Ldn Consulting, Inc.

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July 15, 2019

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SUBJECT: NOISE ASSESSMENT FOR THE LUISENO VILLAGE DEVELOPMENT– SAN JACINTO CA

The firm of Ldn Consulting is pleased to submit the following noise impact analysis for the proposed **Luiseno Village** development in the City of San Jacinto. The purpose of the survey is to determine the estimated noise levels from the proposed operations and recommend any mitigation measures, if needed, for compliance with the City of San Jacinto Ordinance requirements for noise.

PROJECT LOCATION/DESCRIPTION

The project site is located at the southwest corner of Ramona Expressway and Main Street in the City of San Jacinto. The project vicinity can be seen in Figure 1 on the following page. The project consists of a service station with a convenience market and carwash, a fast-food restaurant with drive-thru, and two specialty retail buildings. The purpose of this report is to analyze the noise associated with the operations and construction. The project site configuration is provided in Figure 2 on the following page.

ACOUSTICAL FUNDAMENTALS

Noise is defined as unwanted or annoying sound which interferes with or disrupts normal activities. Exposure to high noise levels has been demonstrated to cause hearing loss. The individual human response to environmental noise is based on the sensitivity of that individual, the type of noise that occurs and when the noise occurs. Sound is measured on a logarithmic scale consisting of sound pressure levels known as a decibel (dB). The sounds heard by humans typically do not consist of a single frequency but of a broadband of frequencies having different sound pressure levels. The method for evaluating all the frequencies of the sound is to apply an A-weighting to reflect how the human ear responds to the different sound levels at different frequencies.

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Figure 1: Project Site Location

