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August 13, 2021

**Subject: 5260 Monterey Road Gas Station and Convenience Store Project –
Survey/Analysis Addressing Municipal Code Noise Criteria.**

Ms. Rina Shah
City of San Jose
Planning, Building and Code Enforcement Department
200 East Santa Clara Street, 3rd Floor Tower
San José, CA 95113

Dear Ms. Shah:

Richard Grassetti of Grassetti Environmental Consulting has asked me to review your June 10, 2021 letter to MI Architects, Inc. (“RE: Site Development Permit File No. H19-043”) and to address the concerns expressed therein about potential noise impacts to the surrounding properties from their plans for improvements to the Valero fueling/service station at 5260 Monterey Road in San Jose.

According to that letter, the Site Development Permit would allow:

“... addition of 1,920-square foot convenience store to an existing 1,097-square foot gas service building, removal of an existing gas fueling canopy over five gas dispensers and replacement with 5,088-square foot gas fueling canopy over six dual gas dispensers and removal of four ordinance-sized trees for a gas station located on a 0.53-gross acre site in the CP Commercial Pedestrian Zoning District.”

To address project potential noise impacts, the City asks MI Architects, Inc. to:

“Provide a letter from the noise consultant that the gas station meets the noise requirement of 60 decibels at commercial property lines and 55 decibels at residential property lines.”

City of San Jose Noise Standards Applicable to the Project

The noise standards specified in the City letter are from the City of San Jose Municipal Code, specifically Title 20, Chapter 20.30.700 (for Residential Districts) and Chapter 20.40.600 (for Commercial Districts and in a Public/Quasi-Public [PQP] District), as follows:

“Noise. The sound pressure level generated by any use or combination of uses on a property shall not exceed the decibel levels indicated in ... [the table below] at any property line, except upon issuance and in compliance with a special use permit as provided in Chapter 20.100.”

Land Use Designation	Maximum Noise Level in Decibels at Property Line
<i>Any residential or non-residential use</i>	55
<i>Commercial or PQP use adjacent to a property used or zoned for commercial or other non-residential purposes</i>	60

Site Survey & Noise Measurements to Determine Project Compliance

As determined by my preliminary review in Google Earth, the project site, now occupied by a Valero fueling/service station with a small convenience store, fronts Monterey Road to the south and Roeder Road to the east. The surrounding area (out to a considerable distance) is comprised of low-density residential uses all in the City of San Jose. As a follow-up, I surveyed the site and vicinity on a recent midweek day (July 8, 2021) to observe the influential on- and near-site noise sources and to measure noise levels (with an Extech SDL600, Type II, ANSI-certified meter) that site occupants and adjacent residents are exposed to. My observations during the survey and the noise data collected are summarized in **Table 1**. Continuous displays of the noise levels measured at the three locations are shown in the following graphs.

The nearest residential use to the project site is located across Roeder Road to the east of the site boundary (about 75 feet), with additional residences located farther away to the north (about 150 feet) and even farther to the west and south (about 250 feet). The nearest residences south of the project site are south of Monterey Road and are additionally screened from its traffic noise by a northern property-line sound wall along the entire length of that residential area. The nearest existing commercial use to the project site is a convenience market (Quick & Save) directly adjacent to the site’s northern boundary; another fueling/service station (Shell) is located to the east of the site across Roeder Road.

Existing ambient noise levels at all measurement locations are dominantly influenced by motor vehicle traffic flows on Monterey Road and/or Roeder Road. All of the major peaks in the noise level graphs are related to the passage of motor vehicles on the above-mentioned roads, either singly or in groups. No influences from noise sources located on the project site were noted.

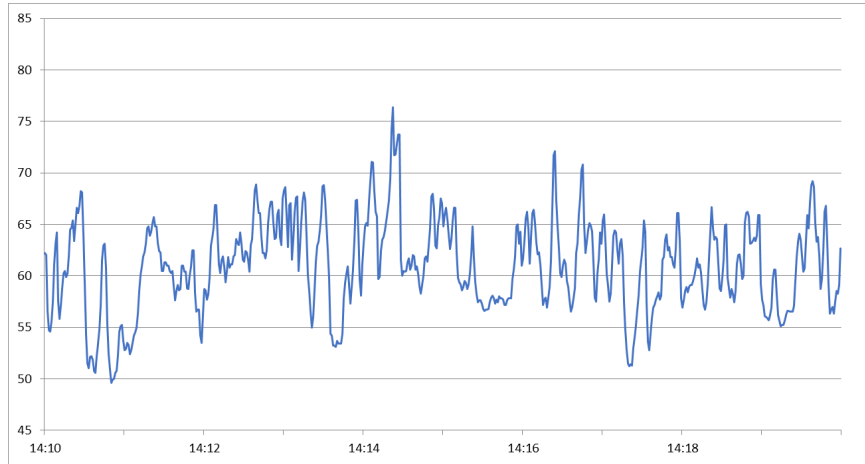
Table 1: Valero Gasoline/Service Station, 5260 Monterey Road, San Jose CA Ambient Noise Measurement Locations/Data (dBA) – July 8, 2021



