exterior**
Residential	Single Family, Duplex, Multi Family, Mobile Home	45	63
Commercial/Institutional	Hotel, Motel Transient Lodging Hospitals School Classrooms Church, Library	45 45 45	--

Source: Simi Valley General Plan Safety and Noise Element (2012)

City of Simi Valley Municipal Code

The City's noise ordinance is located in Title 5, Chapter 16 of the City of Simi Valley Municipal Code (SVMC). The noise ordinance sets forth hours of operation for certain uses standards for determining when noise is deemed to be a disturbance, and legal remedies for violations. Key provisions of the City's noise ordinance are discussed below.

Section 5-16.02(i) of the Municipal Code prohibits the erection, excavation, demolition, alteration, construction, or repair of any structure or building, outside the hours of 7:00 AM and 7:00 PM. Further, sections 5.16.02 (d) and (h), restrict the operation of noise generating equipment such as mechanical devices and appliances that generate loud or unusual noise to daytime hours. Noise generated by construction or equipment operation during established daytime hours of 7:00 AM to 7:00 PM is not considered a nuisance.

Section 9-28.080 of the SVMC identifies the project site as a Mixed Use (MU) overlay district. Further, Section 9-44.105 of the SVMC establishes noise standards for MU overlay districts as 63 dBA Ldn for outdoor living areas and 45 dBA Ldn in interior living areas. Per Section 9.44-105, to comply with these standards, all new mixed use projects or additions to existing projects

must meet the minimum Sound Transmission Class (STC) 50 rating set forth in the California Building Code between residential units in the same building and the minimum STC 60 rating between residential units and non-residential uses in the same building. Applicants for these projects must, under the direction of the Director of Environmental Services, prepare an acoustical analysis report (prepared by an acoustical engineer) describing the acoustical design features of the structure required to satisfy the exterior and interior noise standards. The report must include satisfactory evidence that the measures specified in the report have been, or will be, incorporated into the design of the project. Additionally, Section 9-28.080 of the SVMC restricts commercial use within a mixed-use development between 12 a.m. and 6 a.m. unless approved with a Conditional Use Permit.

IMPACT ANALYSIS

Methodology and Significance Thresholds

Construction noise estimates are based upon noise levels reported by the Federal Transit Administration (FTA), Office of Planning and Environment (FTA, May 2006), and the distance to nearby sensitive receptors. Reference noise levels from that document were then used to estimate noise levels at nearby sensitive receptors based on a standard noise attenuation rate of 6 dB per doubling of distance (line-of-sight method of sound attenuation for point sources of noise). Construction noise level estimates do not account for the presence of intervening structures or topography, which could reduce noise levels at receptor locations. Therefore, the noise levels presented herein represent a conservative, reasonable worst-case estimate of actual construction noise. As discussed above, the City of Simi Valley does not consider temporary construction noise to create a nuisance if it occurs between the hours of 7:00 AM and 7:00 PM.

The traffic noise analysis is based on truck and traffic volume data from the project trip generation analysis (LSA Associates, Inc. 2018).

As discussed in the Regulatory Setting, the Simi Valley General Plan establishes noise standards for residential, commercial, and institutional land uses. Residential standards are 45 dBA CNEL or Ldn for interior noise and 63 dBA CNEL or Ldn for exterior noise. Commercial and Institutional standards are 45 dBA CNEL or Ldn for interior noise.

Temporary Construction Noise

Table 3 shows typical peak noise levels associated with various types of heavy construction equipment expected during each construction phase. Noise levels are based on the FHWA Highway Construction Noise Handbook (2006). Peak noise levels associated with the use of individual pieces of heavy equipment can range from about 70 to 89 dBA at 50 feet from the source, depending upon the types of equipment in operation at any given time and phase of construction (FHWA, 2006).

