COUNCIL AGENDA: 12/12/17
FILE: 17-207
ITEM: 10.2

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: HONORABLE MAYOR AND COUNCIL

FROM: Rosalynn Hughey

SUBJECT: **SEE BELOW**

DATE: December 8, 2017

Approved

Date 12-8-17

COUNCIL DISTRICT: 9

SUPPLEMENTAL

SUBJECT: ADMINISTRATIVE HEARING ON A PERMIT APPEAL OF THE PLANNING COMMISSION'S APPROVAL OF A CONDITIONAL USE PERMIT AND SITE DEVELOPMENT PERMIT (FILE NO. CP16-035)

REASON FOR THE SUPPLEMENTAL

The City Council opened the administrative hearing on October 24, 2017, relating to the permit appeal. During the administrative hearing, staff provided an overview of the proposed project, approvals from Planning Commission for the proposed project, and acknowledged Councilmember Rocha's supplemental memorandum noting concern regarding the noise study that was submitted as part of the project review and the lack of actual noise measurements. The project applicant requested that the City Council administrative hearing be deferred to the November 28, 2017, to allow time for the project applicant to have a consultant conduct an updated noise study. The City Council received public testimony regarding the proposed carwash and convenience store. Residents and adjacent property owners expressed concern regarding potential noise and existing traffic conditions resulting from the adjacent schools. After public testimony, the City Council continued the administrative hearing to November 28, 2017, to allow the project applicant additional time to conduct an updated noise study. Following the City Council meeting, staff requested that the project applicant conduct a Traffic Assessment of the immediate area to address concerns raised during the administrative hearing. To accommodate the additional request, the administrative hearing was deferred to the December 12, 2017, City Council Meeting.

The purpose of this Supplemental Memorandum is to provide the Council with information on the updated noise and traffic studies.

ANALYSIS

In response to the direction given at the October 24, 2017, City Council meeting, three additional reports have been completed for the project. The reports include an updated noise report prepared by the applicant's consultant, a second noise study prepared for the appellant, and a Traffic Assessment prepared for the applicant in consultation with the City. These additional studies are summarized below.

Applicant's Updated Noise Report with On-Site Ambient Noise Measurements

At the administrative hearing on October 24, 2017, the City Council was concerned with reliance on the assumed General Plan's noise level for the project site without actual noise measurement to verify the noise level at the project site. In response, Mei Wu Acoustics (MWA, the project applicant's noise consultant), prepared an updated noise report dated December 4, 2017 (Attachment A). Council requested a noise report with measurements of existing on-site ambient noise levels and reevaluation of project noise impacts based on measured levels instead of the estimated noise levels used in the original December 2016 noise report. MWA measured on-site ambient noise from Saturday, October 28 to Tuesday, October 31, 2017, and found ambient noise levels on the site range from 62.6 to 67.8 dBA DNL. Ambient noise ranges from 67.8 dBA DNL at the northern property line adjacent to Woodard Road to 62.6 – 62.9 dBA DNL at the residential property line to the east of the site adjacent to first and second residential buildings on Starview Drive at a height of 15 feet.

MWA then reevaluated the noise impacts of the project based on the City's performance standards in Section 20.40.600(B) of the Municipal Code and Envision San José 2040 General Plan Policies EC-1.1, EC-1.2 and EC-1.3, which state the following:

- Zoning Code Section 20.40.600(B): The sound pressure level generated by any use or combination of uses on a property shall not exceed the decibel levels indicated in Table 20-105 at any property line, except upon issuance and in compliance with a Conditional Use Permit as provided in Chapter 20.100.

Table 20-105 Noise Standards	
	Maximum Noise Level in Decibels at the Property Line
Commercial use adjacent to a property used or zoned for residential purposes	55
Commercial use adjacent to a property used or zoned for commercial or other non-residential purposes	60

- General Plan Policy EC-1.1 provides land use compatibility guidelines for environmental noise based on exterior noise levels. Development of commercial projects is considered normally acceptable where the daynight average noise level (DNL) is below 70 dBA DNL.

- General Plan Policy EC-1.2 requires that project-generated noise not increase the existing day-night average noise level (DNL) by more than 5 dBA where the level would remain normally acceptable, or 3 dBA where the level would fall into the conditionally acceptable category.
- General Plan Policy EC-1.3 requires that project-generated noise levels be less than 55 dBA DNL at adjacent residential property lines.

Based on the updated noise measurement, the updated noise study proposed additional project design to reduce the project noise level to meet the Zoning Code and General Plan requirements. The updated noise study recommends the following changes to the project design:

1) The addition of a vinyl sound barrier at the exit of the car wash.
2) The selection of an unspecified, quieter car wash dryer system with noise levels equivalent to 79 dBA at 20 feet from the car wash exit instead of a Ryko-3 Fan Slimline Dryer assumed in the December 20, 2017 noise report.
3) An increase in the height of the sound wall at the trash enclosure from 8 feet to 12 feet.

Based on these changes to the project design, MWA found that the project would comply with the performance standards in the Municipal Code and policies in the Envision San José 2040 General Plan. Specifically:

- San José Municipal Code: Noise generated by the project would be 55 dBA or less at the nearest residential property line.
- General Plan Policy EC-1.2: MWA found operation of the car wash would increase ambient noise levels by 0.1 dBA DNL, which is less than the threshold of significance of an increase of 3 dBA DNL in areas with ambient noise levels in the "Conditionally Acceptable" category according to Table EC-1 of the General Plan.
- General Plan Policy EC-1.3: MWA found that project-generated noise would not exceed 55 dBA DNL at any adjacent residential property line. Operational noise would range from 49.9 to 52.6 dBA DNL at the eastern property line adjacent to the residences on Starview Drive assuming the addition of the vinyl noise barrier at the car wash exit, the use of the quieter dryer, and the increased height for the noise barrier around the trash enclosure.

Appellant's Updated Noise Report from Illingworth & Rodkin, Inc.

On November 27, 2017, the Appellant submitted an updated noise report prepared by Illingworth & Rodkin, Inc. (IW) dated November 20, 2017 (Attachment B). IW measured long-term ambient noise on the site from Thursday, November 9 to Monday, November 13, 2017 at two locations: the eastern property line of the project adjacent to the first and second residences on Skyview Drive (roughly the same location as MWA) and at the second story of the second residence on Starview Drive overlooking the project site. IW found ambient noise at the eastern property line is 65 to 67 dBA DNL and 61 to 63 dBA DNL at the second story of the second residence on Starview Drive.

IW then conducted separate analysis of car wash noise for consistency with the City's Municipal Code and Envision San José 2040 General Plan Policies EC-1.2 and EC-1.3, but did not evaluate the changes to the project assumed in the updated December 2017 MWA report described above. Using

their own ambient noise measurements, IW evaluated three car wash dryer types: the Ryko-3 Slimline dryer evaluated in the original MWA noise report from December 2016, a quieter dryer system (AeroDry Systems), and a louder dryer system (Mark VII AquaDri F-40). The analysis included the same project design as the December 2016 MWA report and made the following findings:

- San José Municipal Code: Noise generated by all three dryer types would exceed 55 dBA at the eastern residential property line.
- General Plan Policy EC-1.2: IW found the Ryko-3 Slimline dryer would result in an increase in ambient noise between 2 to 3 dBA DNL at the eastern residential property line adjacent to the first residence on Skyview Drive when evaluating the ambient noise and a day by day basis, but would only result in an increase of 2 dBA DNL if ambient noise levels of the entire Thursday – Monday monitoring period are accounted for. The quieter AeroDry dryer would only result in an increase 1 dBA DNL at this location, while the louder Mark VII dryer would result in an increase of 3 to 4 dBA DNL.
- General Plan Policy EC-1.3: IW found the Ryko-3 Slimline dryer would exceed the 55 dBA DNL threshold at the second story of the first and second residences on Starview Drive by 1 to 6 dBA DNL, but the quieter AeroDry dryer would not exceed 55 dBA DNL at any of the residences along Starview Drive.

Both the quieter, unspecified dryer in the December 2017 MWA report and the quieter AeroDry dryer evaluated in the November 2017 IW report have similar characteristics: both have noise levels of about 79 dBA at a distance of 20 feet from the exit of the car wash. Based on both the MWA and IW reports, the proposed change to a quieter car wash dryer will result in a project that does not exceed any of the noise thresholds in General Plan Policies EC-1.2 and EC-1.3, and therefore the project would not result in a significant noise impact pursuant to the California Environmental Quality Act (CEQA).

The quieter dryer would still exceed the performance standard of 55 dBA at the nearest residential property line by 2dBA. Projects that exceed this 55 dBA level must obtain a Special Use Permit and make certain findings, which are already included in the project's Conditional Use Permit. Pursuant to City Policy, this performance standard is not used for determining a significant impact under CEQA. The proposed vinyl sound barrier at the exit of the car wash would reduce noise levels to 55 dBA at the eastern residential property line.

Based on the project applicant's updated noise report and appellant's noise report, staff recommends adding a condition of approval requiring the quieter dryer, vinyl sound barrier, and 12 foot soundwall, which will allow the project to meet the Zoning Code and General Plan noise requirements.

Traffic Assessment prepared for the Applicant

In coordination with and at the request of City staff, TJKM Transportation Consultants prepared a traffic report to evaluate the impacts of the proposed project and the effects of the project on the adjacent Farnham School operations during the morning peak hour (see Attachment C). The report

concluded the project did not have a significant traffic impact at the intersection of Bascom Avenue and Woodard Road per the City's Level of Service Policy, Council Policy 5-3.

The report also concluded the proposed project expansion would not have any effect on school operations. However, school operations were evaluated during the morning drop off, and the report documented several items. City staff will be coordinating with other departments and the Council office to develop recommendations based on the traffic report. Two separate traffic studies were prepared and are posted on the City's website.

Supplemental Traffic Assessment prepared for the Appellant

The appellant's traffic consultant, Smith Engineering and Management, prepared a supplemental memo noting his observations of the site operations during the AM peak hours (see Attachment D). The supplemental memorandum notes the complexities of the existing uses in the vicinity and that the proposed project would exacerbate the existing traffic issues. The memorandum acknowledges the existing traffic operational issues with the adjacent school. As noted above, staff will develop recommendations to address the traffic issues resulting from the school. The memorandum notes operational issues with the proposed parking space locations and the depth of stalls. Staff evaluated the proposed parking based on the requirements of the Zoning Code, which requires a total of 19 spaces. The project includes 21 parking spaces, including eight fuel pump parking spaces. The inclusion of the eight fuel pump parking spaces is common practice when calculating parking for gas stations with convenience stores, since it is expected that these spaces would also serve the convenience store when patron fill their tanks. The spaces located along the drive isle meet the required stall depth of 18 feet, with an eight-inch overhang over the wheel stop. Staff will ensure that the access easement maintains functionality through the conformance review process.

/s/
ROSALYNN HUGHEY, INTERIM DIRECTOR
Planning, Building and Code Enforcement

For questions please contact Steve McHarris, Planning Official, at (408) 535-7819.

Attachments: Attachment A – Applicant Noise Study dated December 4, 2017
Attachment B – Appellant Noise Study dated November 20, 2017
Attachment C – Applicant Traffic Analysis dated November 21, 2017
Attachment D – Appellant Supplemental Traffic Memo dated December 5, 2017

Mei Wu Acoustics

Experts in acoustics, noise and vibration

To:	**Tony Andary**	**Andarys Enterprise, Inc**	**aandary@sbcglobal.net**
From:	**William Rosentel**	**Mei Wu Acoustics**	**william@mei-wu.com**
	Mei Wu	**Mei Wu Acoustics**	**meiwu@mei-wu.com**
Date:	**December 4, 2017**		
Subject:	**Andoil Bascom Car Wash Noise Study**		
	MWA Project – 15059C		

Mei Wu Acoustics is providing acoustical consulting services to Andarys Enterprise regarding the proposed development at 3702 Bascom Ave, San Jose, CA 95124.

The proposed project is compliant with the policies of the San Jose General Plan (EC-1.1, EC-1.2, and EC-1.3) and Municipal Code.

Changes from the previous study are:

- **Addition of a second sound barrier at the exit of the carwash**
- **Reduction in the proposed carwash noise levels by reselection of the dryer system**
- **Increased height of trash enclosure from 8ft to 12ft**

1. Project and Site Description

The commercial convenience store and carwash will be a two-story building, situated at the corner of Bascom Ave and Woodard Road in San Jose. The nearest residences are located approximately 75 feet from the façade of the carwash exist to the north-east and approximately 60 feet from the façade of the carwash entrance. Planned operational hours for the carwash are from 7AM to 9PM.

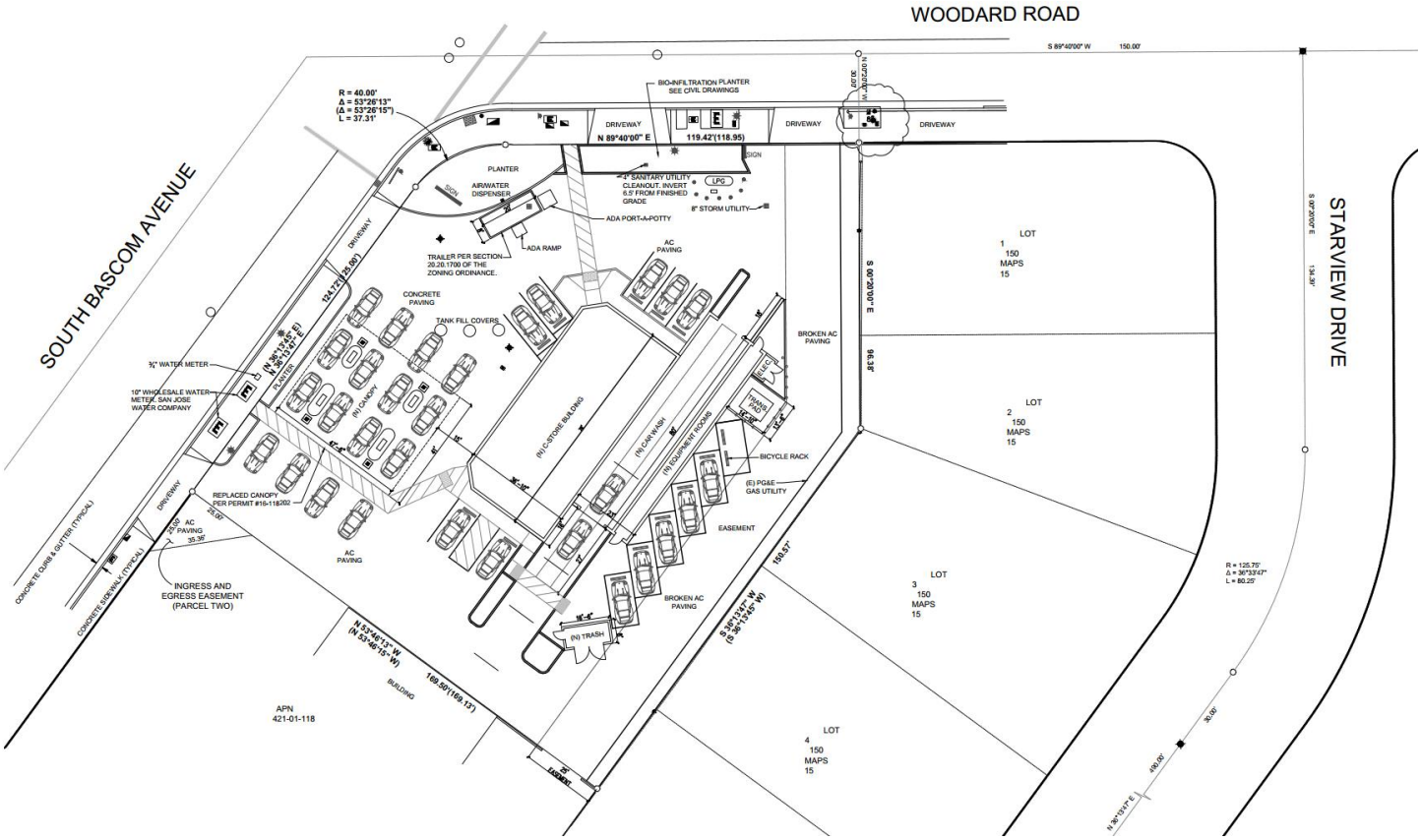

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Figure 1: Proposed Site Plan

2. Acoustic Criteria – San Jose General Plan and Municipal Code

The relevant policies of the San Jose General Plan are listed below:

Policy EC-1.1 provides land use compatiiblity guidelines for environmental noise based on exterior noise levels. Development of commercial projects is considered normally acceptable where the daynight average noise level (DNL) is below 70 dBA DNL.