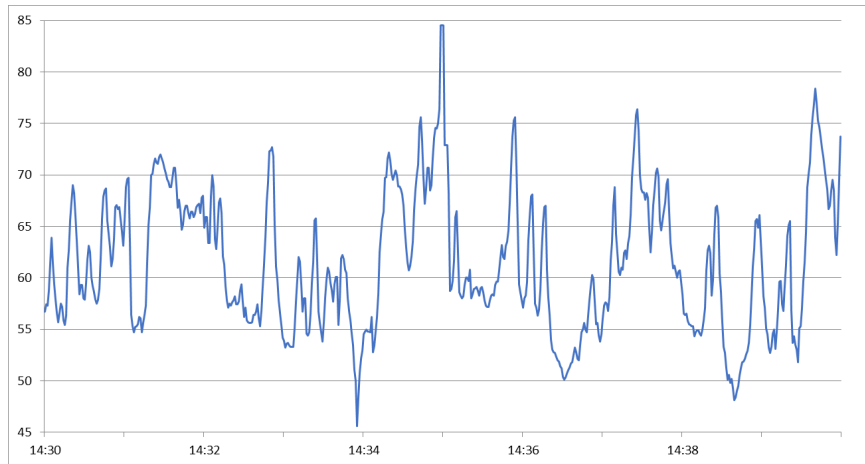
Measurement Location	L _{min}	L ₉₀	L _{eq}	L ₁₀	L _{max}	Observations during Measurement Period
Location #1 Sidewalk fronting Roeder Road, outside closest existing residential to the site. Begin: 14:10.	49.6	55.1	63.3	66.4	76.4	Motor vehicle traffic is the dominant noise source, with the influence of Monterey Road substantial. No influence from mobile or stationary noise sources on the service station property.
Location #2 Southwest corner of the site, fronting Monterey Road, 25 feet from curbside. Begin: 14:30	45.6	53.3	67.4	70.2	84.5	Motor vehicle traffic on Monterey Road is the dominant noise source, with peak noise events >70 dBA from the close passage of motor vehicles singly or in groups.
Location #3 Sidewalk fronting Roeder Road, at northern site boundary with existing adjacent commercial use. Begin: 14:46	49.1	52.8	60.6	63.6	73.4	Motor vehicle traffic on Roeder Road is the dominant noise source, with Monterey Road's contribution reduced by increased distance and screening by intervening structures.

The decibel (dB) is the standard measure of a sound's loudness relative to the human threshold of perception. Decibels are said to be **A-weighted (dBA)** when corrections are made to a sound's frequency components during a measurement to reflect the known, varying sensitivity of the human ear to different frequencies. The **Equivalent Sound Level (L_{eq})** is a constant sound level that carries the same sound energy as the actual time-varying sound over the measurement period. **Statistical Sound Levels - L_{min}, L₉₀, L₁₀ and L_{max}** - are the minimum sound level, the sound level exceeded 90% of the time, the sound level exceeded 10% of the time and the maximum sound level, respectively; all as recorded during measurement periods of 10-minute durations.

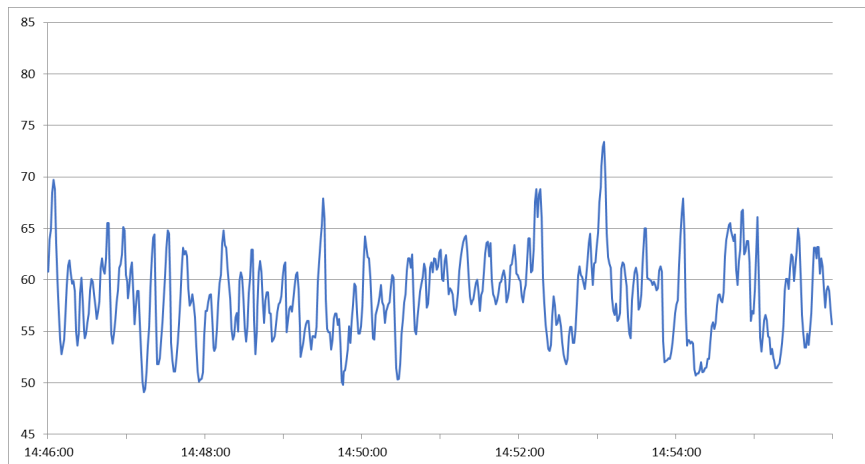
Recorded Sound Levels @ Measurement Location #1