Table 3
Typical Noise Levels Generated by Construction Equipment

Equipment	Type	Typical Lmax (dBA) 50 Feet from the Source
Air Compressor	Stationary	81
Augur Drill Rig	Stationary	84
Backhoe	Mobile	80
Compactor (ground)	Mobile	83
Concrete Mixer	Stationary	85
Dozer	Mobile	82
Dump Truck	Mobile	76
Excavator	Mobile	81
Flat Bed Truck	Mobile	74
Front End Loader	Mobile	79
Generator	Stationary	81
Grader	Mobile	83
Jack Hammer	Mobile	88
Paver	Mobile	89
Pickup Truck	Mobile	75
Pneumatic Tools	Stationary	85
Roller	Mobile	80
Saw	Stationary	70
Scraper	Mobile	89
Truck	Mobile	88
Warning Horn	Stationary	83
Welder/Torch	Stationary	74

Source: FHWA, 2006.

Noise-sensitive uses near the project site include residential units located to the north, east, south and west. These sensitive land uses may experience a temporary increase in noise during construction activities on the project site. Table 4 shows the maximum expected noise levels at a variety of distances from construction activities, including the specific distances to nearby sensitive receptors described above (30 feet, 50 feet, and 120 feet). Noise levels are based on a standard noise attenuation rate of 6 dBA per doubling of distance from the highest-volume individual pieces of equipment shown in Table 3.

Table 4
Construction Noise Levels at Various Distances from Project Construction

Distance from Construction	Peak Noise Level from Mobile Construction Equipment at Receptor (dBA)	Peak Noise Level from Stationary Construction Equipment at Receptor (dBA)
30 feet	93	89
50 feet	89	85
100 feet	83	79
120 feet	81	77
150 feet	80	76
200 feet	77	73
250 feet	75	71
600 feet	68	65
700 feet	66	62
1,000 feet	63	59

As shown in Table 4, peak construction noise levels from the highest-volume individual pieces of equipment could be up to 93 dBA Lmax at sensitive receptors located 30 feet east of the project site. However, as discussed above, per the SVMC noise generated by construction activities is not considered a nuisance as long as activities take place between the hours of 7:00 AM and 7:00 PM. Therefore, with adherence to allowed construction hours per the SVMC Section 5-16.02, impacts associated with construction activities would be less than significant.

Operational Noise

The project would introduce new residential and commercial land uses on the project site. Existing sensitive uses near the project site and proposed new residences on-site may periodically be subject to noise associated with operation of these commercial land uses, including heating, ventilated, and air conditioning (HVAC) equipment.

HVAC Equipment

Noise levels from commercial ventilation and air conditioning equipment can reach 100 dBA Lmax at a distance of three feet (USEPA, 1971). Based on the project plans, the proposed commercial uses would be located at the northwest portion of the site. HVAC equipment on the roof of the commercial uses at the northwest portion of the site would be located approximately 70 feet to the west of the nearest new residences on the project site and 100 feet from the nearest existing residence to the north of the project site. Based on an attenuation rate of 6 dBA per doubling of distance, this would result in an external noise level of approximately 83 dBA Lmax at a distance of 70 feet and 80 dBA Lmax at 100 feet. This noise level would exceed the City's normally acceptable exterior living environment standard of 63 Ldn or CNEL at the location of the proposed new residential units.

Further, the project would be required to meet all applicable State and City standards for building construction. The manner in which newer dwelling units in California are constructed generally provides a reduction of exterior-to-interior noise levels of about 25 dBA with closed windows (FHWA, May 2006). Therefore, interior noise levels at the proposed residences nearest the commercial land use would be approximately 58 dBA. Noise from the commercial HVAC equipment would exceed both City thresholds for both exterior and interior living spaces and would be potentially significant.