Policy EC-1.2 requires that project-generated noise not increase the existing day-night average noise level (DNL) by more than 5 dBA where the level would remain normally acceptable, or 3 dBA where the level would fall into the conditionally acceptable category.

Policy EC-1.3 requires that project-generated noise levels be less than 55 dBA DNL at adjacent residential property lines.

The relevant section of the San Jose Municipal Code is listed below:

Section 20.40.600 Performance Standards

B. …the following specific standards shall apply in the Commercial Zoning Districts:

2. Noise

The sound pressure level generated by any use or combination of uses on a property shall not exceed the decibel levels indicated in Table 20-105 at any property line, except upon issuance and in compliance with a Conditional Use Permit as provided in Chapter 20.100.

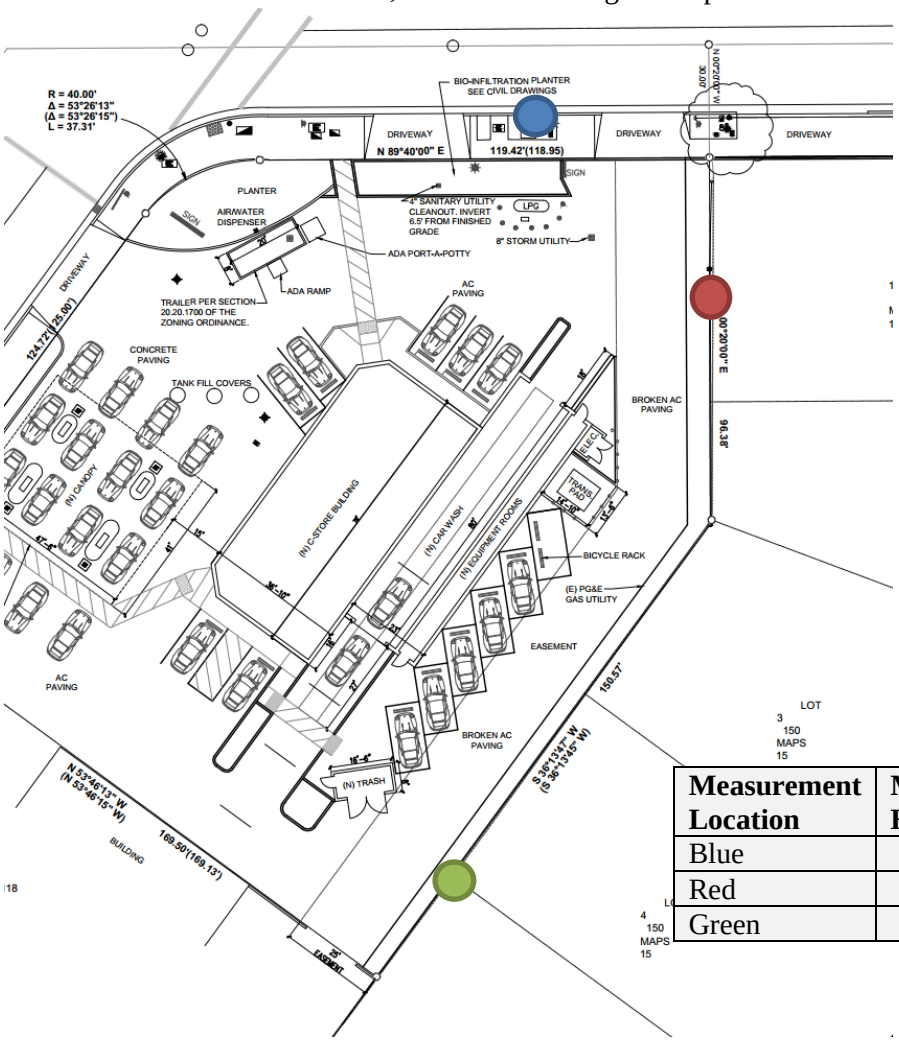
Table 20-105
Noise Standards

	Maximum Noise Level in Decibels at the Property Line
Commercial use adjacent to a property used of zoned for residential purposes	55
Commercial use adjacent to a property used or zoned for commercial or other non-residential purposes	60

2.1. Existing Noise Environment

To determine the existing ambient noise levels at the project site, MWA performed noise measurements for a continuous period of four days, from Saturday 10/28 to Tuesday 10/31, which included the morning hours on Sunday 10/29.

Figure 2 shows the measurement locations; measurement heights are provided in Table 1.



Measurement Location	Measurement Height
Blue	10’
Red	15’
Green	15’

Figure 2: Measurement Locations and Heights

Measurements were conducted at the property lines at elevated heights to simulate second story receivers. The Blue location was mounted on a street light pole, while the red and green locations were mounted on telephone line poles. Measurements were conducted with CESVA SC160 Type II Sound Level Meters calibrated with a Norsonic Type 1251 Sound Calibrator on-site prior to measurement.

The existing noise environment at the site is dominated by traffic on Bascom Ave and Woodard Road. The table below provides the day-night average noise levels of each location for both measurement periods. The rightmost column in the table is the quietest hour in the measurement period that occurred during the carwash hours of operation (7AM-9PM).

Measurement Location	**Day-night Average Noise Level (DNL) [dBA DNL]**	**Quietest Operational Hour Measured (7AM-9PM) [dBA Leq 1-Hr]**
Blue	*Sat-Sun: [N/A][1]* *Mon-Tues: 67.8*	*Sat-Sun: [N/A][1]* *Mon-Tues:66.9 (7AM-8AM)*
Red	*Sat-Sun: 62.9* *Mon-Tues: 62.6*	*Sat-Sun: 55.8 (7AM-8AM)* *Mon-Tues:60.5 (7PM-8PM)*
Green	*Sat-Sun: 67.2* *Mon-Tues: 66.6*	*Sat-Sun: 60.4 (7AM-8AM)* *Mon-Tues: 63.6 (1PM-2PM)*

Table 1: Existing Noise Environment

The ambient measurements show that the day-night average noise level (DNL) ranges from 62.6 dBA DNL at the Red measurement location to 67.8 dBA DNL at the Blue measurement location.

Note: A noise study was also conducted for this project by Illingworth & Rodkin (I&R) dated November 20th, 2017. Noise measurements were also conducted for that report, two weeks after the measurements documented above. The Red measurement location in this report coincides with the LT-1 location in the I&R report; both meters were mounted on the same telephone pole. The I&R report found the DNL at that location to range between 65 and 67 dBA, slightly above the 62.9 dBA measured in this report. These two measurements are consistent as the noise environment generated primarily by traffic is expected to vary by a few decibels on any given day.

2.2. Summary of Noise Criteria

Land-Use Compatibility (Policy EC-1.1)

Based on noise measurements, the existing noise level at the site is below 70 dBA DNL and thus falls in the 'normally acceptable' category for commercial developments.

Project-Generated Noise (Policy EC-1.2, 1.3)

The project generated noise shall not increase the ambient at the north-east property plane (Red location) by more than 5 dBA DNL and at the northern (Blue location) and south-east property planes (Green location) by more than 3 dBA DNL.

The existing noise environment already exceeds the 55 dBA DNL limit by at least 7.6 dBA DNL. However, project-generated noise levels should not exceed 55 dBA DNL excluding existing noise levels.

San Jose Municipal Code

No use or combination of uses shall result in a sound pressure level at residential property lines that exceeds 55 dBA.

[1] Noise measurements at the Blue location were conducted from Monday 10/30 to Tuesday 10/31 only.

3. Analysis of Project Generated Noise Levels

MWA has performed many noise studies for carwashes in the neighboring cities and counties. The sound field around carwash entrances and exits have been studied through manufacturer noise levels and field measurements. The project proposes a carwash dryer system that will not exceed 79 dBA (up to 79.4 dBA) as measured 20 feet from the exit, in a free field.

The noise level of 79 dBA would only occur when the carwash dryers (the loudest component) are in operation. When not actively drying a car, the carwash noise levels will be lower. For the DNL calculations, we conservatively assume that the dryers will run continuously from 7AM-9PM, which would be equivalent to drying 630 cars per day.

Sound barriers will be utilized to reduce the noise levels at the property planes. These barriers will be monolithic (without any major holes or gaps) and will be constructed of materials that satisfy the requirements for acoustics barriers.

The following five noise barriers are proposed to bring the project into compliance with the policies of the San Jose General Plan and Municipal Code:

Concrete Masonry Unit (CMU) Barriers

1. The project plans the construction of an 18 ft long, 12 ft high barrier at the exit of the carwash, blocking the eastern property line.

2. A trash enclosure will be constructed to conceal the dumpster onsite. This enclosure will be 12 ft tall, 16’ 6” in length and positioned such that it breaks the line of sight from the carwash entrance to one of the residential properties to the southeast. This barrier will provide insertion loss for receivers to the southeast.

3. An 11 ft long, 12 ft high barrier will be constructed at the entrance of the carwash, blocking the eastern property line. The combination of this barrier and the trash enclosure completely blocks line of sight from the car wash entrance to the southern residential buildings.

4. There is an existing CMU barrier that blocks the line of sight between the carwash entrance and the commercial property to the south. The height of this barrier is approximately 6 feet.

Vinyl Barrier

5. A 12 ft tall, retractable vinyl sound shield (equivalent to the Airlift XRS series) will be installed at the exit façade of the carwash. This shield will deploy during dryer operation and fully shield the eastern property line. The surface density of the vinyl shall be no less than 1 lb/sqft[2] to provide adequate transmission loss to serve as an acoustic barrier.

[2] MWA has reviewed the transmission loss test report (Cedar Knolls: Test No. 8204.16) for 1 lb/sqft vinyl and calculated the insertion loss of the exit vinyl barrier with a surface density of 1 lb/sqft.

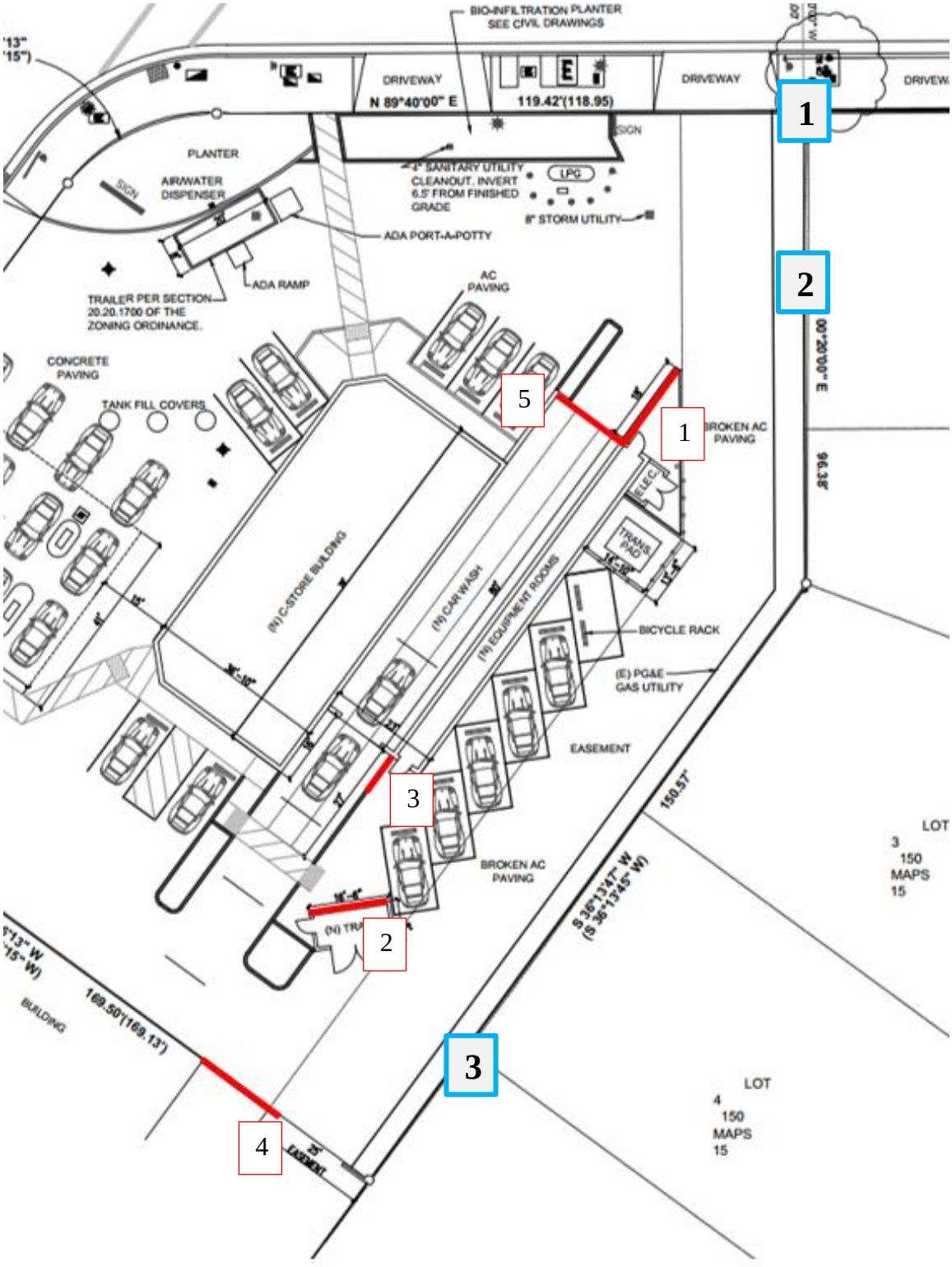


Figure 3: Proposed Noise Barriers (Red Lines, labelled by Red Boxed Numbers) and Receiver Locations (Blue Boxed Numbers)

Sound pressure levels at the property planes have been calculated, taking into account barrier attenuation, and are provided in Table 3 below. The calculations locations are numbered in Figure 3 above. The table includes the sound pressure level at the nearest location on the property line adjacent to a receiver, at a height of 15 feet to simulate a second-story receiver at locations 2 and 3. Location 1 was calculated with a standard receiver height of 5 feet as there are no buildings at that location. We have also calculated the resulting DNL considering the measured existing noise environment as one source, and the carwash as another.

Calculation Location	Receiver Distance [ft]	Calculated Noise Level During Operation [dBA]	Calculated DNL due to Carwash Operation [dBA]	Existing DNL [dBA]	Combined DNL – Existing plus Carwash [dBA]	Change in DNL [dBA]
1. North Plane Woodard Road (Edge of Sidewalk)	*75*	*55.0*	*52.9*	*67.8*	*67.9*	*+0.1*
2. North-east Plane (Red Measurement Location)	*50*	*49.9*	*47.6*	*62.6*	*62.7*	*+0.1*
3. South-east Plane (Green Measurement Location)	*60*	*52.6*	*50.6*	*66.6*	*66.7*	*+0.1*

Table 3: Project-Generated Noise Levels at Property Planes

5. Conclusion

According to the San Jose Municipal Code, the maximum allowable noise levels at the property lines of residential properties is 55 dBA. However, the existing noise environment constantly exceeds this level; the quietest measured level was 55.8 dBA on Sunday morning from 7AM-8AM at the height and location on the property line closest to the nearest potential receiver. Nonetheless, Table 3 shows that project generated noise levels at the property planes will be 55 dBA or less (excluding existing noise levels).