Recorded Sound Levels @ Measurement Location #2



Recorded Sound Levels @ Measurement Location #3



Conclusions on Project Compliance with Municipal Code Noise Standards

- The noise measurements taken at **Location #1** are indicative of existing, weekday, daytime noise levels at the property line of the closest existing residential use to the project site. As such, the Municipal Code limits “... *the sound pressure level generated by any use or combination of uses on a property [underline added] shall not exceed ...*” **55 dBA** “*maximum noise level in decibels at property line.*”

From the measurement data taken, the existing weekday, daytime average noise level (L_{eq}) at the west property line of the closest residential to the project site is 63.3 dBA, with a statistical frequency of being above 55 dBA about 90% of the time (L_{90}), both exceeding the Code’s 55 dBA (L_{max}) limit. But the Code requires that the noise sources responsible for this exceedance be located on the property that is at issue in the development permit application (i.e., the project site). In this case, motor vehicle traffic flows on Monterey Road and Roeder Road are the overwhelmingly dominant influence on local noise levels. No existing on-project-site noise sources (either related to on-site motor vehicle activity or stationary equipment operation) had any noticeable influence on the measured values.

- The noise measurements taken at **Location #3** are indicative of existing, weekday, daytime noise levels at the property line of the closest existing commercial use to the project site (the Quick & Save convenience market). As such, the Municipal Code limits “... *the sound pressure level generated by any use or combination of uses on a property [underline added] shall not exceed ...*” **60 dBA** “*maximum noise level in decibels at property line.*”

From the measurement data taken, the existing weekday, daytime average noise level (L_{eq}) at the south property line of the closest commercial use to the project site is 60.6 dBA, which gives a statistical frequency of being above 60 dBA about 50% of the time, thereby exceeding the Code’s 60 dBA (L_{max}) limit. Just as for the residential standard, the Code requires that the noise sources responsible for this exceedance be located on the project site. In this case, motor vehicle traffic flows on Roeder Road are the dominant influence of local noise levels and no on-project-site sources noticeably influenced the measured values.

- There is still the question of whether the increased motor vehicle activity attributed to project implementation would be large enough to influence future project site vicinity noise levels with respect to the same Municipal Code standards. This potential effect can be gauged by looking at the motor vehicle trip generation estimates gathered by the project transportation analysis (as reported in **Table 5** taken from that document shown below):

Table 5. Proposed Project Trip Generation

	Land Use	Source	ITE Code	Size	Unit ^a	AM Peak Hour			PM Peak Hour			Daily Total
						In	Out	Total	In	Out	Total	
Total Proposed Site	Gasoline/Service Station with Convenience Market	ITE	945 ^b	12	VFP	76	73	149	86	82	168	2,464
Existing	Gasoline/Service Station	ITE	944 ^c	10	VFP	-51	-51	-102	-70	-70	-140	-1,720
Net New Trips - Before Adjustments						25	22	47	16	12	28	744
<i>Internal Trip Adjustment^d</i>						0	0	0	0	0	0	0
<i>Location-based Vehicle Mode Share Adjustment^e</i>						0	0	0	0	0	0	0
<i>Project Trip Adjustment^f</i>						0	0	0	0	0	0	0
<i>Pass-by Trip Adjustment - Total Proposed Site^g</i>						-47	-45	-92	-48	-46	-94	-1,528
<i>Pass-by Trip Adjustment - Existing^h</i>						30	30	60	29	29	58	998
Pass-by Trip Adjustment (Net)						-17	-15	-32	-19	-17	-36	-530
Net New Trips - After Adjustments						8	7	15	(0)	(0)	(0)	214

According to the project traffic analysis, there would be 214 net new daily motor vehicle trips added to local roadways if the proposed project developments (i.e., the new convenience store and modifications to fueling stations/canopy) are added to the existing on-site retail use. This can be put into context with the existing local traffic volumes, also determined by the traffic analysis: peak hour volumes on Monterey Road and Roeder Road of about 1000 and 3000, respectively; with corresponding daily volumes of 10,000 and 30,000 (the latter following the traffic engineering “rule-of-thumb” that daily volumes are about 10 times the peak hour volumes). It would take a doubling of traffic volumes on a given street to result in a 3-dBA increase in local noise levels – an increment that the San Jose General Plan defines, in Policy EC-1.2, as the minimum for a significant noise impact in an area where the City’s daily average noise standards are exceeded (as they are on this project’s site and vicinity). Thus, the project’s addition of 214 vehicle trips to the thousands of existing daily motor vehicle trips on local streets would increment local noise levels, at most, by a small fraction of a decibel and would not be responsible for any violation of Municipal Code noise standards.

At your request, I can provide any needed additional details on the survey, measurements taken, and rationale for the conclusions drawn.

Sincerely,

Geoffrey H. Hornek