The proposed development would include the installation of rooftop HVAC units for the proposed residences. HVAC units would be located approximately 30 feet from windows and exterior living areas of the proposed development (HVAC units are approximately 25 feet from the edge of buildings and at least 5 feet above windows and balconies). Assuming a standard attenuation of 6 dBA per doubling of distance, this would result in a noise level of approximately 80 dBA Lmax. However, the project would also include a three foot, six inch parapet around the perimeter of the roofline, which would block line of sight from the HVAC units to the exterior living spaces. The parapet would provide approximately 10 dBA of attenuation from HVAC noise, resulting in an exterior noise level of approximately 70 dBA Lmax at the windows and exterior living areas of the proposed development This noise level would exceed the City's normally acceptable exterior living environment standard of 63 Ldn or CNEL.

Off-Site Traffic Noise

The traffic noise analysis is based on the project trip generation analysis (LSA Associates, Inc. 2018). The project would result in changes to traffic on local roadways by eliminating vehicle trips associated with the current shopping center on the site and adding new vehicle trips associated with new mixed-use development. Based on the trip generation analysis, the project would result in 251 vehicles during the AM peak hour, 121 vehicles during the PM peak hour, and 1,944daily vehicle trips to and from the project site. This is an approximately 65% increase from the current 1,179 daily trips generated from the shopping center as described in the trip generation analysis (LSA Associates, Inc. 2018). Based on the logarithmic scale, a doubling of sound energy is equivalent to an increase of 3 dBA and in general a 3 dBA change in the ambient noise level is noticeable. The proposed project would increase ADT on are roadways by approximately 65%. Because this is less than a doubling of traffic, the increase in traffic noise would not be perceptible to nearby noise sensitive receptors. Therefore, impacts on long term traffic generated noise would be less than significant.

On-Site Traffic Noise

The proposed sensitive receptors on the project site would be exposed to noise from vehicular traffic along Alamo Street and Tapo Street. The buildings located along the both Alamo Street and Tapo Street would be five stories in height (four stories of residential above ground floor dedicated to commercial uses and parking). Outdoor use areas include south-facing courtyards along Alamo Street, as well as courtyards in the northern, eastern, and central portions of the project site. Courtyards are located above the ground floor parking structure. The project includes balconies on the southern and western portion of the project site that would face

Alamo Street and Tapo Street and would be exposed to exterior noise from traffic along these roadways.

Noise measurements taken by Rincon Consultants on June 14, 2016 (shown in Table 1) show an existing ambient noise level of 66.7 dBA Leq at the location of future residences along Tapo Street and 67.7 dBA Leq at the location of future residences along Alamo Street. These measurements represent noise levels during peak AM traffic hours. The relationship between peak hourly Leq values and associated Ldn values depends on the distribution of traffic over the entire day. There is no precise way to convert a peak hourly Leq to Ldn. However, in less heavily developed areas, such as suburban areas, the peak hourly Leq is often roughly equal to the daily Ldn. Therefore, noise levels at the location of future residences would range from approximately 67 dBA Ldn to 68 dBA Ldn. Section 9-44.105 of the SVMC establishes noise standards for MU overlay districts as 63 dBA Ldn for outdoor living areas. Therefore, anticipated exterior traffic noise would exceed City standards.

Section 9-44.105 of the SVMC identifies 45 dBA Ldn as the maximum noise level for interior residential living areas. The manner in which newer dwelling units in California are constructed generally provides a reduction of exterior-to-interior noise levels of about 25 dBA with closed windows (FHWA, May 2006). Therefore, on-site interior noise levels would not exceed 45 dBA Ldn, which is the City's interior residential noise standard.

Balconies facing Tapo Street and Alamo Street may be exposed to noise exceeding the City's noise standards for outdoor living areas, but residents would be able to avoid traffic noise inside where interior noise would be below SVMC standards. In addition, the ruling for *California Building Industry Association v. Bay Area Air Quality Management District* (CBIA v. BAAQMD) determined that under CEQA, except for a few specified and limited instances, noise impacts on residents of a proposed project are not required to be analyzed. Exterior noise impacts to future residences are not considered an impact under CEQA because it is an impact of the environment on the project. The City should make a decision if the noise exposure for project balconies would be considered a potential impact. If the City determines that noise exposure from area traffic on project balconies is an impact, recommended measures to reduce exterior noise are shown below.