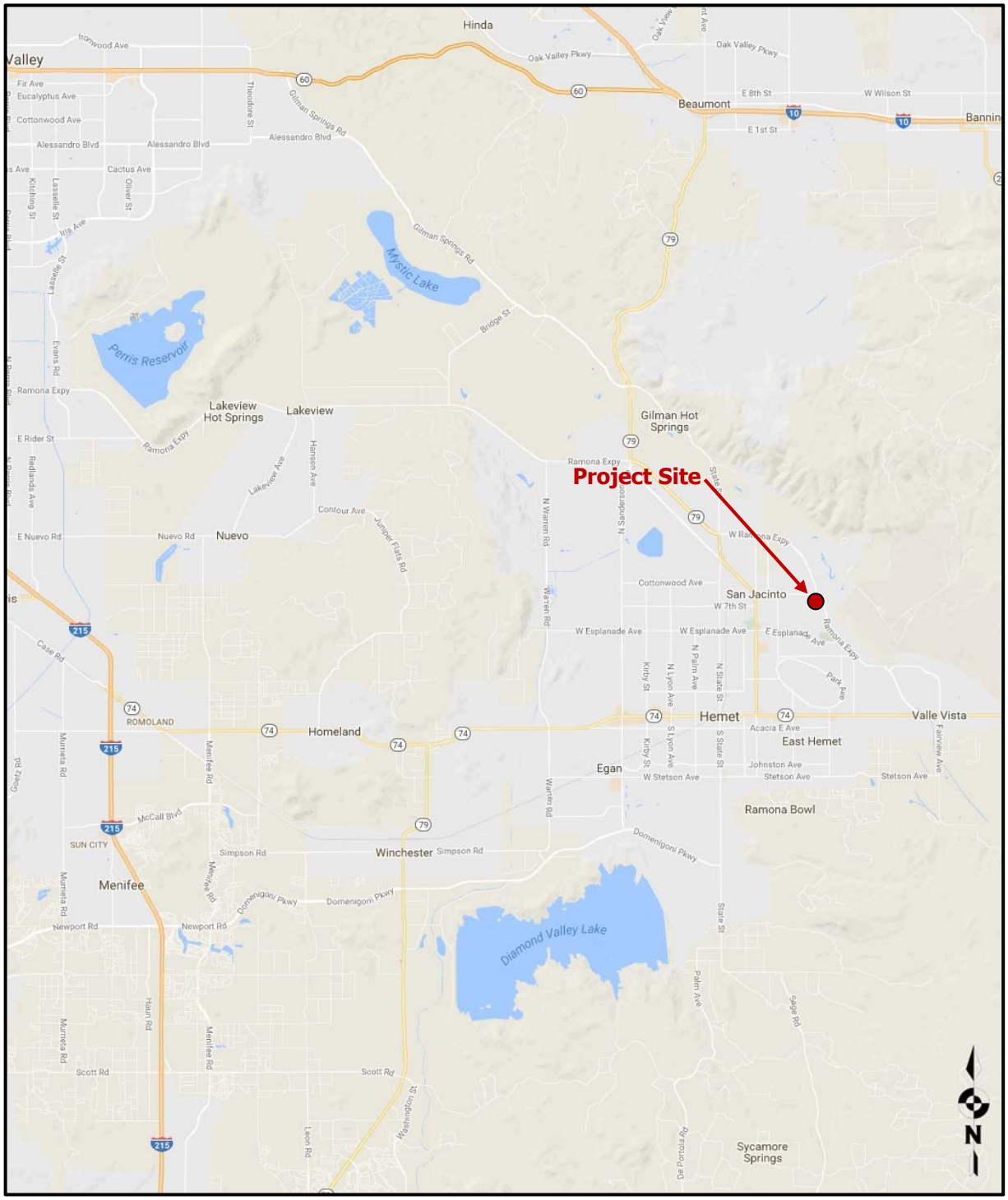

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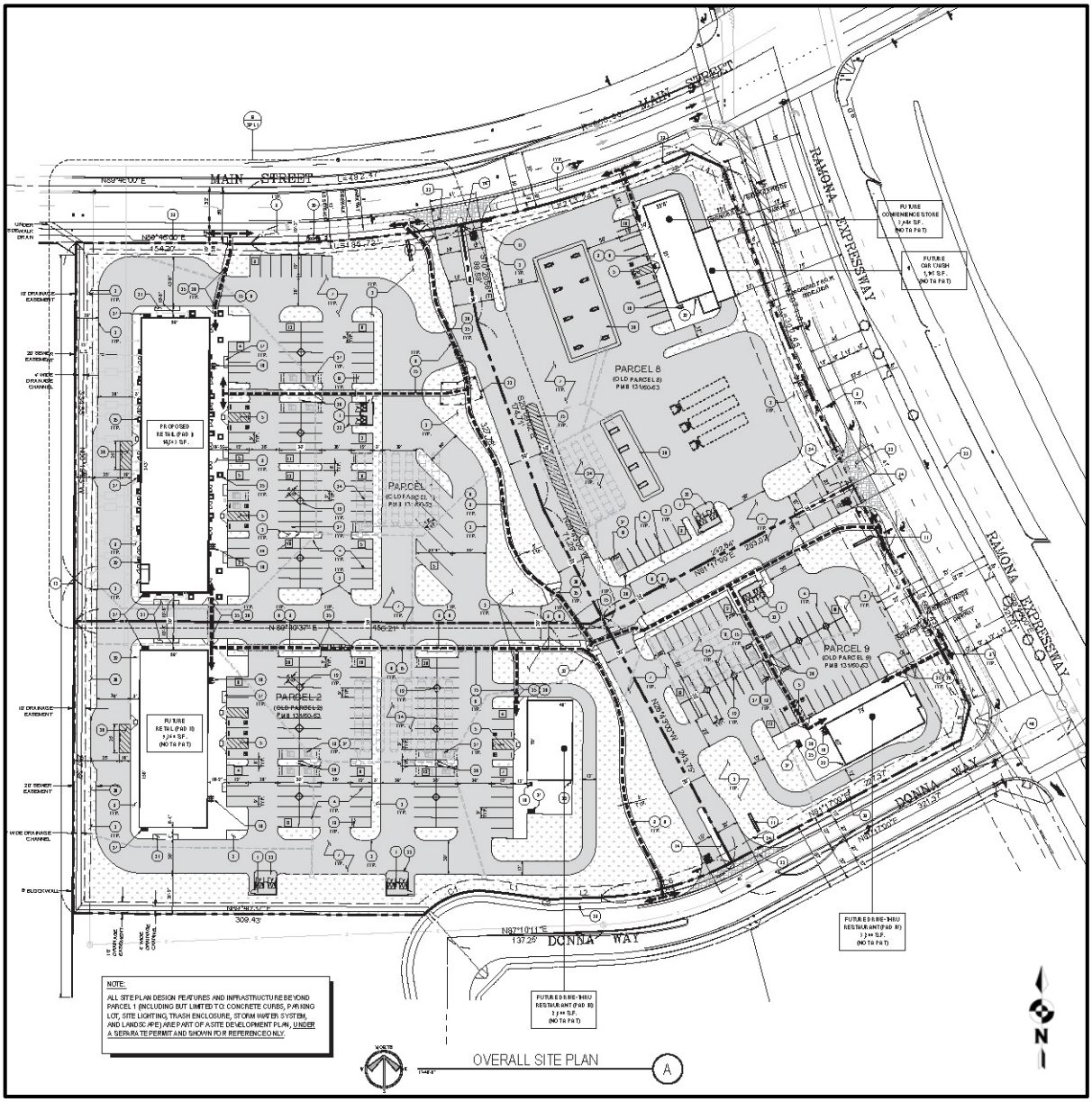
Figure 2: Project Site Configuration



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NOISE STANDARDS

The City of San Jacinto outlines their noise regulations and standards within the Noise Element from the General Plan and the Noise Ordinance from the Municipal Code. Applicable policies and standards governing environmental noise in the City are set forth in the General Noise Element. To control stationary source (non-transportation related) noise impacts, the City of San Jacinto has adopted guidelines as part of a noise control ordinance. For the purpose of this project, the noise impacts associated with stationary sources are controlled by the City's Noise Ordinance. Chapter 8.40.040 of the City's general noise control standards.

Table 1: Allowable Exterior Noise Level

Noise Zone	Type of Land Use	Allowed Equivalent Noise Level (Leq)	
		7:00 a.m. to 10:00 p.m.	10:00 p.m. to 7:00 a.m.
I	Single-Family Residential	65 dBA	45 dBA
II	Multifamily Residential, Mobile Home Parks	65 dBA	50 dBA
III	Commercial Property	65 dBA	60 dBA
IV	Residential Portion of Mixed Use	70 dBA	70 dBA
V	Manufacturing and Industrial, Other Uses	70 dBA	70 dBA
Source: City of San Jacinto Exterior Noise Standards, Section 8.40.040			

In addition to the noise standards, the City has outlined goals, policies and implementation measures to reduce potential noise impacts and are presented below:

Goals, Policies, and Implementation Measures

Policies, goals and implementation program measures from the Noise Element that would mitigate potential impacts on noise include the following:

Noise Goal 1: Minimize the effects of noise through proper land use planning and development techniques.

Policy 1.1: Use the City's adopted noise/land use compatibility standards as a guide for future planning and development decisions.