Noise impact of new land developments on residential land uses is considered significant (San Jose General Plan Goal EC-1.2) if the project would cause the day-night average noise level (DNL) at noise sensitive receptors to increase by five (5) dBA DNL or more where noise levels would remain in the "Normally Acceptable" level of 70 dBA DNL and three (3) dBA DNL where noise levels would fall into the "Conditionally Acceptable" category.

Based on the results of calculations in Section 4; the DNL at the project site would increase by 0.1 dBA DNL at most. This increase is much less than the 5 or 3 dBA DNL increase specified in the San Jose General Plan Goal EC-1.2, therefore the noise impact of the proposed project is less than significant.

Additionally, the project-generated noise will not exceed 55 dBA DNL at any property plane and is consistent with General Plan Policy EC-1.3.

* * *

This concludes our environmental noise impact study for the Andoil Bascom Ave Car Wash project. Please contact Mei Wu Acoustics if you have any questions or comments.

Appendix A: Applicable Noise Codes and Standards

City of San Jose General Plan

San Jose General Plan, Chapter 3, Goal EC-1 Community Noise Levels and Land Use Compatibility, contains details of the acceptable limits of noise hazards. For this project the applicable noise policies are paraphrased as follows:

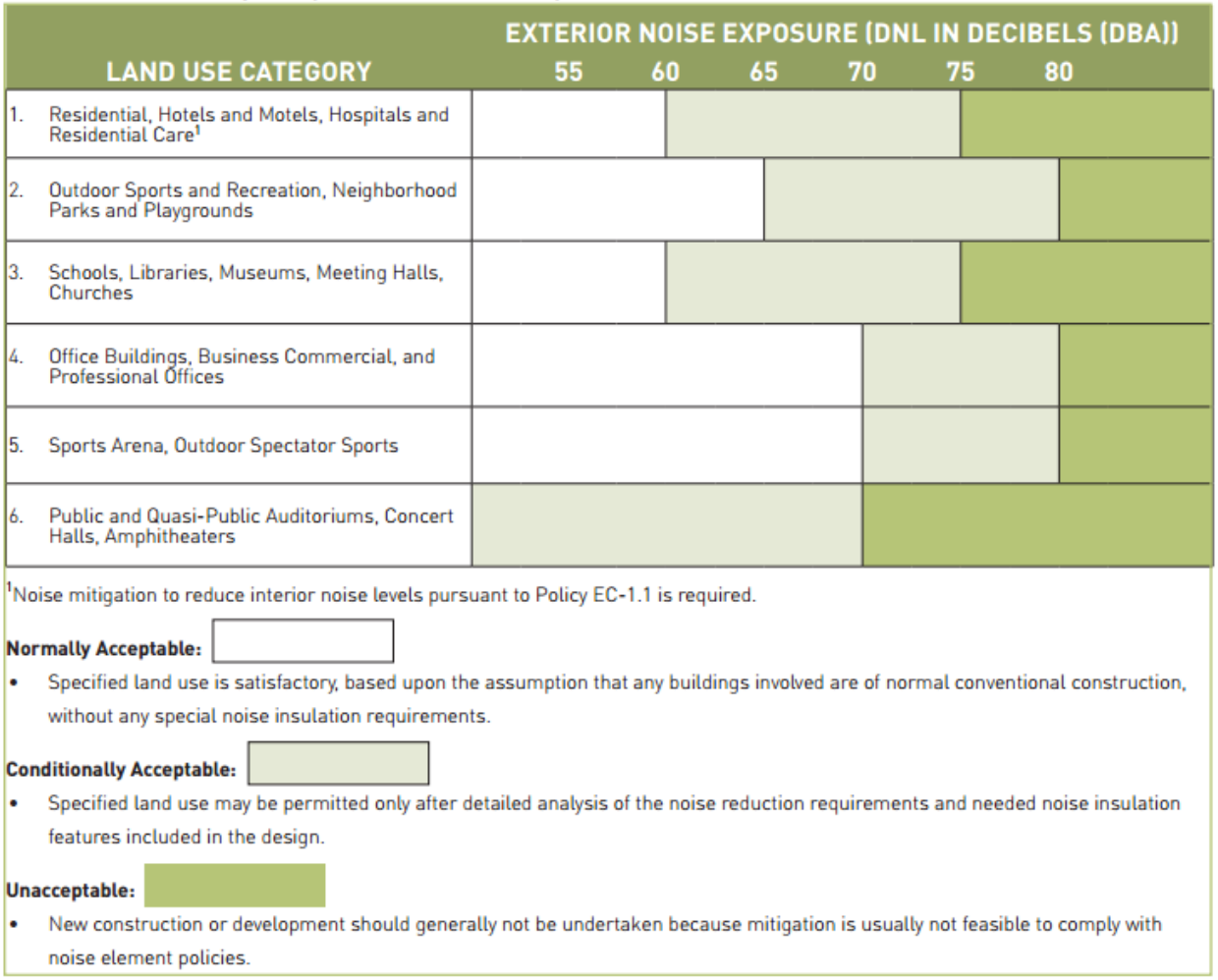
EC-1.1 *Locate new development in areas where noise levels are appropriate for the proposed uses. Consider federal, state and City noise standards and guidelines as a part of new development review. Applicable standards and guidelines for land uses in San José include:*

Exterior Noise Levels

The City's acceptable exterior noise level objective is 60 dBA DNL or less for residential and most institutional land uses (Table EC-1). The acceptable exterior noise level objective is established for the City, except in the environs of the San José International Airport and the Downtown, as described below:

- *For new multi-family residential projects and for the residential component of mixed-use development, use a standard of 60 dBA DNL in usable outdoor activity areas, excluding balconies and residential stoops and porches facing existing roadways. Some common use areas that meet the 60 dBA DNL exterior standard will be available to all residents. Use noise attenuation techniques such as shielding by buildings and structures for outdoor common use areas. On sites subject to aircraft overflights or adjacent to elevated roadways, use noise attenuation techniques to achieve the 60 dBA DNL standard for noise from sources other than aircraft and elevated roadway segments.*
- *For single family residential uses, use a standard of 60 dBA DNL for exterior noise in private usable outdoor activity areas, such as backyards.*

Table EC-1: Land Use Compatibility Guidelines for Community Noise in San José



EC-1.2 *Minimize the noise impacts of new development on land uses sensitive to increased noise levels (Categories 1, 2, 3 and 6) by limiting noise generation and by requiring use of noise attenuation measures such as acoustical enclosures and sound barriers, where feasible. The City considers significant noise impacts to occur if a project would:*

- *Cause the DNL at noise sensitive receptors to increase by five dBA DNL or more where the noise levels would remain "Normally Acceptable"; or*
- *Cause the DNL at noise sensitive receptors to increase by three dBA DNL or more where noise levels would equal or exceed the "Normally Acceptable" level.*

EC-1.3 *Mitigate noise generation of new nonresidential land uses to 55 dBA DNL at the property line when located adjacent to existing or planned noise sensitive residential and public/quasi-public land uses.*

City of San Jose Municipal Code

The Bascom Valero Car Wash is zoned in a Commercial Neighborhood (CN) District and is subject to the following paraphrased section of the San Jose Zoning Code:

20.40.600 Performance Standards

B. …the following specific standards shall apply in the Commercial Zoning Districts:

2. <u>Noise</u>

The sound pressure level generated by any use or combination of uses on a property shall not exceed the decibel levels indicated in Table 20-105 at any property line, ***except upon issuance and in compliance with a Conditional Use Permit as provided in Chapter 20.100.***

Table 20-105
Noise Standards

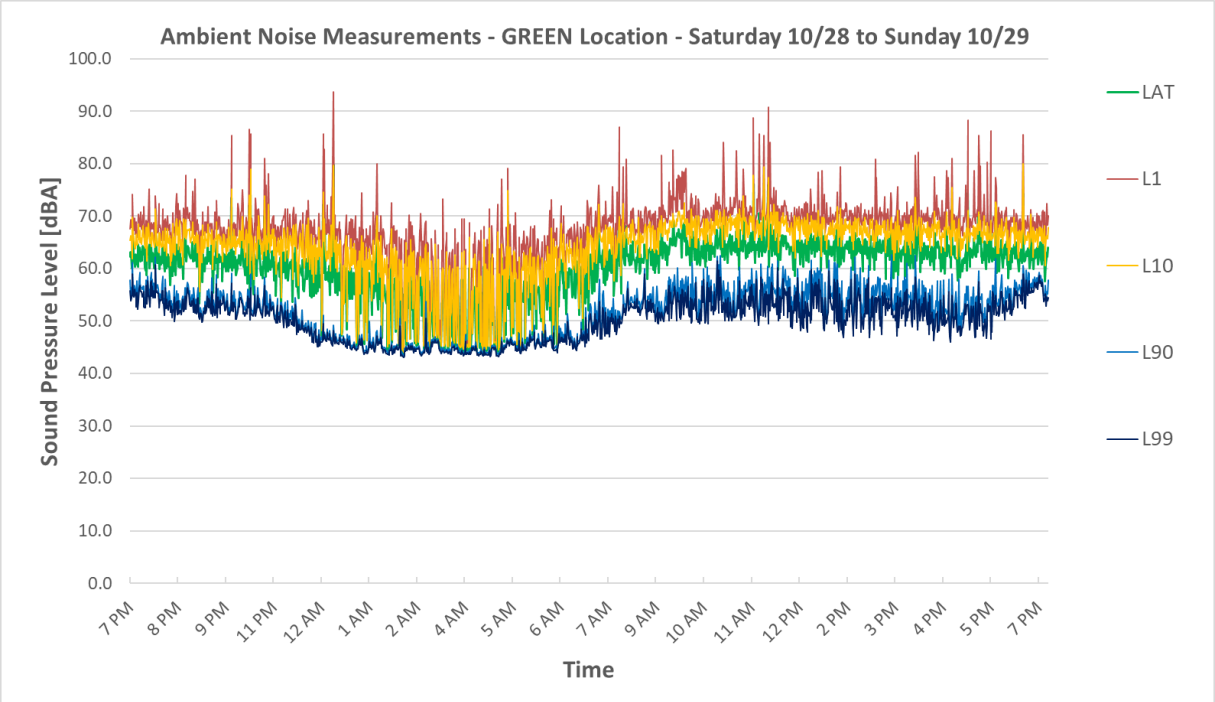
	Maximum Noise Level in Decibels at the Property Line
Commercial use adjacent to a property used of zoned for residential purposes	55
Commercial use adjacent to a property used or zoned for commercial or other non-residential purposes	60

Appendix B: Acoustic Terminology

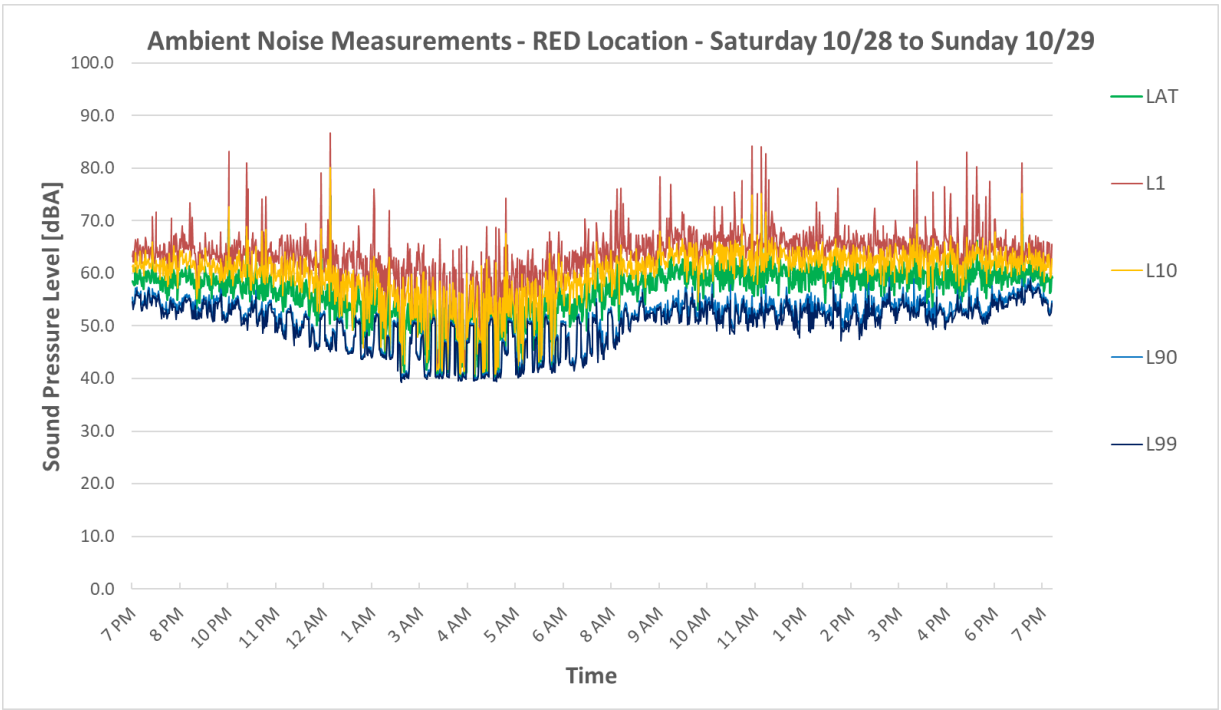
Definitions for acoustic terminology that may be found throughout this report are as follows:

Term	Description
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals.
Frequency, HZ	The number of complete pressure fluctuations per second above and below atmospheric pressure.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter deemphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted, unless reported otherwise.
L_1, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 pm to 10:00 pm and after addition of 10 decibels to sound levels measured in the night between 10:00 pm and 7:00 am.
Day/Night Noise Level, DNL	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 pm and 7:00 am.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location. This is usually taken to be the lowest hourly L_{90} recorded during a 24-hour measurement period.