Recommendations

The following measures are recommendations that would reduce exterior noise levels to below City standards.

> **Noise shielding for rooftop HVAC equipment**. As discussed above, operation of roof top HVAC equipment on the proposed commercial land uses at the northwest portion of the project site would result in an exceedance of City thresholds for exterior and interior noise levels at residences approximately 70 feet from the equipment, if equipment is not shielded. Assuming an attenuation rate of 6 dBA per doubling of distance, the project proponent must install noise shielding at the HVAC units to achieve a noise level of 65 dBA at 50 feet. This would result in exterior noise levels at the proposed residences of approximately 62 dBA Leq and interior noise levels 37 dBA Leq, which are within City standards. In addition, rooftop HVAC units on the proposed residential development

are located approximately 30 feet from windows and exterior living areas. Assuming an attenuation rate of 6 dBA per doubling of distance, the project proponent must install noise shielding on the HVAC units to achieve a noise level of 63 dBA Leq at 30 feet, which would be within the City standards. Typical noise shielding installed at HVAC equipment is able to achieve noise levels of 55 dBA Leq at 50 feet from the source (USEPA, 1971). Therefore, acceptable noise levels are reasonably attainable.

Outdoor Living Space Noise Attenuation. The applicant should implement sound attenuation features to reduce noise levels at all private outdoor livable spaces (i.e., balconies) on residence floors 1 through 4 fronting Tapo Street and Alamo Street. Such features may include berms made of sloping mounds of earth, walls and fences constructed of a variety of materials, thick plantings of trees and shrubs, or combinations of these materials, or the use of solid material for balcony construction such as double-paned or laminated glass, plexiglass, or wood. Acoustical analysis shall be performed prior to the issuance of an occupancy permit to demonstrate that noise levels at the exterior livable spaces do not exceed the City's 63 dBA Ldn standard.

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Appendix A

Noise Measurement Data

Ambient Noise Survey Data Sheet

Alamos Street Mixed Use Development Noise Study

Date: June 14, 2016

Taken By: Jamie Power

Measurement 1

Station: Tapo Street

Begin: 7:32 AM End: 7:49 AM

Wind: 0.0 mph Temperature: 65.4 deg F

Cloud Cover: Clear Sky

Primary Noise Source: Traffic along Tapo Street

Distance to source: 40 feet

Secondary Noise Source: Gardener across Tapo Street

Traffic Count: cars/light duty trucks: 66

medium duty trucks: 2

heavy duty trucks: 0

Leq: 66.7 L(10): 70.1

Lmin: 47.3 L(33):

Lmax: 84.5 L(50): 63.0

Peak: 102.7

Response: Fast

Weighting: A

Measurement 2

Station: Alamo Street

Begin: 7:58 AM End: 8:13 AM

Wind: 0.4 mph Temperature: 65.6 deg F

Cloud Cover: Clear Sky

Primary Noise Source: Traffic along Alamo Street

Distance to source: 40 feet

Secondary Noise Source: Bird Noise

Traffic Count: cars/light duty trucks: 123

medium duty trucks: 1

heavy duty trucks: 0

Leq: 67.7 L(10): 71.1

Lmin: 50.6 L(33):

Lmax: 83.4 L(50): 63.2

Peak: 94.0 L(90): 56.3

Response: Fast

Weighting: A

Measurement 1

- Freq Weight : A
- Time Weight : FAST
- Level Range : 40-100
- Max dB : 84.5 - 2009/04/01 00:04:46
- Level Range : 40-100
- SEL : 96.2
- Leq : 66.7
-