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Policy 1.2: Require noise control measures, such as berms, walls, and sound attenuating construction in areas of new development or rehabilitation.

Policy 1.3: When necessary, require buffer areas between noise sources and sensitive receptors.

Policy 1.4: Use creative techniques to mitigate potential noise incompatibilities, particularly in areas with a mixture of uses.

Policy 1.5: Discourage development that will create unmitigated nuisances associated with noise.

Noise Goal 2: Minimize the effects of transportation-related noise.

Policy 2.1: Reduce transportation-related noise impacts to sensitive land uses through the use of noise control measures.

Policy 2.2: Require sound-reduction design in development projects impacted by transportation related noise, particularly along highways and major arterials.

Policy 2.3: Control truck traffic routing to reduce transportation-related noise impacts to sensitive land uses.

Noise Goal 3: Minimize the effects of non-transportation-related noise.

Policy 3.1: Reduce the impacts of noise-producing land uses and activities on noise-sensitive land uses.

Policy 3.2: Require sound-reduction design techniques in new construction or rehabilitation projects impacted by non-transportation noise.

Policy 3.3: Provide a means for the public to report non-transportation related nuisance noises.

N-1 Review Development Projects: Review discretionary development proposals for potential on- and off-site stationary and vehicular noise impacts per the California Environmental Quality Act (CEQA). Any proposed development located within a 60 dB or higher noise contour (per Figures N-1 and N-2) shall be reviewed for potential noise impacts and compliance with the noise and land use compatibility standards. The thresholds established in the Noise Element, Noise Ordinance, the Noise Contours Maps (Figure N-2), and Tables N-2 and N-3 of the Noise Element will be used to determine the significance of impacts. If potential impacts are identified, mitigation in the form of noise reduction designs/structures (e.g., landscaped berms, barriers, walls, enhanced parkways, increased setbacks) will be required to reduce the impact to a level less than significant, where feasible.

N-3 Minimize Construction Noise: Require all construction activity to comply with the limits (maximum noise levels, hours and days of allowed activity) established in the City

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noise regulations (Title 24 California Code of Regulations, Noise Ordinance) in order to reduce impacts associated with temporary construction noise to the extent feasible. Trucks associated with construction activities shall follow the designated truck routes described in Implementation Program C-3.

ANALYSIS PROCEDURES

Existing Noise Environment Onsite

To determine the existing noise environment and to assess potential noise impacts, a 24-hour measurement was taken at the project along the western property line. This was done to determine the existing conditions at the nearest residences. The noise measurements were recorded on September 12-13, 2018 by Ldn Consulting between approximately 4:00 p.m. and 3:00 p.m., the following day. Noise measurements were taken using two Larson-Davis Spark Model 706 Type 2 precision sound level meters, programmed, in "slow" mode, to record noise levels in "A" weighted form. The sound level meter was equipped with a windscreen during all measurements. The sound level meter was calibrated before and after the monitoring using a Larson-Davis calibrator, Model CAL 200.

The results of the noise level measurement are presented in Table 2. The existing noise levels in the project area consisted primarily of traffic along Main Street, and background noise from the Ramona Expressway in the distance. The noise measurement location was determined based on noise impact potential to the existing residential uses. Monitoring location 1 (M1) was located near the northwestern portion of the project and monitoring location 2 (M2) was located along the western property line. The noise monitoring locations are provided graphically in Figure 3.

Table 2: Measured Ambient Noise Levels

Measurement Identification	Date and Time	Overall Noise Levels	
		Average	CNEL
M1	September 12, 2018 4:00 p.m. – September 13, 2018 3:00 p.m.	49.3	54.7
M2		45.4	50.5