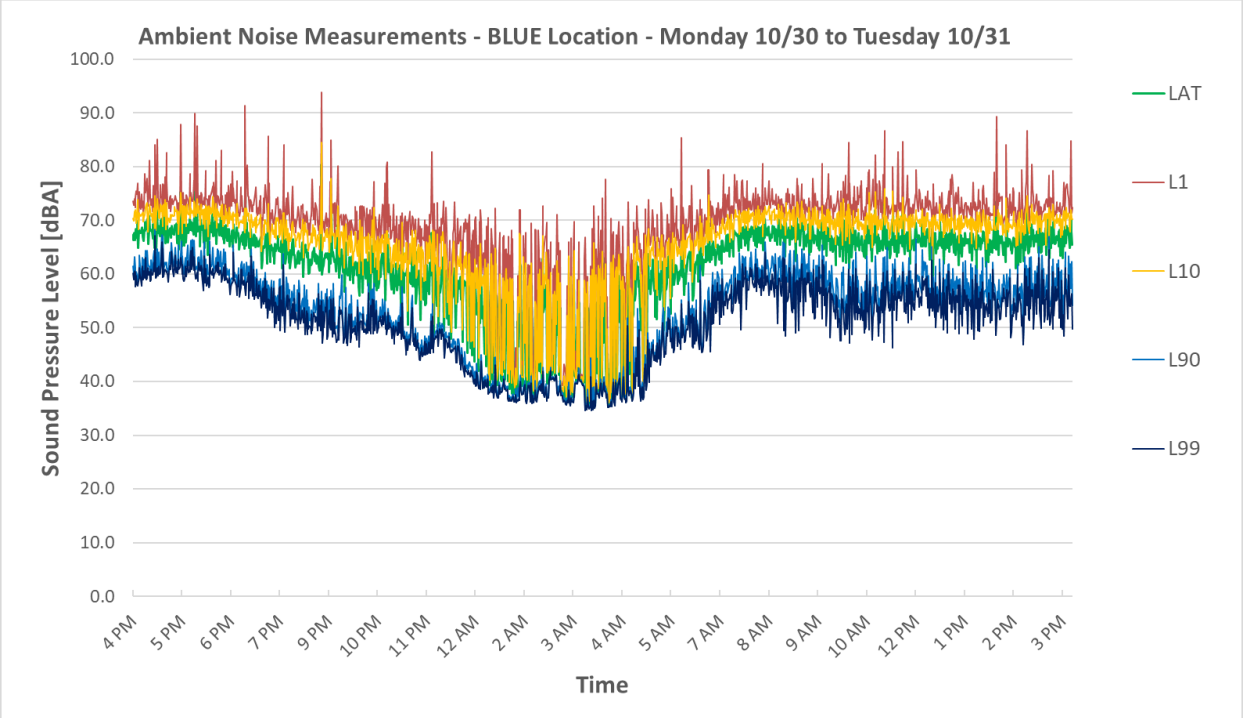
Appendix C: Existing Noise Environment Measurements



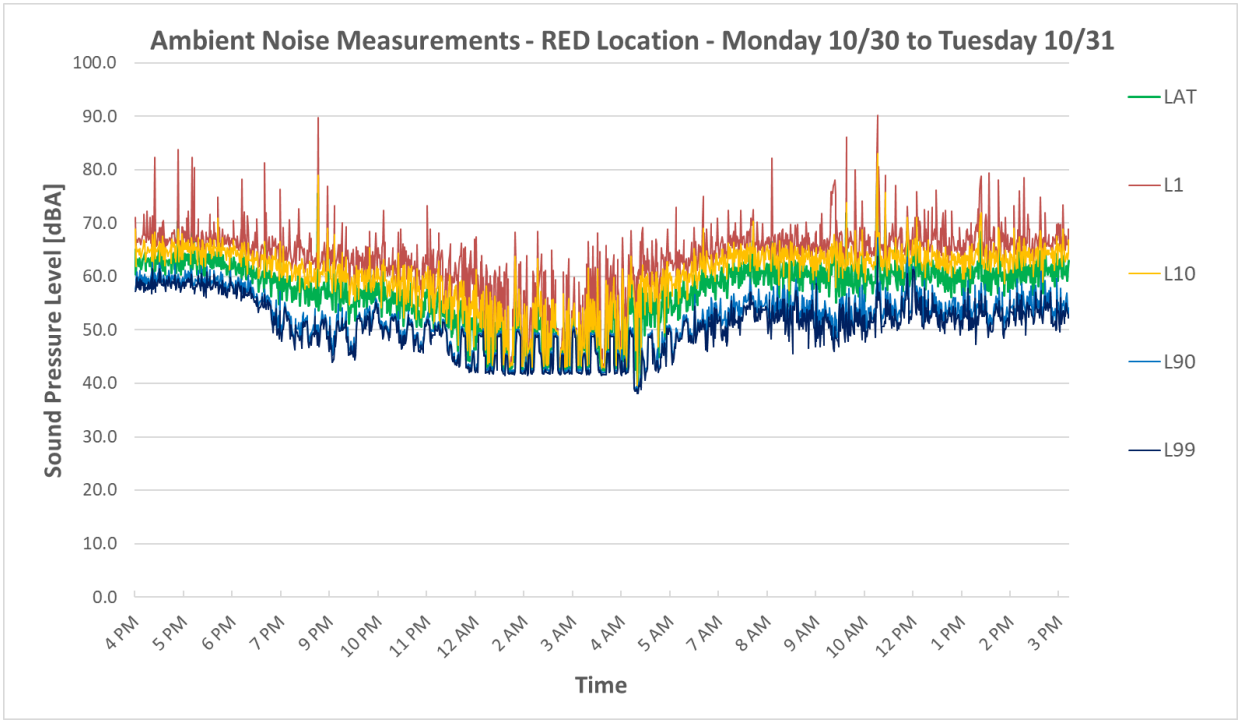
The day-night average noise level (DNL) at the green location from Saturday to Sunday was 67 dBA DNL. The quietest hourly average noise level (Leq 1-Hr) was 52 dBA from 3AM-4AM, and the loudest Leq 1-Hr was 67 dBA from 11AM-12PM.



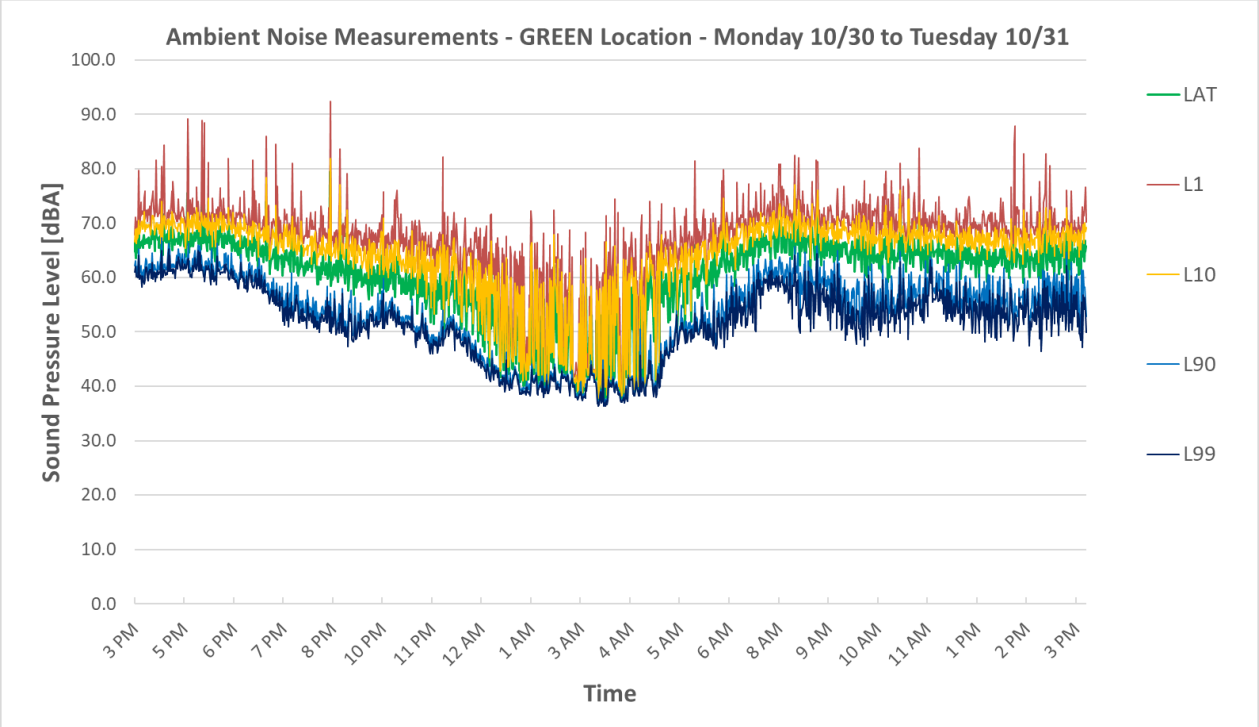
The day-night average noise level (DNL) at the Red location from Saturday to Sunday was 63 dBA DNL. The quietest hourly average noise level (Leq 1-Hr) was 50 dBA from 4AM-5AM, and the loudest Leq 1-Hr was 61 dBA from 12PM-1PM.



The day-night average noise level (DNL) at the Blue location from Monday to Tuesday was 68 dBA DNL. The quietest hourly average noise level (Leq 1-Hr) was 52 dBA from 3AM-4AM, and the loudest Leq 1-Hr was 69 dBA from 5PM-6PM.



The day-night average noise level (DNL) at the red location from Monday to Tuesday was 63 dBA DNL. The quietest hourly average noise level (Leq 1-Hr) was 49 dBA from 2AM-3AM, and the loudest Leq 1-Hr was 65 dBA from 11AM-12PM.



The day-night average noise level (DNL) at the red location from Monday to Tuesday was 67 dBA DNL. The quietest hourly average noise level (Leq 1-Hr) was 50 dBA from 3AM-4AM, and the loudest Leq 1-Hr was 68 dBA from 5PM-6PM.

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November 20, 2017

Mr. Ben Levinson,
Law Offices of Benjamin R. Levinson
46 N. Second Street, Suite A
Campbell, California 95008
VIA E-Mail: **ben@benlevinsonlaw.com**

SUBJECT: **Bascom Andoil Car Wash at 3702 S. Bascom Ave., San Jose, CA**
Independent Environmental Noise Assessment

Dear Mr. Levinson:
This report presents the results of Illingworth & Rodkin, Inc's (I&R) environmental noise assessment of the proposed carwash addition at the existing Andoil service station located at 3702 South Bascom Avenue in San Jose, CA performed at the request of the residential neighbors of the site. This study considers the equipment and noise mitigations analyzed in a previous assessment of noise from the carwash commissioned by the applicant[1], the findings of an ambient noise monitoring survey conducted by I&R at the residential property line shared with the Andoil site, the results of computer noise modeling of the levels produced by the proposed carwash operations at adjacent noise sensitive residential uses, and the guidelines established by the City of San Jose's General Plan Noise Element and Zoning Code. Persons not familiar with environmental noise analysis are referred to Appendix A for additional discussion.

REGULATORY BACKGROUND

City of San José General Plan. The Environmental Leadership Chapter in the Envision San José 2040 General Plan sets forth policies with the goal of minimizing the impact of noise on people through noise reduction and suppression techniques, and through appropriate land use policies in the City of San José. The following policies are applicable to the proposed project:

EC-1.2 Minimize the noise impacts of new development on land uses sensitive to increased noise levels by limiting noise generation and by requiring use of noise attenuation measures such as acoustical enclosures and sound barriers, where feasible. The City considers significant noise impacts to occur if a project would:

- Cause the DNL at noise sensitive receptors to increase by five dBA DNL or more where the noise levels would remain "Normally Acceptable;" or
- Cause the DNL at noise sensitive receptors to increase by three dBA DNL or more where noise levels would equal or exceed the "Normally Acceptable" level.

EC-1.3 Mitigate noise generation of new nonresidential land uses to 55 dBA DNL at the property line when located adjacent to existing or planned noise-sensitive residential and public/quasi-public land uses.

[1] Mei Wu Acoustics (MWA) Noise Analysis (12/20/16) & Peer Review Response (10/23/17)

EC-1.6 Regulate the effects of operational noise from existing and new industrial and commercial development on adjacent uses through noise standards in the City's Municipal Code.

City of San José Municipal Code. The City's Municipal Code contains a Zoning Ordinance that limits noise levels at adjacent properties. The noise performance standards in Chapter 20.40.600 of this code states that sound pressure levels generated by any use or combination of uses at a Commercial use adjacent to a property used or zoned for residential purposes shall not exceed a maximum level of 55 dBA at the shared property line, except upon issuance and in compliance with a Conditional Use Permit.

EXISTING NOISE ENVIRONMENT

The project site is located at the southeast corner of the intersection South Bascom Avenue and Woodard Road. Two story multi-family residences share a property line with the project site to the west and a retail use (Bascom Liquor & food) shares the project site to the south. Additional multifamily residential uses are located to the north across Woodard Road and to the east across South Bascom Avenue. Farnham Elementary School is located northwest of the site, beyond the Woodard Road/Starview Drive intersection. The closest noise sensitive receptors to the proposed car wash are the two story multi-family residences on the western property line.

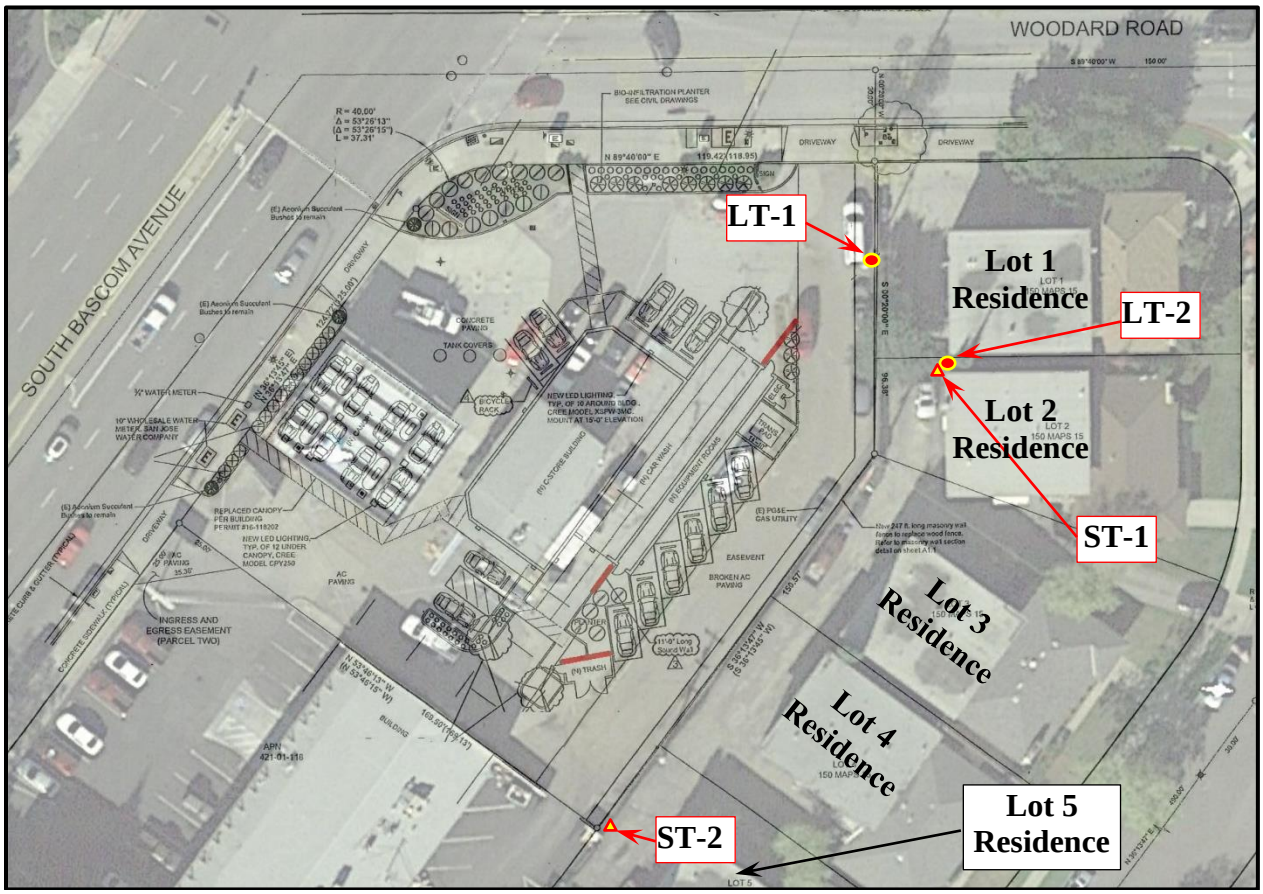


Figure 1: Project Site, Vicinity and Noise Measurement Locations.