No.s	Date Time	(dB)				
1	2009/04/01 00:01:26	69.9	66.5	68.8	68.5	69.0
6	2009/04/01 00:01:36	68.7	65.2	63.9	62.3	63.2
11	2009/04/01 00:01:46	63.0	68.8	70.3	69.6	69.7
16	2009/04/01 00:01:56	70.8	67.5	74.6	72.0	67.3
21	2009/04/01 00:02:06	66.0	67.4	68.1	69.3	69.5
26	2009/04/01 00:02:16	68.5	68.6	67.9	68.6	65.3
31	2009/04/01 00:02:26	68.5	67.0	68.9	68.8	71.9
36	2009/04/01 00:02:36	75.8	73.5	69.1	66.1	62.5
41	2009/04/01 00:02:46	60.2	63.2	64.1	58.8	59.4
46	2009/04/01 00:02:56	61.9	63.6	60.4	58.1	58.4
51	2009/04/01 00:03:06	57.0	58.9	55.6	55.8	57.2
56	2009/04/01 00:03:16	60.7	66.0	65.3	62.4	58.5
61	2009/04/01 00:03:26	61.5	61.8	61.6	62.5	62.1
66	2009/04/01 00:03:36	59.1	62.3	61.3	59.3	59.6
71	2009/04/01 00:03:46	61.9	62.0	61.0	63.1	64.4
76	2009/04/01 00:03:56	66.3	67.3	61.3	54.9	61.8
81	2009/04/01 00:04:06	65.5	59.3	60.4	61.8	69.8
86	2009/04/01 00:04:16	79.3	69.8	63.3	60.4	64.0
91	2009/04/01 00:04:26	68.3	68.4	77.5	75.0	67.6
96	2009/04/01 00:04:36	69.2	70.1	67.4	68.6	83.5
101	2009/04/01 00:04:46	69.5	66.1	61.5	63.4	70.2
106	2009/04/01 00:04:56	70.7	62.2	61.7	59.7	60.5
111	2009/04/01 00:05:06	57.1	57.9	62.7	66.8	62.7
116	2009/04/01 00:05:16	55.7	52.8	52.6	53.8	55.5
121	2009/04/01 00:05:26	59.2	62.7	67.5	61.3	59.2
126	2009/04/01 00:05:36	63.3	65.2	58.1	54.6	52.8
131	2009/04/01 00:05:46	51.3	52.6	56.6	61.9	66.0
136	2009/04/01 00:05:56	68.9	65.4	63.5	65.2	55.5
141	2009/04/01 00:06:06	52.8	56.7	63.1	72.4	66.4
146	2009/04/01 00:06:16	62.1	58.8	56.6	53.7	51.5
151	2009/04/01 00:06:26	50.3	49.0	50.3	50.1	49.7
156	2009/04/01 00:06:36	50.5	50.0	50.7	53.4	55.5
161	2009/04/01 00:06:46	58.7	63.2	66.8	61.3	58.5
166	2009/04/01 00:06:56	58.1	61.5	65.3	63.6	63.7
171	2009/04/01 00:07:06	61.1	56.3	55.1	59.7	63.4
176	2009/04/01 00:07:16	66.0	60.6	57.6	61.3	64.4
181	2009/04/01 00:07:26	62.2	63.9	59.8	57.2	52.6
186	2009/04/01 00:07:36	51.7	55.4	57.8	62.8	66.1
191	2009/04/01 00:07:46	64.7	70.1	68.8	62.2	60.6
196	2009/04/01 00:07:56	55.6	54.1	54.5	57.3	59.6
201	2009/04/01 00:08:06	63.8	66.9	58.9	52.8	51.7
206	2009/04/01 00:08:16	51.3	52.8	56.5	65.3	67.8