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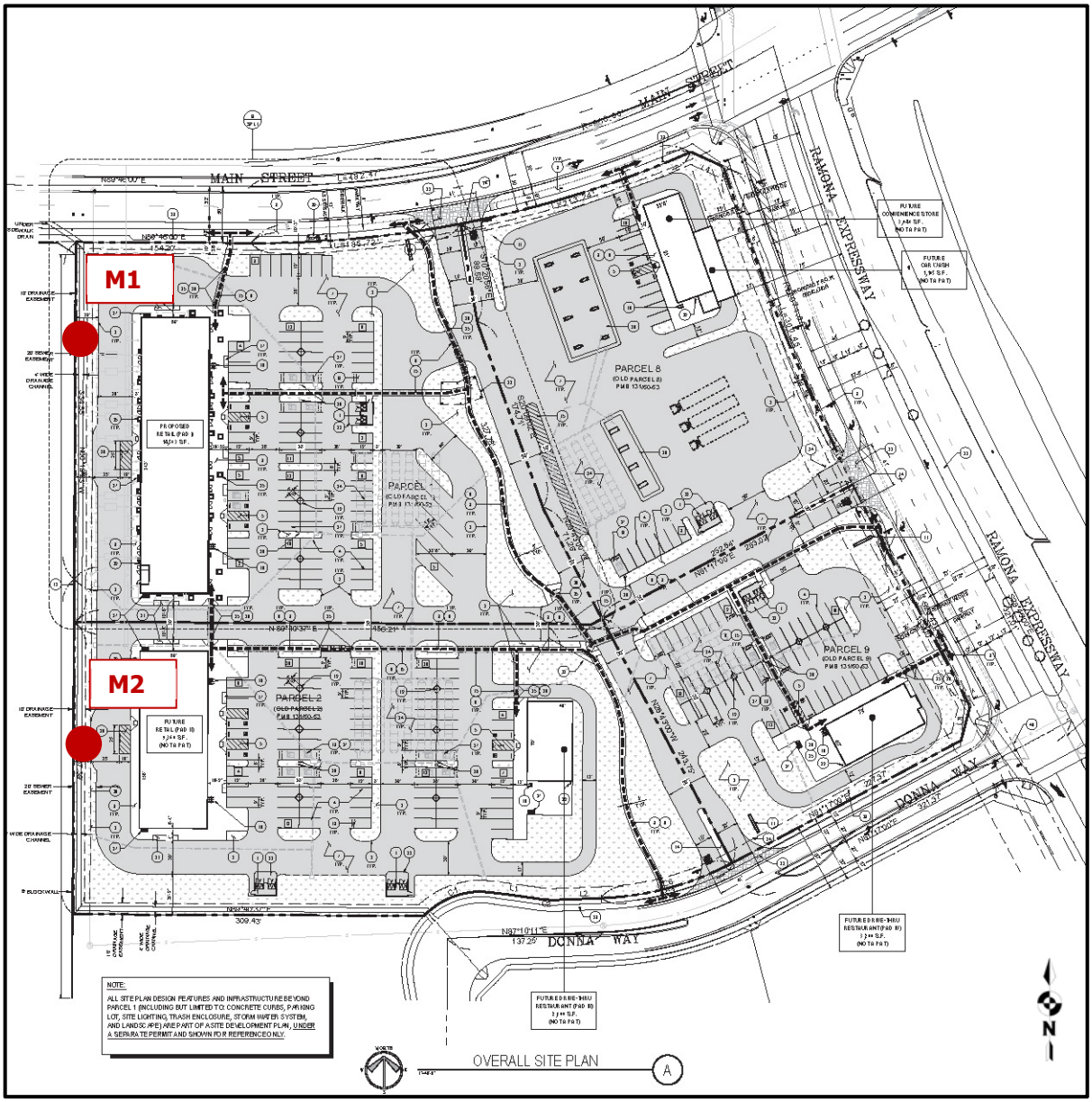
Figure 3: Ambient Monitoring Locations



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OPERATIONAL NOISE

Fixed or point sources radiate outward uniformly as sound travels away from the source. Their sound levels attenuate or drop off at a rate of 6 dBA for each doubling of distance. Using a point-source noise prediction model, calculations of the expected operational noise impacts were completed. The essential model input data for these performance equations include the source levels of each type of equipment, relative source to receiver horizontal and vertical separations, the amount of time the equipment is operating in a given day (also referred to as the duty-cycle) and any transmission loss from topography or barriers. Noise levels drop 3 decibels each time the duration of the source is reduced in half. Therefore, an hourly noise level over a 15 minute period would be reduced by 6 decibels based on the limited time of operation.

The existing residential uses to the west and the vacant residential parcel to the north are closest to the proposed operations. The vacant residential parcel to the north is located across the adjacent roadway. Commercial uses surround the remainder of the site. Therefore, the worst-case potentially affected property line is the residential uses to the west. An existing 6-foot block wall separates the project site from the existing residences along the western property line. The noise level projections were calculated based on the site plan provided by MPA Architects, Inc., 2019, showing the location of the proposed uses and the property lines.

Carwash

In order to examine the potential stationary noise source impacts associated with the operation of the proposed carwash, reference noise levels were used for a typical air dryer unit (*Source: Ryko ThrustPro Air Dryer with Noise Reduction Unit).* Additionally, sound level measurements of a similar existing carwash were taken for the proposed vacuum unit. The short-term noise measurement was taken at a distance of four-feet using a Larson-Davis Model LxT Type 1 precision sound level meter, programmed, in "slow" mode, to record noise levels in "A" weighted form. The sound level meter was calibrated before and after the monitoring using a Larson-Davis calibrator, Model CAL 200. The reference noise level of the air dryer and the results of the noise measurements at a similar vacuum unit are shown in Table 3.

During the duration of the measurements taken, the total run time for the similar drive thru car wash was approximately 5 minutes. Depending on the carwash package, this includes a wash cycle of approximately 3 to 4 minutes plus the air dryer running for approximately 1 minute and 30 seconds. During this time, the vacuum unit could also operate for approximately 2-3 minutes.

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Table 3: Project Related Operational Noise Sources

Quantity	Equipment Description	Related Sound Level Distance (ft)	Noise Level (dBA)
1	Air Dryer w/Noise Reduction Unit[1]	10	80.0
1	Vacuum Unit (Unshielded)	4	73.6
[1]*Source: Ryko ThrustPro Air Dryer with Noise Reduction Unit*			

Therefore, it was determined that at peak demand, a worst-case of 12 carwash operations could occur within an hour. Accounting for the peak hour trip volume of 12 vehicles per hour, a maximum run time of the equipment is shown in Table 4. Utilizing the maximum amount, the equipment can be operating, an adjusted noise level for the air dryer was calculated to be 74.8 dBA at 10 feet and the vacuum unit would result in a calculated noise level of 71.4 dBA at a distance of 4 feet. The noise level reductions are shown in Table 4.

Table 4: Run Time Adjusted Noise Levels

Equipment Description	Run Time Per Hour (sec)	Decibel Reduction (dBA)	Adjusted Noise Level (dBA)	Related Sound Level Distance (ft)
Air Dryer w/Noise Reduction Unit[1]	1,080	-5.2	74.8	10
Vacuum Unit (Unshielded)	2,160	-2.2	71.4	4

The reductions from the equipment run times were incorporated into the reference noise levels. The residential property line is located over 540 feet to the west and the proposed convenience store would also block direct line of site, shielding the equipment noise from the residence. Utilizing the adjusted operational times and distance, the anticipated unshielded noise level was determined to be 40 dBA as can be seen in Table 5. Therefore, the proposed operations of the carwash and service station would not exceed the City's daytime threshold of 65 dBA and the most restrictive nighttime threshold of 45 dBA. Therefore, no additional noise reductions would be required.