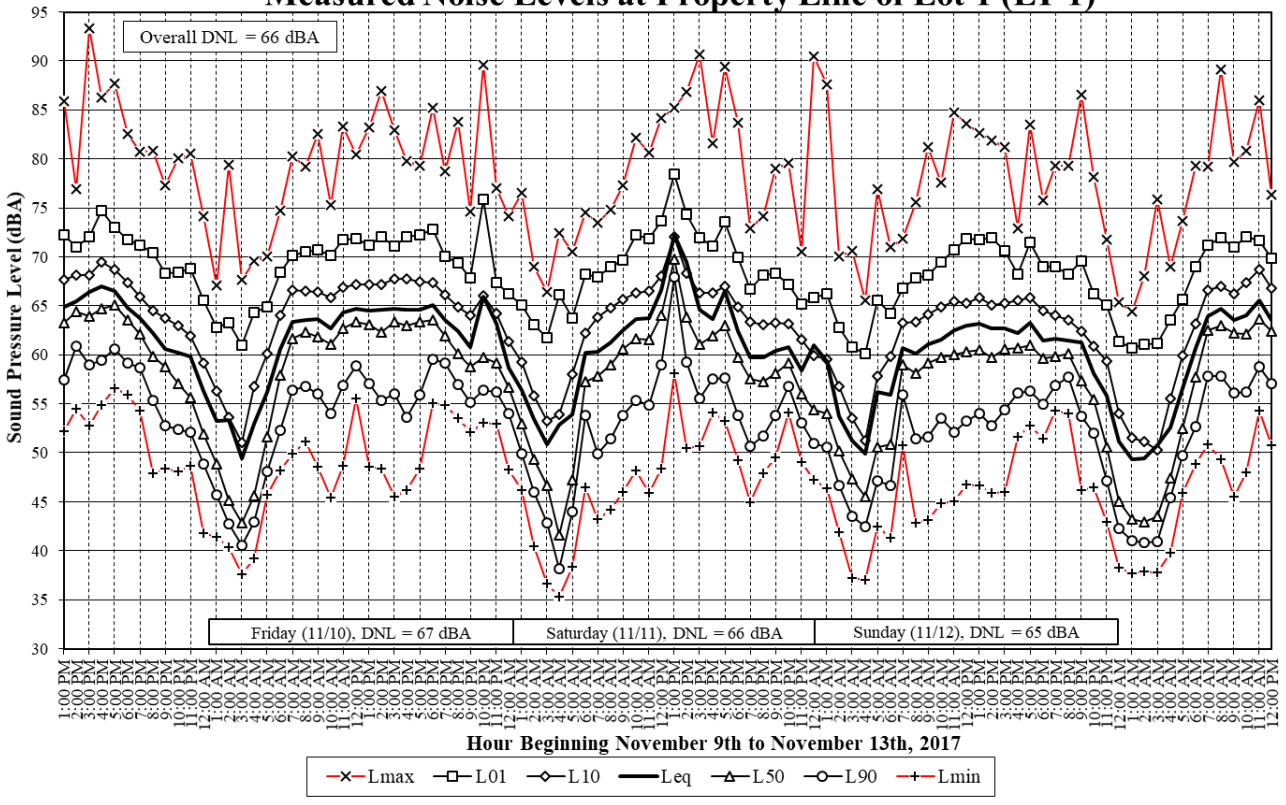
The noise environment in the vicinity of the site is dominated by local and distant traffic, with noise from the existing gas station operations, elementary school related activities, and mechanical noise

from the adjacent retail store also contributing to the noise environment. A noise monitoring survey was undertaken between Thursday, November 9th and Monday, November 13th, 2017 to quantify ambient weekday and weekend noise levels on the western property line and at the upper floor facades of the adjacent residences project. The noise monitoring survey included two long-term (LT) noise measurements and two short-term (ST) noise measurements. The measurement locations are shown in Figure 1, above.

All noise measurements were made with Larson Davis Model 820 Integrating Sound Level Meters set at "slow" response. The sound level meters were equipped with a G.R.A.S. Type 40AQ ½ - inch random incidence microphones fitted with windscreens. All instrumentation used meets the requirements of the American National Standards Institute (ANSI) SI.4-1983 for Type 1 use. The sound level meters were calibrated prior to the noise measurements using a Larson Davis Model CAL200 acoustical calibrator. The response of the system was checked after each measurement session and was always found to be within 0.2 dBA.

The first long term measurement (see LT-1 on Figure 1) was conducted on a utility pole above the western project property line shared with the residence on Lot 1 over a 96-hour weekday/weekend period between 1:00 p.m. on Thursday, November 9th and 1:00 p.m. on Monday, November 13th, 2017. Noise levels measured at this site were produced by existing gas station activities, vehicles parking on the gas station side of the property line, and traffic on S. Bascom Avenue. The hourly trend in noise levels at this location, including the energy equivalent noise level (L_{eq}), maximum (L_{max}), minimum (L_{min}), and the noise levels exceeded 1, 10, 50, and 90 percent of the time (indicated as L_{01}, L_{10}, L_{50}, and L_{90}) are shown on Chart 1.

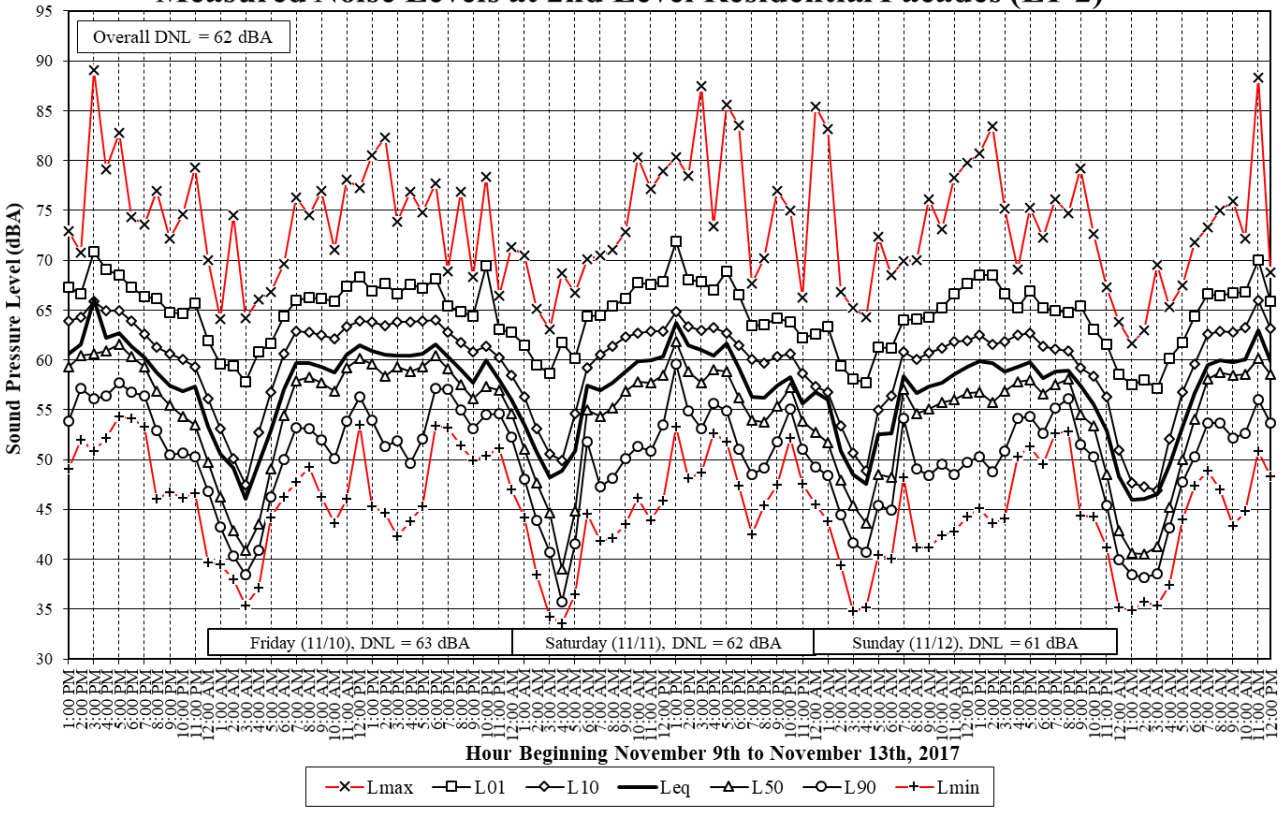
Chart 1:
Measured Noise Levels at Property Line of Lot 1 (LT-1)



A review of Chart 1 indicates that the average weekday noise levels on the property line of Lot 1 (LT-1) ranged from 61 to 67 dBA L_{eq} during the day, and 49 to 66 dBA L_{eq} at night, the average weekend noise levels ranged from 57 to 70 dBA L_{eq} during the day and 50 to 61 dBA L_{eq} at night. The calculated average day/night noise level (DNL) at the property line of Lot 1 ranged from 65 to 67 dBA, with an overall DNL of 66 dBA.

The second long-term measurement (see LT-2 on Figure 1) was conducted in a juniper tree situated between and at the setback of the facades of the residences on Lots 1 and 2. This measurement was made at approximately 16 feet above grade at the level of the upper floor windows of these homes. This measurement was also made over a 96-hour weekday/weekend period between 1:00 p.m. on Thursday, November 9th and 1:00 p.m. on Monday, November 13th, 2017. Noise levels measured at this site were also produced by existing gas station activities, vehicles parking on the gas station side of the property line, and traffic on S. Bascom Avenue. The hourly trend in noise levels at this location, including the energy equivalent noise level (L_{eq}), maximum (L_{max}), minimum (L_{min}), and the noise levels exceeded 1, 10, 50, and 90 percent of the time (indicated as L_{01}, L_{10}, L_{50}, and L_{90}) are shown on Chart 2.

Chart 2:
Measured Noise Levels at 2nd Level Residential Facades (LT-2)



A review of Chart 1 indicates that the average weekday noise levels between the upper facades of the Residences on Lots 1 and 2 (LT-2) ranged from 57 to 66 dBA L_{eq} during the day, and 46 to 60 dBA L_{eq} at night, the average weekend noise levels ranged from 56 to 64 dBA L_{eq} during the day and 48 to 58 dBA L_{eq} at night. The calculated average day/night noise level (DNL) at this location ranged from 61 to 63 dBA, with an overall DNL of 62 dBA.

Two short-term (10-minute duration) noise measurements were made simultaneously with the long-term measurements at heights of 5 feet above grade between 1:00 and 1:20 pm on Monday November 13th, 2017. Measurement ST-1 was conducted at the setback of the residences on Lots 1 and 2 immediately below long-term monitoring position LT-2, and measurement ST-2 was made near the southwest corner of the site on the property line shared with the residence on Lot 5. The measurement results and estimated L_{dn} levels are shown in Table 1, following.

Table 2: Summary of Short-Term Noise Measurement Data, dBA

Noise Measurement Location	L_{max}	L_{01}	L_{10}	L_{eq}	L_{50}	L_{90}	L_{min}	L_{dn}
ST-1: 5 feet above grade, at the setback of the residences on Lots 1 & 2 (1:00-1:10 pm)	65	64	60	57	56	50	46	**58**
ST-2: 5 feet above grade, at the property line shared with Lot 5 (1:10-1:20 pm)	62	60	58	55	54	52	51	**61**

Note: L_{dn} is approximated by correlation to the corresponding measurement period at the long-term sites.

PROJECT DESCRIPTION

Based on a review of the planning submittal drawing set 03 for the Bascom Andoil Replacement and Car Wash Addition dated 2-17-17[2], the project proposes to construct a new automated car wash on the southwest side of a new store/office structure. The carwash building will be 17 feet wide by 80 feet long with 10-foot wide by 10-foot tall entrance and exit openings. Cars will enter the wash from the southwest and exit the wash to the northeast, towards Woodard Road.

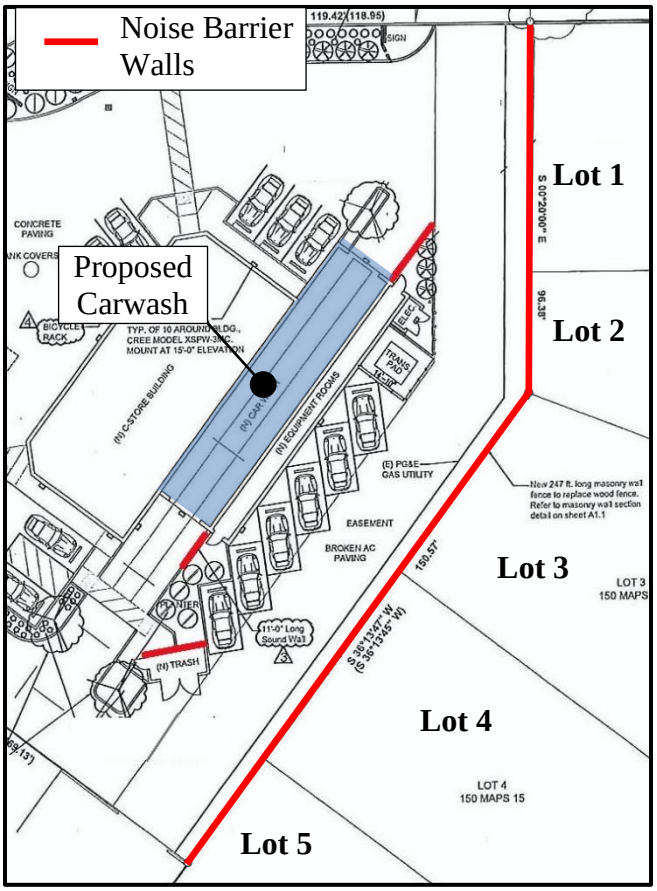


Figure 2: Carwash and Noise Barrier Layout

The project drawings along with the prior Noise Assessment indicate that the project will include the construction of an 18-foot long, 10-foot high noise barrier at the carwash exit, an 8-foot tall 16'-6" long masonry trash enclosure wall and an 11-foot long, 10-foot high noise barrier at the carwash entrance to reduce carwash noise emissions. Project drawings also show that the existing residential property line fence will be replaced with a 247-foot long 6-foot high masonry wall. Though this wall was not analyzed in the prior noise assessment, it may also be effective in reducing car wash noise at the adjacent residential uses. Figure 2 shows the carwash layout and noise barrier/masonry wall arrangements relative to surrounding properties.

As situated on the site the entrance opening will be as close as 50 feet from the property line shared with residential Lot 4 and the exit opening will be as close as 40 feet from the property line shared with residential Lot 1, as identified in Figures 1 and 2.

[2] Part of the Appeals document set for the 10-24-17 City Council Meeting

CAR WASH OPERATIONAL NOISE LEVELS

Automated car wash equipment and facilities include several noise sources associated with their operation. These include water pump and spray noise during the wash cycle inside the carwash building and the blower/dryers used during the drying process after the washing cycle is complete. The blower/dryers would be located at the exit of the carwash. Since the pumps are located in the building interior and the water spray noise occurs in the wash tunnel, the main noise source of an automated car wash system is produced by the blower/dryers. Therefore, this analysis examines car wash generated noise through an evaluation of sound levels generated by the dominant noise, the blower/dryer system.

The project description does not identify the manufacturer, make, or model of carwash equipment to be installed, however the applicants noise study considered the use of a Ryko 3-Fan SlimLine Dryer and Soft Gloss XS Car Wash system. The applicant's noise study used the Ryko carwash system as one that would be representative of the noise produced by the system that will ultimately be installed. I&R has conducted numerous studies of automated car wash installations and based on this work, we find the noise levels produced by the Ryko 3-Fan SlimLine Dryer system, producing a level of 84.2 dBA at 20 feet from the exit end of the tunnel, to fall in the mid-noise levels range of those which we have analyzed for other carwash installations. Based on this consideration, and to conduct a more complete analysis of the possible noise levels from the car wash at the adjacent residential uses, our analysis also considers a range of noise levels which may be produced by the unspecified automated car wash system. For this analysis we have reviewed our past projects and selected representative quieter and louder dryer systems evaluated our prior car wash noise analysis'. These systems are:

1. An AeroDry Systems, LLC, dryer system which produces a level of 79.4 dBA at 20 feet from the exit end of the tunnel, and
2. A Mark VII AquaDri F-40 Free Standing Dryer system which produces a level of 87.1 dBA at 20 feet from the exit end of the tunnel.