211	2009/04/01 00:08:26	66.5	65.0	65.6	67.5	62.7
216	2009/04/01 00:08:36	62.9	62.6	63.6	65.1	64.3
221	2009/04/01 00:08:46	60.5	63.7	60.7	63.0	68.5
226	2009/04/01 00:08:56	73.2	66.3	63.0	59.3	62.0
231	2009/04/01 00:09:06	62.6	61.6	60.2	61.0	62.2
236	2009/04/01 00:09:16	66.9	66.2	65.0	70.6	75.2
241	2009/04/01 00:09:26	70.1	67.7	69.3	69.1	69.0
246	2009/04/01 00:09:36	70.5	67.8	68.0	62.8	64.5
251	2009/04/01 00:09:46	64.5	61.9	63.6	64.0	65.8
256	2009/04/01 00:09:56	66.1	69.6	65.5	64.3	65.7
261	2009/04/01 00:10:06	63.5	62.5	58.8	62.3	61.8
266	2009/04/01 00:10:16	62.9	57.3	53.4	52.8	54.0
271	2009/04/01 00:10:26	60.0	59.4	53.7	57.0	57.9
276	2009/04/01 00:10:36	61.4	60.9	64.6	66.3	72.1
281	2009/04/01 00:10:46	70.5	65.3	64.6	61.1	61.3
286	2009/04/01 00:10:56	63.8	68.8	70.9	73.6	68.9
291	2009/04/01 00:11:06	67.8	64.3	64.1	65.1	62.2
296	2009/04/01 00:11:16	60.8	61.6	61.5	66.3	67.5
301	2009/04/01 00:11:26	61.5	53.8	60.3	67.3	66.4
306	2009/04/01 00:11:36	59.6	59.0	64.4	73.2	65.0
311	2009/04/01 00:11:46	63.4	57.2	53.4	49.3	48.3
316	2009/04/01 00:11:56	48.6	52.9	54.5	57.0	52.9
321	2009/04/01 00:12:06	50.3	49.5	50.4	50.8	52.3
326	2009/04/01 00:12:16	55.6	61.9	68.9	76.0	68.9
331	2009/04/01 00:12:26	64.3	61.8	58.6	58.8	54.0
336	2009/04/01 00:12:36	55.2	52.5	60.0	60.6	62.8
341	2009/04/01 00:12:46	68.1	68.6	64.6	62.8	58.1
346	2009/04/01 00:12:56	60.3	58.1	59.5	60.0	51.4
351	2009/04/01 00:13:06	51.1	50.5	54.3	60.8	63.6
356	2009/04/01 00:13:16	64.2	67.4	63.4	62.1	60.2
361	2009/04/01 00:13:26	63.3	64.8	64.9	66.1	65.0
366	2009/04/01 00:13:36	63.4	60.0	60.5	62.0	64.1
371	2009/04/01 00:13:46	66.6	71.8	71.4	66.6	63.7
376	2009/04/01 00:13:56	64.9	61.1	60.6	64.9	66.5
381	2009/04/01 00:14:06	66.0	62.5	61.7	64.0	65.9
386	2009/04/01 00:14:16	58.9	60.5	64.1	62.8	63.9
391	2009/04/01 00:14:26	67.2	62.9	63.4	61.2	50.1
396	2009/04/01 00:14:36	50.7	50.5	54.4	63.4	66.9
401	2009/04/01 00:14:46	62.6	62.2	63.0	60.6	59.7
406	2009/04/01 00:14:56	66.5	68.0	68.7	68.2	69.9
411	2009/04/01 00:15:06	72.0	70.3	70.0	69.3	72.7
416	2009/04/01 00:15:16	70.6	71.2	70.7	71.8	73.7
421	2009/04/01 00:15:26	74.3	71.5	73.5	74.3	73.6