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Table 5: Project Carwash Noise Levels (Nearest Property Line)

Source	Distance Separation (Feet)	Reference Noise Level (dBA)	Noise Reduction Due to Distance (dBA)	Property Line Noise Level (dBA)*
Air Dryer w/Noise Reduction Unit[1]	540	74.8	-34.6	**40**
Vacuum Unit (Unshielded)		71.4	-42.6	**29**
*Complies with the nighttime Noise Standard of 45 dBA.				

Fast Food Restaurant

In order to examine the potential stationary noise source impacts associated with the operation of the proposed fast food restaurants, reference noise levels were used for the menu board and speaker post (Source: HME Electronics, Inc., HME SPP2 Speaker Post). The reference noise level of the speaker board is 54 dBA CNEL at 32 feet. The future drive-thru speakers are located 415 feet and 615 feet from the nearest residential property line to the west and resulting in an anticipated noise level of approximately 33 dBA. Therefore, the proposed operations of the fast food restaurant and drive-thru would not exceed the City's daytime threshold of 65 dBA and the most restrictive nighttime threshold of 45 dBA. Therefore, no additional noise reductions would be required.

Deliveries and Trash Trucks

The proposed project is not anticipated to require a significant number of truck deliveries or garbage trucks. The deliveries for the proposed project would consist mostly of smaller deliveries in smaller trucks and a few larger trucks that would be infrequent. In any given hour, it is anticipated that at most two deliveries would occur. The noise associated with one large truck delivery and smaller truck would not result in a significant number of truck trips to significantly increase noise within the project area.

In order to evaluate the truck delivery noise impacts, the analysis utilized reference noise level measurements taken at a Shopping Center. The measurements include truck drive-by noise, truck loading/unloading and truck engine noise. The unmitigated exterior noise levels for truck drive-by noise and truck engine noise were measured at 66.5 dBA Leq at a distance of 25-feet from the loading dock. A truck will take approximately 2 minutes to drive in the site and position itself, less than 30 minutes to be unloaded and another 2 minutes to exit the site. During the

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loading/unloading of the truck the engine can only idle for five (5) minutes in compliance with State air quality requirements. To be conservative, it was assumed the truck engine could be operating for 15 minutes of the total time required during the delivery process (5 minutes at arrival, 5 minutes of idle and 5 minutes at departure).

The delivery trucks for the proposed retail uses on the western portion of the site will travel along the western property line and the nearest sensitive receptors to the project site include the single-family property line to the west approximately 50 feet from the trucks that will also be shielded by the existing 6-foot CMU wall. The distance would result in a reduction of 6 decibels, resulting in an overall noise level of 60.5 dBA at the property line. The existing 6-foot wall would provide a small amount of additional noise reduction that has not been accounted for to be conservative. The proposed operations of the delivery trucks would not exceed the City's daytime threshold of 65 dBA. If deliveries occur during the nighttime or early hours (10 pm to 7 am) potential noise impacts could occur at the residential structures to the west. Therefore, the limited deliveries to the retail on the west of the project site should occur during the daytime hours of 7 am and 10 pm to limit noise impact potential. Additionally, the project trash enclosures are centrally located 240 feet from the residential uses and no noise impacts are anticipated. The project should work with the local trash collection service to limit services between the hours of 7 am and 10 pm.

Parking Lots

Traffic associated with parking lots is typically not of sufficient volume to exceed community noise standards, which are based on a time-averaged scale. However, the instantaneous sound levels generated by a car door slamming and engine starting up may be an annoyance to adjacent sensitive receptors. The estimated maximum noise levels associated with parking lot activities typically range from 60-65 dBA and are short term. The project proposes a total of 269 parking spaces to be provided on-site and would not generate a significant amount of noise related activities.

It should be noted that parking lot noise are instantaneous noise levels compared to noise standards, which are averaged over time. As a result, actual noise levels over time resulting from parking lot activities would be far lower. Therefore, based on the limited operational time of vehicles on-site, distance separation, intervening buildings and the existing 6-foot CMU wall on the western property line no noise impacts are anticipated.

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Mechanical Ventilation

Typically, mechanical equipment (HVAC) noise is 70-80 dBA at a distance of 3 feet from 3-ton to 10-ton units. HVAC units would be included on the roof of the proposed buildings and would be shielded by a mechanical screen and/or the roof parapet, which would further reduce the noise. The HVAC units on most of the site would be located over 400 feet from the residential property line to the west, with the exception of the two retail buildings on the western portion of the site. The two retail buildings are roughly 70 feet from the property line and 100 feet from the residential structures, based on the site plans. The HVAC units will be set-back from the edge of the buildings at least 5 feet, resulting in a separation of 75 feet from the property line.

To determine the noise levels associated with the HVAC units on those two buildings, the higher noise level of 80 dBA at 3 feet for each anticipated HVAC unit was utilized and as many as four HVAC units would be in close proximity to each other and would operate at the same time. To predict the worst-case future noise environment, continuous reference noise levels were used to represent the mechanical ventilation system. Even though the mechanical ventilation system will cycle on and off throughout the day, this approach presents the worst-case noise condition. The anticipated roof-top mechanical ventilation layout can be seen in Figure 4.