Maximum Car wash Noise Levels at Adjacent Residential uses

The sound pressure level data for these three car wash systems was used to calculate sound power levels (L_w)[3] for the dryer. These calculated sound power levels, along with the geometry of the proposed carwash, site buildings and noise barriers on the site were used as inputs to SoundPLAN, a 3-dimensional noise modeling software, to determine the maximum (L_{max}) noise levels due to carwash operations at the first and second level facades of the homes on Lots 1 through 5, which share a common property line with the project site[4]. These noise modeling results are presented in Table 2. Noise levels that are predicted to exceed the 55 dBA L_{max} threshold are bolded and highlighted in grey. Receiver locations are shown in Figure 3.

[3] The Sound Power Level represents the total sound energy produced by the source under the specified operating conditions. Sound Power Levels cannot be measured directly; instead they are computed from reference sound pressure level measurements, such as those reported by the manufacturer.

[4] Based on accepted distance attenuation factors and modeling results the noise levels at the actual property line would be 2 to 3 dBA higher, but considering that the shared property line is generally used for parking and other non-noise sensitive uses potential noise impacts were evaluated at the facades of the homes themselves.

Table 3: Maximum Car Wash Noise Levels at the Facades of Adjacent Residences

	Lot 1 Residence		Lot 2 Residence		Lot 3 Residence		Lot 4 Residence		Lot 5 Residence	
Height above ground level	**16 ft.**	**5 ft.**	**16 ft.**	**5 ft.**	**16 ft.**	**5 ft.**	**16 ft.**	**5 ft.**	**16 ft.**	**5 ft.**
Previously Analyzed Ryko Slimline Carwash (84.2 dBA @ 20 feet)	**68**	**63**	**63**	**62**	54	52	**62**	**60**	**61**	**59**
Higher Limit Carwash Sound Level (87.1 dBA @ 20 feet)	**70**	**66**	**65**	**64**	**57**	55	**67**	**65**	**66**	**64**
Lower Limit Carwash Sound Level (79.4 dBA @ 20 feet)	**62**	**58**	**57**	**56**	50	48	**60**	**58**	**59**	**56**

A review of noise modeling results shows that the maximum noise levels due to the operation of the proposed carwash will exceed the City's zoning code limit of 55 dBA at the upper and lower level facades of the homes on Lots 1, 2, 4, and 5 for all analyzed car wash systems. The maximum noise levels at the home on Lot 3 will be at or below the City's maximum noise limit of 55 dBA at the lower level facades for all analyzed car wash systems, higher noise car wash systems would also exceed the City's maximum noise limit of 55 dBA at the upper level façade of this home[5].

Figure 3: Noise Modeling Locations

[5] As stated in Footnote 4, above, it should also be noted that car wash noise levels at the actual property line would be expected to be 2 to 3 dBA higher, but considering that the shared property line is generally used for parking and other non-noise sensitive uses potential noise impacts were evaluated at the facades of the homes themselves.

Day/Night Average Levels (DNL) due Only to Carwash Operations at Adjacent Residential uses

The maximum noise modeling results determined with the SoundPLAN model were also used to compute the average (L_{eq}) noise level for a carwash cycle, which were then used to calculate the DNL level resulting solely from carwash operation under various operational scenarios.

The results of the stopwatch measurements conducted by the applicant on 10/22/17 of an existing Belanger carwash system located at 4995 Mowry Ave in Fremont were used compute the L_{eq} noise level for a carwash cycle from the maximum dryer cycle noise levels. These stopwatch measurements showed that the drying cycle lasts approximately 80 seconds, whereas the entire wash cycle takes approximately 253 seconds[6]. These dryer times and total wash cycle times concur with general range of cycle times I&R has observed and considered in other carwash noise analysis'.

Considering dryer noise to be the dominant source of carwash noise, the average noise level over an entire carwash cycle can be calculated from the maximum dryer noise level, the duration of the dryer cycle, and the total duration of the carwash cycle[7]. Using the client measured total car wash cycle versus dryer cycle times, the average carwash L_{eq} was found to be 5 dBA lower than the maximum noise level produced by car wash operations.[8]

With continuous carwash operation over an hour, which would equate to about 14 cars being washed per hour, the average carwash L_{eq} would become the hourly L_{eq}. Such worst case continuous operation over the fourteen (14) daytime hour (7:00 a.m. to 9:00 p.m.) operations schedule (as assumed in the applicant commissioned noise study), would result in a DNL due solely to the car wash operation that is 7 dBA lower than the maximum noise level produced by car wash operations[9]. Considering this the DNL levels due solely to carwash operations at the first and second level facades of the homes on Lots 1 through 5 have been calculated and are presented in Table 3, below. Noise levels that are predicted to exceed the 55 dBA DNL General Plan limit for new nonresidential land uses to located adjacent to existing noise-sensitive residential are bolded and highlighted in grey.

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[6] Mei Wu Acoustics (MWA), Andoil Bascom Car Wash - Peer Review Response, 10/23/17

[7] Considering that the dryer noise is typically the dominant source of carwash noise, the average noise level over an entire carwash cycle, (Leq_{cw}) may be calculated using the maximum dryer noise level ($Lmax_d$), the duration of the dryer cycle (Td), and the total duration of the carwash cycle (Tcw) as follows:
$Leqcw = Lmaxd + 10 * \log(Td) - 10 * \log(Tcw)$

[8] It should be noted that other sources of noise which occur during the carwash cycle are not considered in this calculation. Though the addition of these other source would not typically change the resulting Leq level, the addition of any other car wash related noise to this calculation would not decrease, but rather increase the resulting level.

[9] This is calculated using the equation: DNLcw $= 10 * \log(\{14 * [[10]\text{^}(\text{Leqcw}/10)\ ]\}/24)$,
Where: DNLcw = average day/night noise levels due solely to carwash operation and
Leqcw = hourly L_{eq} noise level produced by car wash operations.

Table 4: DNL Levels due to solely to Car Wash operations at Adjacent Residential Facades

	Lot 1 Residence		Lot 2 Residence		Lot 3 Residence		Lot 4 Residence		Lot 5 Residence	
Height above ground level	**16 ft.**	**5 ft.**	**16 ft.**	**5 ft.**	**16 ft.**	**5 ft.**	**16 ft.**	**5 ft.**	**16 ft.**	**5 ft.**
Previously Analyzed Ryko Slimline Carwash (84.2 dBA @ 20 feet)	**61**	**56**	**56**	54	47	45	55	53	54	51
Higher Limit Carwash Sound Level (87.1 dBA @ 20 feet)	**63**	**58**	**58**	**56**	50	48	**60**	**58**	**59**	**56**
Lower Limit Carwash Sound Level (79.4 dBA @ 20 feet)	55	51	50	49	42	40	52	50	51	49

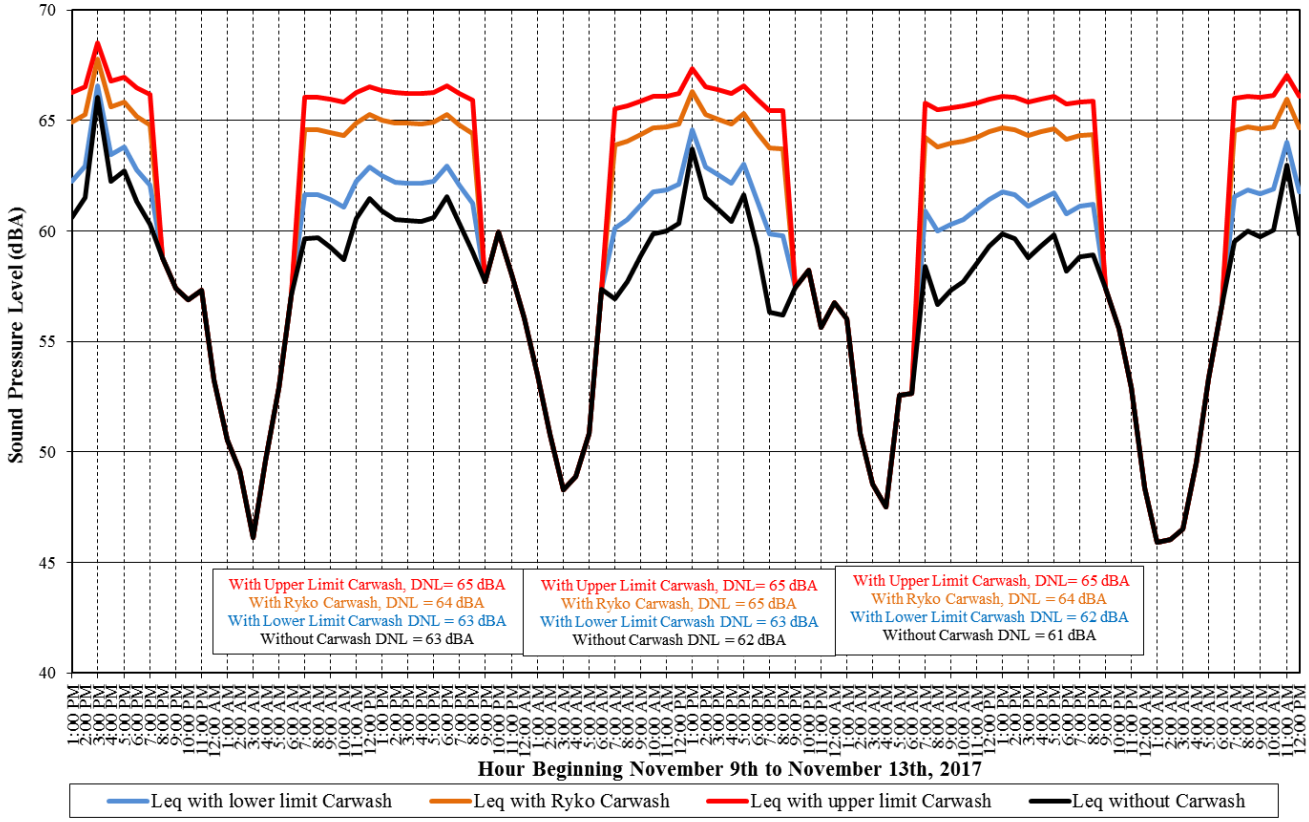
A review of noise modeling results shows that the DNL levels due solely to the operation of the previously analyzed (Ryko) and higher sound level carwash systems will exceed the City's General Plan EC-1.3 limit of 55 dBA DNL at the upper and lower level facades of the home on Lot 1. The Ryko system carwash noise would also exceed the General Plan EC-1.3 limit of 55 dBA DNL at the upper level of the residence on Lot 2, while the higher limit system carwash noise would exceed the General Plan EC-1.3 limit of 55 dBA DNL at the upper and lower level facades of the homes on Lots 1, 2, 4, and 5. The DNL levels due solely to the operation of the lower noise limit car wash system would not exceed the General Plan EC-1.3 limit of 55 dBA DNL at any residential façade.

Increase in existing DNL Levels due to Carwash Operations at Adjacent Residential uses

The maximum noise modeling results determined with the SoundPLAN model and the average (L_{eq}) noise level resulting carwash operations, as discussed above were also used to calculate the increase in the existing ambient DNL levels at the adjacent residential uses due to carwash operation. To undertake this analysis the hourly L_{eq} noise levels due to continuous carwash operations at modeled for the Lot 1 and 2 residential facades at the 16-foot height upper were logarithmically added[10] to the measured hourly noise levels between 7am and 9pm at measurement position LT-2. The graphical result of this analysis is shown in Charts 3a for the Residence on Lot 1 and Chart 3b for the residence on Lot 2.

[10] Sound levels which are expressed in decibels, are logarithmic quantities and so cannot be manipulated without being converted back to a linear scale.

Chart 3a: Average (Leq) Noise Levels
2nd Level Lot 1 Residential Facades with & without car wash noise

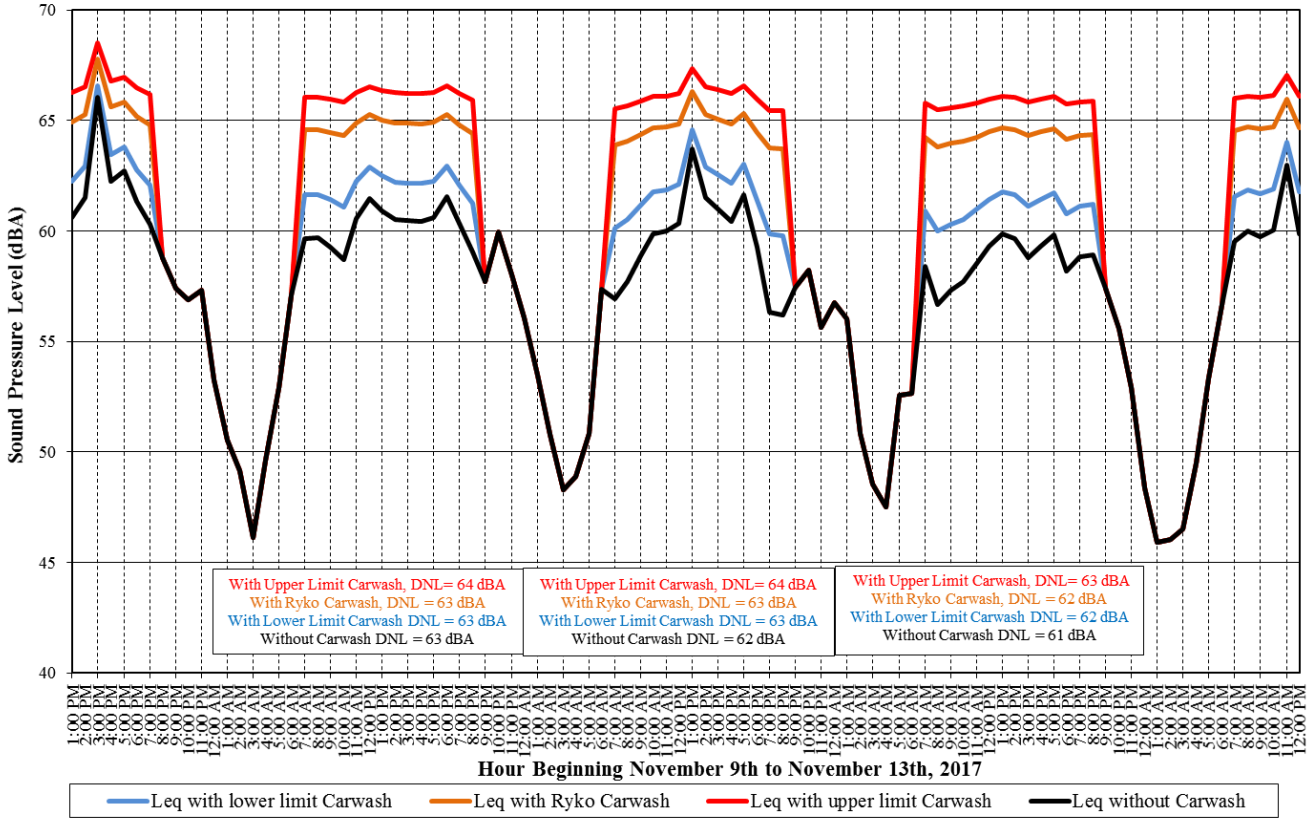


A review of Chart 3a shows that the average daytime noise levels at the upper floor facades of the residence on Lot 1 will increase due to carwash operations by between 2 to 9 dBA depending on the time of day and car wash system used. Due to these average noise level increases the DNL levels at this home will also increase, such that;

1. The lower noise level carwash system would increase the DNL measured on the Friday, Saturday and Sunday by 1 dBA,
2. The previously analyzed (Ryko) carwash system would increase the DNL measured on the Friday, Saturday and Sunday by 2, 2, and 3 dBA, respectively, and
3. The upper noise level carwash system would increase the DNL measured on the Friday, Saturday and Sunday by 3, 3, and 4 dBA, respectively.