426	2009/04/01	00:15:36	73.0	72.4	73.3	73.1	74.7
431	2009/04/01	00:15:46	65.5	67.6	72.4	71.0	68.5
436	2009/04/01	00:15:56	64.6	56.5	62.0	62.7	62.8
441	2009/04/01	00:16:06	62.1	64.5	63.9	61.1	63.4
446	2009/04/01	00:16:16	62.2	63.1	61.3	61.7	61.9

Measurement 2

- Freq Weight : A
- Time Weight : FAST
- Level Range : 40-100
- Max dB : 83.4 - 2009/04/01 00:39:24
- Level Range : 40-100
- SEL : 97.2
- Leq : 67.7
-

No.s	Date Time	(dB)				
1	2009/04/01 00:27:28	59.4	64.5	69.9	64.0	60.3
6	2009/04/01 00:27:38	58.8	66.0	73.2	62.7	61.3
11	2009/04/01 00:27:48	67.7	72.4	71.7	72.5	66.2
16	2009/04/01 00:27:58	62.4	60.6	59.0	58.8	59.5
21	2009/04/01 00:28:08	59.1	59.4	64.8	64.3	65.5
26	2009/04/01 00:28:18	62.4	59.3	62.6	72.6	64.1
31	2009/04/01 00:28:28	62.7	67.7	72.2	63.2	62.9
36	2009/04/01 00:28:38	61.7	62.5	67.1	63.1	63.0
41	2009/04/01 00:28:48	66.5	62.7	63.2	68.7	78.2
46	2009/04/01 00:28:58	75.3	65.4	60.7	57.8	59.6
51	2009/04/01 00:29:08	61.8	71.4	64.9	62.5	64.0
56	2009/04/01 00:29:18	76.2	69.7	63.0	64.0	72.4
61	2009/04/01 00:29:28	67.3	75.0	77.0	74.6	67.7
66	2009/04/01 00:29:38	64.1	63.4	67.7	75.0	64.6
71	2009/04/01 00:29:48	67.0	66.2	66.1	62.0	61.1
76	2009/04/01 00:29:58	58.2	59.9	59.1	58.6	57.8
81	2009/04/01 00:30:08	56.9	57.7	56.8	55.4	54.5
86	2009/04/01 00:30:18	54.9	58.0	64.3	68.3	61.8
91	2009/04/01 00:30:28	68.4	66.1	59.6	58.5	64.9
96	2009/04/01 00:30:38	72.2	67.3	77.9	65.5	67.9
101	2009/04/01 00:30:48	76.5	66.4	69.1	64.5	67.2
106	2009/04/01 00:30:58	65.4	62.1	61.5	59.7	64.8
111	2009/04/01 00:31:08	69.9	60.7	57.0	58.7	63.4
116	2009/04/01 00:31:18	67.7	66.4	58.1	55.7	57.0
121	2009/04/01 00:31:28	64.0	65.0	57.9	57.4	62.2
126	2009/04/01 00:31:38	65.2	73.9	70.6	69.7	74.8
131	2009/04/01 00:31:48	74.2	68.3	68.8	74.7	63.9
136	2009/04/01 00:31:58	70.1	57.5	56.3	55.2	54.6
141	2009/04/01 00:32:08	56.4	64.0	63.8	61.0	58.2
146	2009/04/01 00:32:18	56.3	57.1	58.4	64.7	69.4
151	2009/04/01 00:32:28	72.5	63.6	63.5	69.2	66.1
156	2009/04/01 00:32:38	64.0	60.4	59.9	59.2	60.0
161	2009/04/01 00:32:48	63.1	61.7	63.2	74.0	63.0
166	2009/04/01 00:32:58	62.0	60.5	58.8	59.3	61.4
171	2009/04/01 00:33:08	61.1	61.9	65.0	69.9	59.7
176	2009/04/01 00:33:18	59.6	59.7	58.3	58.3	62.2
181	2009/04/01 00:33:28	60.4	59.0	58.1	58.7	57.0
186	2009/04/01 00:33:38	56.4	58.3	66.3	70.5	64.6
191	2009/04/01 00:33:48	59.4	59.7	56.8	55.6	56.5
196	2009/04/01 00:33:58	55.0	56.0	59.7	67.1	76.8
201	2009/04/01 00:34:08	69.2	63.8	60.3	60.3	59.9