Utilizing a 6 dBA decrease per doubling of distance, noise levels at the edge of the nearest property line to the west at the distances shown above were calculated for all the mechanical units. The worst case combined noise from the HVAC would occur from a handful of units located on the roofs of the proposed retail buildings once fully constructed. As can be seen in Table 6, the proposed HVAC noise levels would not exceed the City's daytime threshold of 65 dBA but would be in exceedance of the nighttime standard of 45 dBA without mitigation. Details on the mitigation are provided below.

Table 6: Unshielded HVAC Noise Levels (Nearest Property Line)

Receptor	Distance Separation (Feet)	Reference Noise Level (dBA)	Quantity	Cumulative Noise Level (dBA)	Noise Reduction Due to Distance (dBA)	Property Line Noise Level (dBA)*
Western Property Line	75	80	4	86	-28.0	**58**
Residence Ground Level	100				-30.4	**56**
Residence Second Level	100				-30.4	**56**
*Mitigation is required to meet the nighttime Noise Standard of 45 dBA.						

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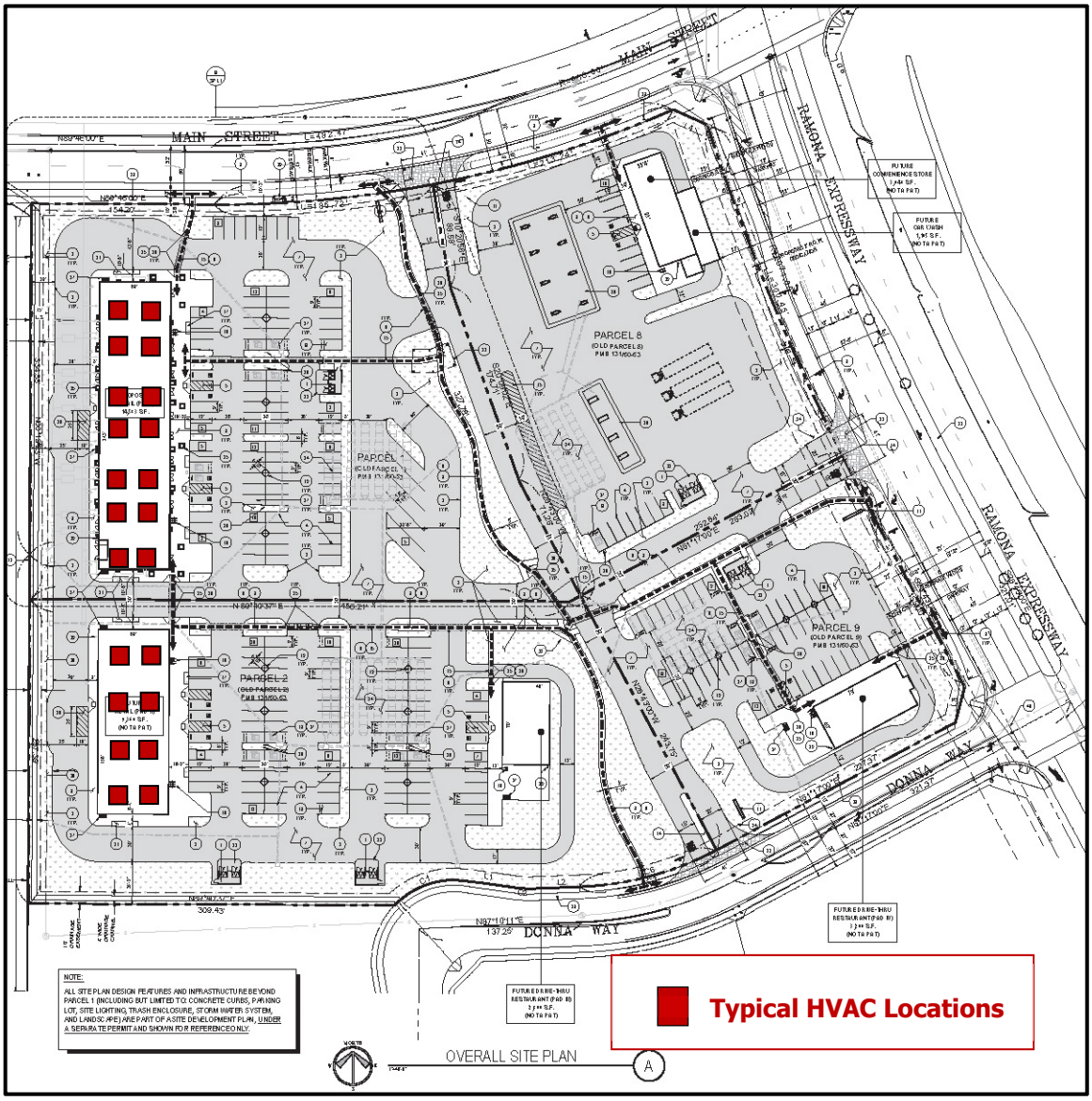
Figure 4: Typical Roof Mounted HVAC Configuration



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To determine the required mitigation needed to reduce the HVAC noise levels at the residences to the west, the Fresnel barrier reduction calculations was utilized. It was determined that the proposed parapet walls on each building or a mechanical screen that is at least 2 feet higher the proposed HVAC units, or roughly 6 feet in height is needed to shield them both visually and acoustically. The noise level reductions due to the parapet walls/ mechanical screens are provided in Table 7 below. The Fresnel barrier reduction calculations for the parapets are provided in ***Attachment A*** of this report.