These results indicate that the operation of either the previously analyzed Ryko carwash or the higher level carwash system analyzed would cause the DNL at the noise sensitive receptor on Lot 1 to increase by three dBA DNL or more in violation of General Plan policy EC-1.2.

Chart 3b: Average (Leq) Noise Levels
2nd Level Lot 2 Residential Facades with & without car wash noise



A review of Chart 3b shows that the average daytime noise levels at the upper floor facades of the residence on Lot 2 will increase due to carwash operations by between 1 to 5 dBA depending on the time of day and car wash system used. Due to these average noise level increases the DNL levels at this home will also increase, such that;

1. The lower noise level carwash system would not increase the DNL measured on the Friday, Saturday and Sunday,
2. The previously analyzed (Ryko) carwash system would increase the DNL measured on the Friday, Saturday and Sunday by 1 dBA each, and
3. The upper noise level carwash system would increase the DNL measured on the Friday, Saturday and Sunday by 1, 1, and 2 dBA, respectively.

Considering the results of the above analysis for the homes on Lots 1 and 2 in combination with a review of the Carwash only DNL levels presented in Table 4, we would expect that the increase in the existing DNL due to car wash operation will be less than 3 dBA at the residence on Lots 3, 4, and 5. However as noted above, the operation of either the previously analyzed Ryko carwash or the higher level carwash system analyzed would cause the DNL at the noise sensitive receptor on Lot 1 to increase by three dBA DNL or more in violation of General Plan policy EC-1.2.

SUMMARY OF FINDINGS

I&R's analysis of the proposed carwash addition to the existing Andoil service station located at 3702 South Bascom Avenue in San Jose, CA indicates that sound produced by the carwash operation will result noise levels which exceed the guidelines established by the City of San Jose's General Plan Noise Element and Zoning Code as follows:

1. The maximum noise levels due to the operation of an automated carwash system will exceed the City's zoning code limit of 55 dBA at the homes on four of the five adjacent residential lots by up to 15 dBA for the loudest carwash system analyzed, by up to 13 dBA for the previously analyzed (Ryko) carwash system, and by to up to 7 dBA for the quietest carwash system analyzed.
2. The Day/Night Average Levels (DNL) due to solely to carwash operations will exceed the City's General Plan Noise Element Policy limit EC-1.3 limit of 55 dBA DNL at the homes on four of the five adjacent residential lots by up to 8 dBA for the loudest carwash system analyzed and by up to 6 dBA for the previously analyzed (Ryko) carwash system.
3. The previously analyzed (Ryko) carwash system and loudest carwash system analyzed were both found to result in an increase in the DNL on weekend day by 3 dBA or more.

These exceedances of City noise guidelines and standards are considered significant and would be expected to result in a significant impact on the noise environment of the adjacent residential neighbors. Significant additional noise mitigation and/or a major project redesign will be is required to allow the project operations to comply with City Noise Standards.

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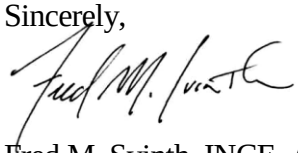
This concludes I&R's environmental noise assessment of the proposed carwash addition at the existing Andoil service station located at 3702 South Bascom Avenue in San Jose, CA. Please do not hesitate to call with any questions or concerns,

Sincerely,



Fred M. Svinth, INCE, Assoc., AIA
Senior Consultant, Principal
Illingworth & Rodkin, Inc.
Attachments: Appendix A.

APPENDIX A:

FUNDAMENTAL CONCEPTS OF ENVIRONMENTAL ACOUSTICS

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. The objectionable nature of sound could be caused by its pitch or its loudness. Pitch is the height or depth of a tone or sound, depending on the relative rapidity (frequency) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. Loudness is intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In addition to the concepts of pitch and loudness, there are several noise measurement scales, which are used to describe noise in a particular location. A decibel (dB) is a unit of measurement, which indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10-decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly-wide range of intensities. Technical terms are defined in Table 1. There are several methods of characterizing sound. The most common in California is the A-weighted sound level or dBA. This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA are shown in Table 2.

Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This energy-equivalent sound/noise descriptor is called L_{eq}. The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance the receptor is from the noise source. Close to the noise source, the models are accurate to within about plus or minus 1 to 2 dBA.

Since the sensitivity to noise increases during the evening and at night -- because excessive noise interferes with the ability to sleep -- 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The Day/Night Average Sound Level, L_{dn}, is a measure of the cumulative noise exposure in a community, with a 10 dB penalty added to nighttime (10:00 pm - 7:00 am) noise levels. The Community Noise Equivalent Level, CNEL, is a measure of the cumulative noise exposure in a community, with a 5 dB penalty added to evening (7:00 pm - 10:00 pm) and a 10 dB addition to nocturnal (10:00 pm - 7:00 am) noise levels.

Effects of Noise

Sleep and Speech Interference: The thresholds for speech interference indoors are about 45 dBA if the noise is steady and above 55 dBA if the noise is fluctuating. Outdoors the thresholds are about 15 dBA higher. Steady noise of sufficient intensity; above 35 dBA, and fluctuating noise levels above about 45 dBA have been shown to affect sleep. Interior residential standards for multi-family dwellings are set by the State of California at 45 dBA L_{dn}. Typically, the highest steady traffic noise level during the

daytime is about equal to the L_{dn} and nighttime levels are 10 dBA lower. The standard is designed for sleep and speech protection and most jurisdictions apply the same criterion for all residential uses.

TABLE 1: Definitions of Acoustical Terms Used in this Report

Term	Definitions
Decibel, dB	A unit describing, the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micro Pascals (or 20 micro Newtons per square meter), where 1 Pascal is the pressure resulting from a force of 1 Newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micro Pascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and Ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level, L_{dn} or DNL	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 pm and 7:00 am.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 pm to 10:00 pm and after addition of 10 decibels to sound levels measured in the night between 10:00 pm and 7:00 am.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Typical structural attenuation is 12-17 dBA with open windows. With closed windows in good condition, the noise attenuation factor is around 20 dBA for an older structure and 25 dBA for a newer dwelling. Sleep and speech interference is therefore possible when exterior noise levels are about 57-62 dBA L_{dn} with open windows and 65-70 dBA L_{dn} if the windows are closed. Levels of 55-60 dBA are common along collector streets and secondary arterials, while 65-70 dBA is a typical value for a primary/major arterial. Levels of 75-80 dBA are normal noise levels at the first row of development outside a freeway right-of-way. In order to achieve an acceptable interior noise environment, bedrooms facing secondary roadways need to be able to have their windows closed, those facing major roadways and freeways typically need windows with special glass.

TABLE 2: Typical Noise Levels in the Environment

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110 dBA	Rock band
Jet fly-over at 1,000 feet		
	100 dBA	
Gas lawn mower at 3 feet		
	90 dBA	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80 dBA	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	70 dBA	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60 dBA	
		Large business office
Quiet urban daytime	50 dBA	Dishwasher in next room
Quiet urban nighttime	40 dBA	Theater, large conference room
Quiet suburban nighttime		
	30 dBA	Library
Quiet rural nighttime		Bedroom at night, concert hall
	20 dBA	
		Broadcast/recording studio
	10 dBA	
	0 dBA	

Source: Technical Noise Supplement (TeNS), Caltrans, November 2009.

TJKM VISION THAT MOVES YOUR COMMUNITY

Technical Memorandum

Date: November 21, 2017

To: Karen Mack
Traffic Manager
Development Services
408-535-6816

From: Chris Kinzel, P.E.
Project Manager

Jurisdiction: San Jose

Subject: ***Traffic Analysis for Proposed Expansion of ANDOIL Gas Station Located at 3702 South Bascom Avenue in the City of San Jose***

The purpose of this memorandum is to present the traffic analysis results for the renovation of an existing ANDOIL Gas Station at 3702 South Bascom Avenue in the City of San Jose.

PROJECT DESCRIPTION

The proposed commercial development is located on the southwest corner of South Bascom Avenue and Woodard Road intersection in the City of San Jose. The proposed project consists of the modification of an existing gas station and service center to demolish an existing 1,276 square foot gas station minimart and construct a two-story building with a 2,834 square foot convenience store and a 1,840 square foot fully automated car wash and 1,080 square feet of private office space on the second floor. The car wash drive-through has a five car stacking space which will not obstruct on-site circulation. There would be no change to the location of the existing fuel pumps and the existing canopy and canopy signage. The project includes closure of one existing driveway on Woodard Road at the northwest corner of the site. The redeveloped site will have access from two existing driveways on South Bascom Avenue and one existing driveway on Woodard Road, located at the northeast corner to the site.

There is an existing commercial complex immediately adjacent to the site which shares a common driveway on South Bascom Avenue. In addition, the adjacent site also will have access to the remaining driveways.

A total of 21 parking stalls, including one ADA accessible space, and two bicycle parking spaces are proposed. The proposed site plan, dated February 17, 2017, is presented in the **Appendix**.

TRIP GENERATION

TJKM developed estimated project trip generation for the proposed project based on published trip generation rates from the ITE publication *Trip Generation (9th Edition)*. TJKM applied trip credits to the proposed project trip generation that are consistent with the City of San Jose and VTA Traffic Analysis Guidelines in terms of development densities, existing trip credits and retail pass-by trips.

Pass-by trips are made as intermediate stops on the way from an origin to a primary trip destination without a route diversion. Pass-by trips are attracted from traffic passing the site on an adjacent street or roadway that offers direct access to the generator. Pass-by trips are not diverted from another roadway.

TJKM used published trip rates for the ITE land use Convenience Market with gasoline pumps (ITE Code 853), Gasoline/Service Station with Convenience Market (ITE Code 945), Single Tenant Office Building (ITE Code 715) and Automated Carwash (ITE Code 948) for this project. **Table 1** shows the net project trip generation. The proposed project is expected to generate approximately a net of 20 weekday a.m. peak hour trips (11 inbound trips, 9 outbound trips) and a net of 34 weekday p.m. peak hour trips (17 inbound trips, 17 outbound trips).

Table 1: Project Trip Generation

	Land Use (ITE Code)	Size	Unit	A.M. Peak Hour				P.M. Peak Hour				
				In:Out	In	Out	Total	Rate	In:Out	In	Out	Total
Existing	Gasoline/Service Station with Convenience Market (945)	8	VFP	50:50	41	41	81	13.51	50:50	54	54	108
	Pass-by Trip Discount as per ITE				-25	-25	-50	-56%		-30	-30	-60
	Existing Land Use Sub-total (A)				16	16	31			24	24	48
Proposed	Convenience Market with gasoline pumps (853)	8	VFP	50:50	67	67	133	19.07	50:50	77	77	153
	Pass-by Trip Discount for Convenience Market with gasoline pumps as per ITE				-42	-42	-84	-66%		-50	-50	-100
	Automated Car Wash (948)	1.858	KSF	N/A				14.12	50:50	14	14	27
	Single Tenant Office Building (715)	1.082	KSF	89:11	2	0	2	1.95	15:85	0	2	2
	Proposed Land Use Sub-total (B)				27	25	51			41	42	82
Net Trips (A) - (B)					**11**	**9**	**20**			**17**	**17**	**34**

PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

Trip distribution is a process that determines in what proportion vehicles would be expected to travel between the project site and various destinations outside the project study area. Assignment determines the various routes that vehicles would take from the project site to each destination using the calculated trip distribution.

Trip distribution assumptions for the proposed project were developed based on the existing travel patterns, and TJKM's knowledge of the study area.

The distribution assumptions are as follows:

- 40 percent to/from south of South Bascom Avenue
- 40 percent to/from north of South Bascom Avenue
- 20 percent to/from Woodard Road

The assigned project trips were then added to traffic volumes under Existing Conditions to generate Existing plus Project Conditions traffic demands.

EXISTING PROJECT SITE DRIVEWAY COUNTS

TJKM conducted driveway counts during morning and evening peak periods in November 2017. TJKM counted the trips going in and out of the existing driveways on South Bascom Avenue and Woodard Avenue. The counts were collected during the a.m. peak period between 7:30 a.m. and 8:30 a.m. and the p.m. peak period between 4:00 p.m. and 5:00 p.m. on November 16, 2017. There were 32 inbound trips and 29 outbound trips during the a.m. peak hour and 47 inbound trips and 52 outbound trips during the p.m. peak hour of the existing gas station and auto repair snack shop. These driveway trips also include the trips of neighboring land uses as they share the driveways and their accessibility to the driveways. There is a nearby elementary school; some parents use a portion of the site for temporary parking while dropping off or picking up their children to avoid congestion closer to the school. The driveway counts also include school users.

LOS ANALYSIS

The results of the intersection level of service analysis for Existing and Existing plus Project Conditions are summarized in **Table 2**. The existing a.m. and p.m. peak hour counts were provided by the City of San Jose. Detailed calculation sheets for Existing and Existing plus Project Conditions are contained in the **Appendix.** The results for Existing Conditions are included for comparison purposes, along with the projected increases in critical delay and critical V/C ratios. The changes in delay between Existing and Existing plus Project Conditions are used to identify significant impacts. Under Existing and Existing plus Project Conditions, the study intersection operates within standards of the City of San Jose (LOS D) and VTA CMP (LOS E) or better during the a.m. and p.m. peak hours.

Based on the City of San Jose and VTA's CMP impact criteria, the project is expected to have a less-than-significant impact at the study intersection.

Table 2: Intersection Level of Service Analysis – Existing and Existing plus Project Conditions

City ID #	Intersection	Control	Peak Hour[1]	Existing Conditions		Existing plus Project Conditions		Δ in Critical V/C[4]	Δ in Critical Delay[5]
				Average Delay[2]	LOS[3]	Average Delay[2]	LOS[3]		
3286	South Bascom Avenue/Woodard Road	Signalized	AM	23.8	C	23.7	C	0.001	0.0
			PM	16.0	B	16.5	B	0.007	0.6

Notes:
[1]AM – morning peak hour, PM – evening peak hour
[2]Average intersection delay expressed in seconds per vehicle for signalized intersections
[3]LOS = Level of Service
[4]Change in critical volume to capacity ratio between Existing and Existing plus Project Conditions
[5]Change in average critical movement delay between Existing and Existing plus Project Conditions

AVERAGE DAILY TRAFFIC

Based on the peak hour counts provided by the City of San Jose, the existing average daily traffic on Woodard Road is 5,935 vehicles per day. With the project traffic added, the average daily traffic on the Woodard Road is 6,040 vehicles per day.