206	2009/04/01 00:34:18	58.3	57.2	58.8	56.4	56.0
211	2009/04/01 00:34:28	56.0	53.7	53.8	54.6	57.5
216	2009/04/01 00:34:38	59.0	67.6	67.7	63.2	58.4
221	2009/04/01 00:34:48	61.2	76.7	63.8	69.7	65.9
226	2009/04/01 00:34:58	67.4	68.3	66.2	72.0	77.1
231	2009/04/01 00:35:08	64.1	67.2	70.3	69.8	69.6
236	2009/04/01 00:35:18	64.8	65.1	69.2	71.6	64.0
241	2009/04/01 00:35:28	61.9	60.6	62.6	71.2	69.7
246	2009/04/01 00:35:38	69.8	67.9	77.5	76.9	63.6
251	2009/04/01 00:35:48	71.4	64.5	65.7	72.7	62.8
256	2009/04/01 00:35:58	63.2	57.7	58.4	58.6	57.5
261	2009/04/01 00:36:08	57.8	62.3	62.8	63.2	71.2
266	2009/04/01 00:36:18	59.7	59.1	60.0	70.1	59.5
271	2009/04/01 00:36:28	56.3	53.0	51.7	51.9	52.7
276	2009/04/01 00:36:38	53.2	53.4	56.5	65.4	67.1
281	2009/04/01 00:36:48	68.1	79.1	70.9	78.3	64.0
286	2009/04/01 00:36:58	65.3	70.1	60.7	58.8	58.1
291	2009/04/01 00:37:08	57.4	58.8	58.9	61.8	68.1
296	2009/04/01 00:37:18	63.7	68.2	66.9	59.2	62.2
301	2009/04/01 00:37:28	68.0	74.7	66.8	61.7	61.8
306	2009/04/01 00:37:38	66.9	78.4	63.8	70.9	65.4
311	2009/04/01 00:37:48	65.1	69.1	68.6	67.5	67.9
316	2009/04/01 00:37:58	62.7	63.2	60.9	63.8	70.2
321	2009/04/01 00:38:08	63.1	62.9	61.8	70.7	66.3
326	2009/04/01 00:38:18	67.3	60.7	62.9	65.9	65.7
331	2009/04/01 00:38:28	60.1	58.4	56.1	55.3	57.1
336	2009/04/01 00:38:38	63.2	69.2	63.5	69.9	72.1
341	2009/04/01 00:38:48	65.7	63.0	64.7	59.8	57.0
346	2009/04/01 00:38:58	55.8	56.4	57.1	60.8	69.2
351	2009/04/01 00:39:08	78.0	71.1	67.9	66.4	68.4
356	2009/04/01 00:39:18	68.3	66.4	74.0	68.9	67.0
361	2009/04/01 00:39:28	64.3	61.8	61.1	61.1	62.2
366	2009/04/01 00:39:38	62.1	64.8	67.1	68.6	66.3
371	2009/04/01 00:39:48	68.1	69.7	69.4	68.6	66.8
376	2009/04/01 00:39:58	64.6	64.9	59.6	62.5	67.7
381	2009/04/01 00:40:08	64.9	61.9	66.3	68.7	73.6
386	2009/04/01 00:40:18	66.8	69.3	64.3	63.4	63.6
391	2009/04/01 00:40:28	64.7	67.6	71.3	65.8	64.3
396	2009/04/01 00:40:38	62.9	65.3	69.5	66.4	64.3
401	2009/04/01 00:40:48	61.8	61.3	65.3	75.8	64.0
406	2009/04/01 00:40:58	64.1	65.4	60.8	57.8	55.5
411	2009/04/01 00:41:08	54.7	54.1	53.2	53.9	52.5
416	2009/04/01 00:41:18	52.3	54.7	56.3	55.8	56.1
421	2009/04/01 00:41:28	56.8	62.6	69.0	66.2	60.8

426	2009/04/01	00:41:38	58.4	56.3	55.5	56.5	58.3
431	2009/04/01	00:41:48	65.2	63.6	58.8	60.1	67.1
436	2009/04/01	00:41:58	80.9	62.2	60.9	70.8	64.2
441	2009/04/01	00:42:08	57.4	56.3	55.1	56.3	56.8
446	2009/04/01	00:42:18	55.7	55.6	58.3	63.5	75.9