Table 7: Mitigated HVAC Noise Levels (Nearest Property Line)

Receptor	Distance Separation (Feet)	Reference Noise Level (dBA)	Quantity	Cumulative Noise Level (dBA)	Noise Reduction Due to Distance (dBA)	Reduction Due to Screening (dBA)	Property Line Noise Level (dBA)*
Western Property Line	75	80	4	86	-28.0	-13.2	**45**
Residence Ground Level	100				-30.5	-12.4	**43**
Residence Second Level	100				-30.5	-11.3	**44**
*Complies with the nighttime Noise Standard of 45 dBA.							

As can be seen in Table 7, the proposed HVAC noise levels would not exceed the City's daytime threshold of 65 dBA and the most restrictive nighttime threshold of 45 dBA with the incorporation of the 6 foot high parapets or mechanical screening around the units. The remainder of the proposed buildings are located 400-600 feet from the western property line and would not require any additional shielding to comply with the City's noise standards. No impacts are anticipated at the property lines with the incorporation of the proposed roof parapets or mechanical screens along with the distance from the properties. All other property lines are located further from the proposed HVAC units and the resulting noise levels would also be below the 45 dBA threshold.

OFF-SITE NOISE IMPACTS

A significant off-site traffic noise impact would occur if the project resulted in or created a significant increase in the existing ambient noise levels. Studies have shown that the average human ear can barely perceive a change in sound level of 3 dB(A). A change of at least 5

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dB(A) is considered a readily perceivable change in a normal environment. A 10 dB(A) increase is subjectively heard as a doubling in loudness and would cause a community response. Based on these concepts of noise level increase and perception, if an area is already exposed to noise levels in excess of the land use compatibility guidelines and noise levels were to result in greater than a 3 dB(A) increase, then the impact would be considered significant.

The off-site project related roadway segment noise levels projected in this report were calculated using the methods in the Highway Noise Model published by the Federal Highway Administration (FHWA Highway Traffic Noise Prediction Model, FHWA-RD-77-108, December, 1978). The FHWA Model uses the traffic volume, vehicle mix, speed, and roadway geometry to compute the equivalent noise level. A spreadsheet calculation was used which computes equivalent noise levels for each of the time periods used in the calculation of CNEL. Weighting these equivalent noise levels and summing them gives the CNEL for the traffic projections.

To determine if direct off-site noise level increases associated with the development of the proposed project. The noise levels for the existing conditions were compared with the noise level increase of existing plus the proposed project, utilizing the traffic volumes provided for the project by Michael Baker International (MBI), 2019. Noise levels were developed for the following traffic scenarios:

Existing: Current day noise conditions without construction of the proposed project.

Existing Plus Project: Current day noise conditions plus the completion of the proposed project.

Existing vs. Existing Plus Project: Comparison of the direct project related noise level increases in the vicinity of the proposed project site.

The noise levels for the roadways in the vicinity of the project site are given in Table 8 for the Existing Scenario and in Table 9 for the Existing plus Project Scenario. Note that the values given do not take into account the effect of any noise barriers, structures or topography that may affect ambient noise levels. Table 10 presents the comparison of the Existing Year with and without project related noise levels. The roadway segment noise levels will increase from 0.1 dBA CNEL to 0.8 dBA CNEL with the development of the proposed project. The project does not create a noise level increase on any roadway segment as shown in Table 10 that will cause a significant impact to any existing or future noise sensitive land uses.

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Table 8: Existing Noise Levels

Roadway Segment	ADT[1]	Vehicle Speeds (MPH)[1]	Noise Level @ 50-Feet (dBA CNEL)	60 dBA CNEL Contour Distance (Feet)
Ramona Expressway				
North of East Main Street	14,200	55	72.2	152
East Main Street to Project Driveway #2	21,000	55	73.9	197
Project Driveway #2 to Donna Way	21,100	55	74.0	198
Donna Way to East 7th Street	20,800	55	73.9	196
South of East 7th Street	20,500	55	73.8	194
East Main Street		0		
West of Hewitt Street	8,500	40	66.5	63
Hewitt Street to Project Driveway #1	7,600	40	66.0	58
Project Driveway #1 to Ramona Expressway	5,500	40	64.6	47
Lake Park Drive		0		
Ramona Expressway to Soboba Road	10,300	40	67.3	72
East 7th Street				
Hewitt Street to Las Rosas Drive	7,200	40	65.8	56
Las Rosas Drive to Donna Way	7,100	40	65.7	56
Donna Way to Ramona Expressway	4,100	40	63.3	39

[1] Source: Project volumes prepared by MBI, 2019

Table 9: Existing + Project Noise Levels

Roadway Segment	ADT[1]	Vehicle Speeds (MPH)[1]	Noise Level @ 50-Feet (dBA CNEL)	60 dBA CNEL Contour Distance (Feet)
Ramona Expressway				
North of East Main Street	14,820	55	72.4	156
East Main Street to Project Driveway #2	22,240	55	74.2	205
Project Driveway #2 to Donna Way	21,720	55	74.1	202
Donna Way to East 7th Street	21,630	55	74.1	201
South of East 7th Street	21,330	55	74.0	199
East Main Street		0		
West of Hewitt Street	9,410	40	66.9	67
Hewitt Street to Project Driveway #1	8,840	40	66.7	65
Project Driveway #1 to Ramona Expressway	6,540	40	65.4	53
Lake Park Drive		0		
Ramona Expressway to Soboba Road	10,710	40	67.5	73
East 7th Street				
Hewitt Street to Las Rosas Drive	8,110	40	66.3	61
Las Rosas Drive to Donna Way	8,340	40	66.4	62
Donna Way to Ramona Expressway	4,510	40	63.7	41

[1] Source: Project volumes prepared by MBI, 2019

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Table 10: Existing vs. Existing + Project Noise Levels

Roadway Segment	Existing Noise Level @ 50-Feet (dBA CNEL)	Existing + Project Noise Level @ 50-Feet (dBA CNEL)	Project Related Direct Noise Level Increase (dBA CNEL)
Ramona Expressway			
North of East Main Street	72.2	72.4	0.2
East Main Street to Project Driveway #2	73.9	74.2	0.3
Project Driveway #2 to Donna Way	74.0	74.1	0.1
Donna Way to East 7th Street	73.9	74.1	0.2
South of East 7th Street	73.8	74.0	0.2
East Main Street			
West of Hewitt Street	66.5	66.9	0.4
Hewitt Street to Project Driveway #1	66.0	66.7	0.7
Project Driveway #1 to Ramona Expressway	64.6	65.4	0.8
Lake Park Drive			
Ramona Expressway to Soboba Road	67.3	67.5	0.2
East 7th Street			
Hewitt Street to Las Rosas Drive	65.8	66.3	0.5
Las Rosas Drive to Donna Way	65.7	66.4	0.7
Donna Way to Ramona Expressway	63.3	63.7	0.4
Sound Levels provided are worst-case and do not take into account topography or shielding from barriers.			

CONSTRUCTION NOISE

Section 8.40.090 of the noise ordinance allows for construction to occur between the hours of 7:00 a.m. to 7:00 p.m. on weekdays or Saturdays. Construction is not allowed on any Sunday of federal holiday.

There are exceptions to the regulation however for emergency construction, or when authorized by the City manager or his/her designee or if the level complies with the allowable limits as outlined within Section 8.40.040 or Section 8.40.050.

Construction is anticipated to occur during the permissible hours according the City's Municipal Code. Construction operations must follow the City's General Plan and the Noise Ordinance, which states that construction, repair or excavation work performed must occur within the permissible hours. Construction is anticipated to occur during the permissible hours according the City's Municipal Code and therefore, no impacts are anticipated. To further minimize construction noise at adjacent land uses, the following measures should be taken:

Ldn Consulting, Inc.
42428 Chisolm Trail, Murrieta CA 92562
phone 760-473-1253
Fax 760-689-4943

1. Construction should occur during the permissible hours as defined in Section 8.40.090.
2. During construction, the contactor shall ensure all construction equipment is equipped with appropriate noise attenuating devices.
3. The contractor should locate equipment staging areas that will create the greatest distance between construction-related noise/vibration sources and sensitive receptors nearest the project site during all project construction.
4. Idling equipment should be turned off when not in use.

MITIGATION SUMMARY

The proposed operations of the delivery trucks would not exceed the City's daytime threshold of 65 dBA. If deliveries occur during the nighttime or early hours (10 pm to 7 am) potential noise impacts could occur at the residential structures to the west. Therefore, the limited deliveries to the retail on the west of the project site should occur during the daytime hours of 7 am and 10 pm to limit noise impact potential. Additionally, the project should work with the local trash collection service to limit services between the hours of 7 am and 10 pm.

It was determined that the proposed parapet walls on each building or a mechanical screen that is at least 2 feet higher the proposed HVAC units, or roughly 6 feet in height is needed to shield them both visually and acoustically.

If you have any questions, please do not hesitate to contact me directly at (760) 473-1253 or at jlouden@ldnconsulting.net.

Sincerely,

Ldn Consulting, Inc.

Jeremy Louden, Principal

Attachment A: Fresnel Barrier Reductions

HVAC

Property Line
Source to Receiver Horizontal Distance (ft) = 70.00
Source to Barrier Horizontal Distance (ft) = 5.00
Barrier to Receiver Horizontal Distance (ft) = 65.00
Source Height (ft) = 22.00
Receiver Height (ft) = 5.00
Barrier Height (ft) = 24.00
Distance Source to Receptor (ft) d = 72.03
Distance Source to Barrier top (ft) d1 = 5.39
Distance Barrier top to Receiver (ft) d2 = 67.72

Frequency (Hz) = 500 Attenuation (db) = 13.2 Fresnel N = 0.950

Residential - First Level
Source to Receiver Horizontal Distance (ft) = 100.00
Source to Barrier Horizontal Distance (ft) = 5.00
Barrier to Receiver Horizontal Distance (ft) = 95.00
Source Height (ft) = 22.00
Receiver Height (ft) = 5.00
Barrier Height (ft) = 24.00
Distance Source to Receptor (ft) d = 101.43
Distance Source to Barrier top (ft) d1 = 5.39
Distance Barrier top to Receiver (ft) d2 = 96.88

Frequency (Hz) = 500 Attenuation (db) = 12.4 Fresnel N = 0.738

Residential - Second Level
Source to Receiver Horizontal Distance (ft) = 100.00
Source to Barrier Horizontal Distance (ft) = 5.00
Barrier to Receiver Horizontal Distance (ft) = 95.00
Source Height (ft) = 22.00
Receiver Height (ft) = 14.00
Barrier Height (ft) = 24.00
Distance Source to Receptor (ft) d = 100.32
Distance Source to Barrier top (ft) d1 = 5.39
Distance Barrier top to Receiver (ft) d2 = 95.52

Frequency (Hz) = 500 Attenuation (db) = 11.3 Fresnel N = 0.524