PROJECT'S CONFORMANCE TO DRIVE-THROUGH USES POLICY (POLICY 6-10)

TJKM evaluated the proposed project site plan to ensure compliance with the City of San Jose's Drive-Through (Policy 6-10). The City of San Jose Policy 6-10 lists the following criteria under TRAFFIC for development of establishments with drive-thru facilities:

- Primary ingress and egress to drive-through type use parking lots should be from at least a four-lane major street - *The proposed project site plan proposes to provide access to the proposed project via South Bascom Avenue and Woodard Avenue. In the vicinity of the project site, South Bascom Avenue has three lanes in each direction and Woodard Road Avenue has one lane in each direction. The proposed project is consistent with this criterion.*

- The drive-through stacking lane shall be located in a way so that any overflow from the stacking lane will not spill out onto public streets or major aisles of any parking lot. Overflow capacity shall be 50 percent of required stacking for overflow restricted to the parking lot and 100 percent of required stacking if the overflow is directed to the street - *Based on the evaluation of the drive-through it is projected that the proposed stacking lane would accommodate 100 percent of the required stacking described below.*

- No ingress and egress points shall conflict with turning movements of street intersections - *It is projected that the ingress and egress to the proposed project will not conflict with the turning movements at the nearby intersection of South Bascom Avenue and Woodard Road, and would not interfere with the operation of the intersection. The proposed project is consistent with this criterion based on the evaluation of the proposed ingress and egress points.*

- No drive-through use shall be approved with ingress or egress driveways within 150 feet of a signalized intersection operating at a LOS D, E or F unless a traffic analysis demonstrates, to the satisfaction of the Director of Public Works, that vehicles entering or leaving said use will not impair the efficiency or operation of the intersection - *The proposed ingress and egress points to the proposed project are within 150 feet of the intersection of South Bascom Avenue and Woodard Road. Based on the trip generation and traffic analysis conducted for the project, the intersection of South Bascom Avenue and Woodard Road operates at LOS C in the a.m. peak hour and LOS B in the p.m. peak hour with and without project conditions. As a result, the project is projected to be consistent with this criterion.*

- The drive-through stacking lane shall be separated physically from the user's parking lot and shall have a capacity of:
  Automated Carwashes—five cars per lane* (*Allow 20 feet per car) *Criterion satisfied.*

- No pedestrian crossing of the drive-through lane shall be allowed – *The project proposes to provide stacking capacity for five vehicles without intruding into the on-site parking lot; additional stacking, if necessary, would be available within the lot and one pedestrian crossing of the drive-through lane is proposed. This crossing leads to the trash and parking area and needs to be removed. Based on the proposed project site plan, the project is inconsistent with this criterion, until the crosswalk described above is removed.*

- Proposed drive-through uses at or near signalized intersections may compound existing traffic congestion and make it intolerable even if the intersection meets the Transportation LOS Policy. In these situations, proposed drive-through uses should be discouraged - *Based on the trip generation and traffic analysis conducted for the project, it is projected that the proposed project trips will not have significant impacts on the operation of the intersection of South Bascom Avenue and Woodard Road. As a result, the project is projected to be consistent with this criterion.*

Based on the evaluation of the proposed site plan it is concluded that the proposed project is will be consistent with the City of San Jose Jose's Drive-Through uses Policy (Policy 6-10) with the proposed modification described above.

FIELD OBSERVATIONS

TJKM conducted the field observations in the immediate vicinity of the project site on November 16, 2017 to review overall transportation characteristics. The project is within 500 feet of the Farnham Elementary School located on Woodard Road to the east. TJKM conducted field observations during the school peak periods between 7 and 9 a.m. and between 2 and 4 p.m. Observations are as follows:

- During the school peak hours Woodard Road between South Bascom Avenue and Esther Drive is very congested due dropping off and picking up of children and inadequate on-site parking and circulation.
- The intersection of Woodard Road and Starview Drive/ and the driveway for San Jose Greens Apartments is located immediately adjacent to the school driveway. This proximity creates unsafe conditions and delays to the vehicles traveling eastbound and westbound on Woodard Road. These intersections operate as two closely spaced but separate intersections creating vehicular conflict points and disrupting the traffic on Woodard Road.
- Some of the parents in the a.m. peak hour desiring to drop their children, pass through the intersection of Woodard Road and Starview Drive and then make an immediate left turn in to the school driveway, which frequently is already blocked by the westbound traffic. This left turning traffic has to yield to oncoming westbound traffic resulting in queuing and blocking the area. Also, there is high pedestrian activity at these closely spaced intersections which is facilitated by two school crossing guards.
- The vehicles coming out of the school driveway makes either left or right turns onto Woodard Road, which is already congested.
- There is high pedestrian activity on Woodard Road and at the intersection of South Bascom Avenue and Woodard Road.
- Some parents utilize both sides of Woodard Road between South Bascom Avenue and Jackson Drive to drop-off and pick-up students. Some make U-turns on Woodard Road before and after the drop-off or pick-up activity resulting in safety, congestion, and queuing issues for both eastbound and westbound traffic. During the field observations, it was also noticed that some parents abruptly pulled into the roadway, creating unsafe conditions for bicycles and other traffic. At times, traffic backed up to the intersection of South Bascom Avenue and Woodard Road.
- Several parents use the parking lot of the subject service station to drop off and pick up children remote from the school site in order to avoid the congestion near the school. When doing this, they are interfering with the normal usage of the driveways intended for the subject service station and the existing commercial uses next door.
- Since this is on the service station is on the opposite side of the street from the school, this creates additional pedestrian activity in the street near the school.

Conclusion of Field Observations

TJKM's conclusion is that although school area activity is very congested and creates safety issues for pedestrians and motorists, such activity is completely independent of the current or future operations of the proposed project.

Please contact me if there are questions on this matter.

APPENDIX

PROJECT INFORMATION TABLE:

a. **Assessor's Parcel Number: 421-01-104**

b. **Statement of tables**
1. **Total acres of subject property (0.73 net, 0.81 gross)**
2. **Total existing and proposed gross square footage of floor space (3,224 SQ. FT. Existing, 5,774 SQ. FT. New)**

c. **Parking Calculations:**
1. **Gas or charge station: 1 per employee, plus 1 per air and water pump service area, plus 1 space for info stop.**
   - Bicycle: 1 per 10 full-time employees
2. **Retail: 1 per 200 square feet of floor area (85% of gross floor area)**
   - Bicycle: 1 per 3,000 square feet
3. **Office: 1 per 250 square feet of floor area (85% of gross floor area)**

d. **Temporary trailer per Section 20.20.1700 of the zoning ordinance.**

PARKING STALL CALCULATIONS:

0.85 (2834)/200 + 0.85(1082)/250 = 16 + 1 employee/shift + 1 air & water + 1 info stop = 19 stalls, and 1 bicycle rack

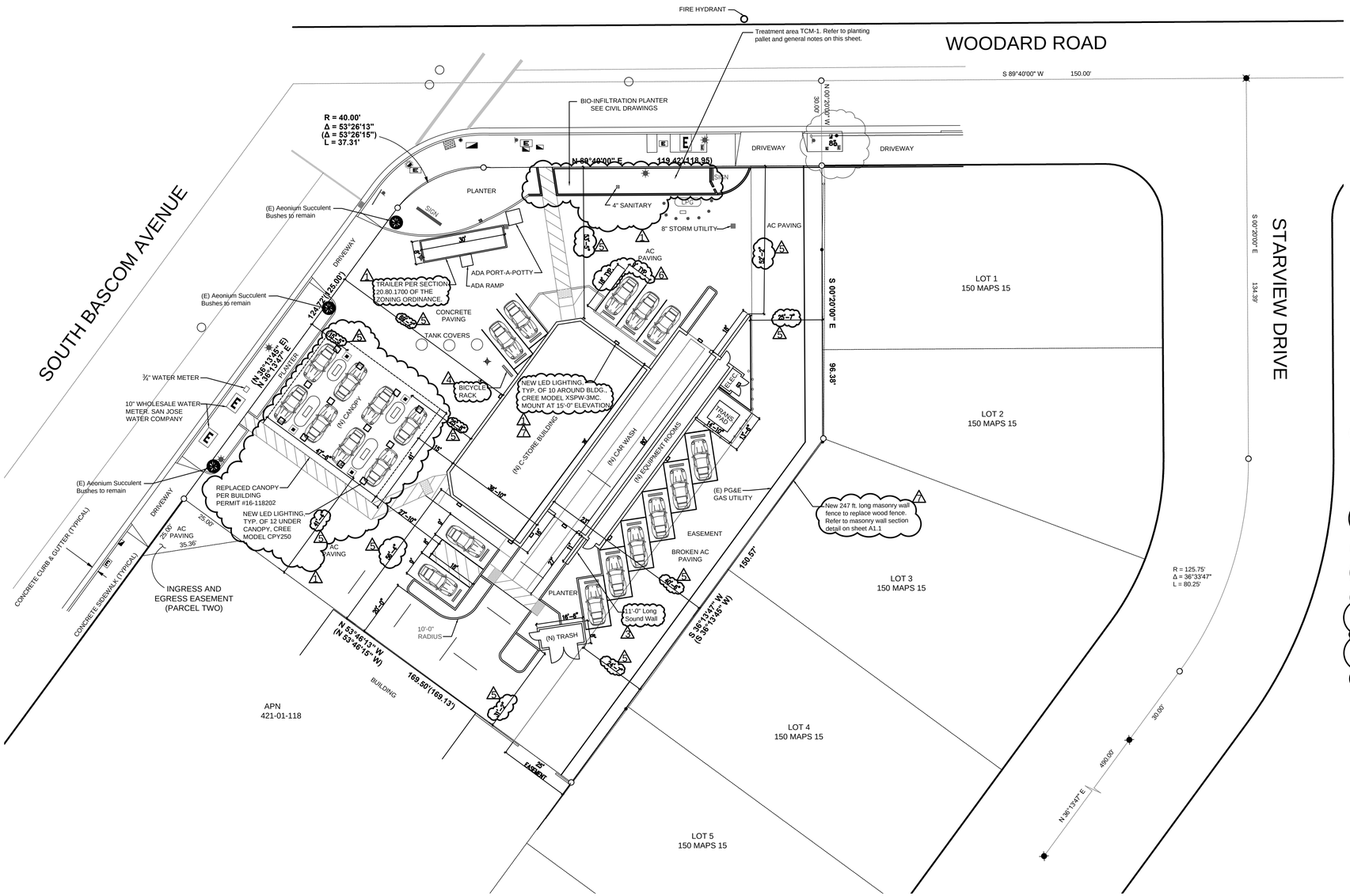
TRASH ENCLOSURE CALCULATIONS:

GENERATION & DISPOSAL RATE*:

(3.12 LB/100SF/DAY) X (365 DAY/YEAR) X (2,700 SF/100) X (1 / 84 LB/CY) X (1 / 52 WK/Y) = 7 CY/WK

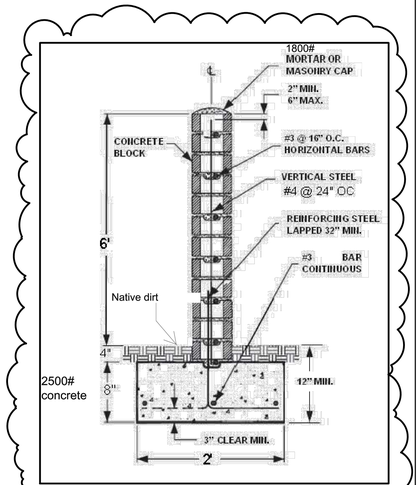
USE 3 CY RECYCLE BIN
3 CY TRASH BIN
1.5 CY FOOD TRASH BIN

*** CALRECYCLE, COMMERCIAL SECTOR ESTIMATED SOLID WASTE GENERATION & DISPOSAL RATE FOR FOOD STORES.**



1 **PROPOSED SITE PLAN**
SCALE: 1"=20'-0"

NORTH
0' 10' 20' 40'



MASONRY WALL DETAIL
SCALE: N.T.S.

REGISTERED PROFESSIONAL ENGINEER
R.C. DILLS
S4069
Exp. 3/31/2018
STRUCTURAL
STATE OF CALIFORNIA

6	Planning's Comments	05-26-17
5	Planning's Comments	04-19-17
4	Planning's Comments	04-7-17
3	Planning's Comments	02-13-17
2	Planning's Comments	12-21-16
1	Planning's Comments	11-8-16
A	Planning's Comments	8-22-16

REVISIONS

03	Planning Submittal	2-17-17
02	Planning Submittal	9-21-16
01	Planning Submittal	6-13-16

SUBMITTALS

BASCOM ANDoil REPLACEMENT AND CAR WASH ADDITION

OWNER: ANDARYS ENTERPRISE, INC.
3702 S BASCOM AVE
SAN JOSE, CA 95124

Sheet Title
PROPOSED SITE PLAN

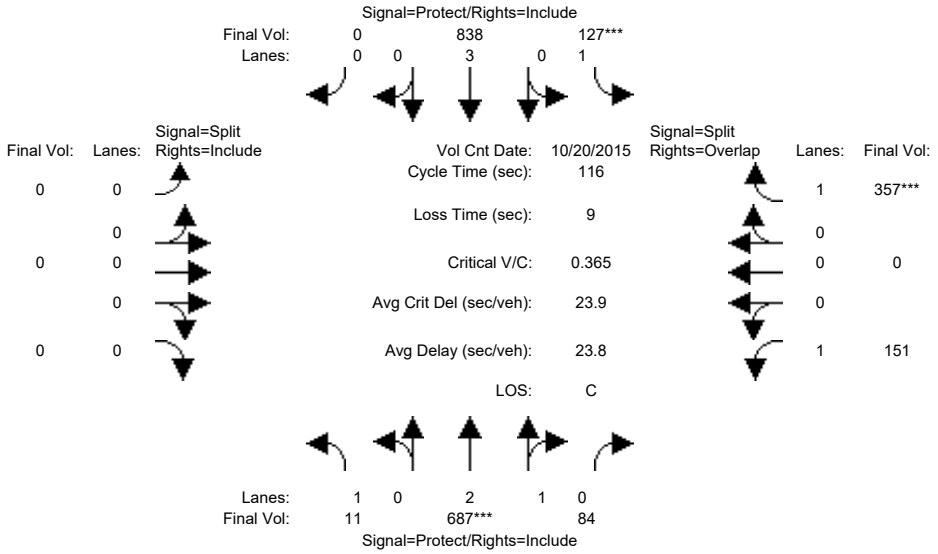
Applicant: ANDARYS ENTERPRISE, INC.
Applicant Contact: Antoine Andary
(408) 608-8203
Scale: As Noted

Drawing Number
A1.1

Sheet Of

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #3286: BASCOM/WOODARD

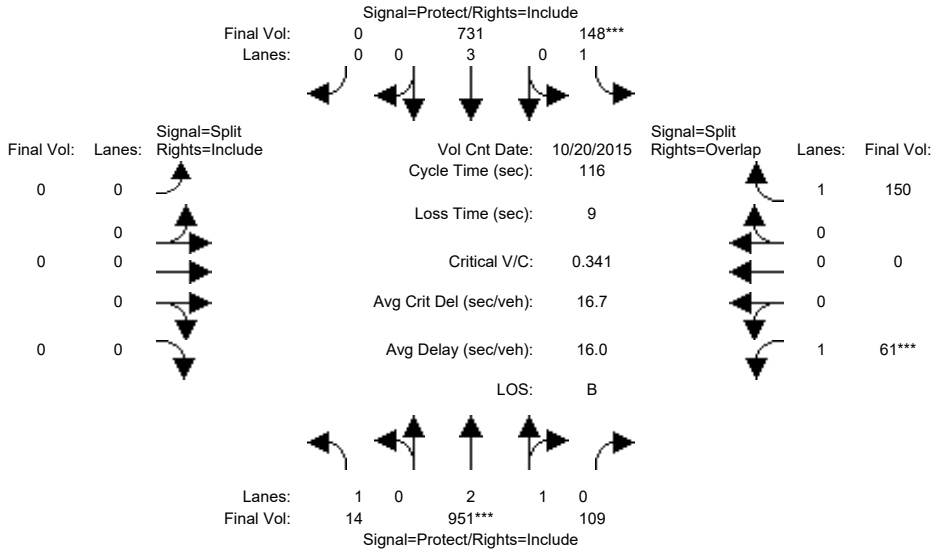


Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	0	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 20 Oct 2015 << 7:40-8:40												
Base Vol:	11	687	84	127	838	0	0	0	0	151	0	357
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	11	687	84	127	838	0	0	0	0	151	0	357
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	11	687	84	127	838	0	0	0	0	151	0	357
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	11	687	84	127	838	0	0	0	0	151	0	357
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	11	687	84	127	838	0	0	0	0	151	0	357
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	11	687	84	127	838	0	0	0	0	151	0	357
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.67	0.33	1.00	3.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	1900	4622	565	1900	5187	0	0	0	0	1900	0	1900
Capacity Analysis Module:												
Vol/Sat:	0.01	0.15	0.15	0.07	0.16	0.00	0.00	0.00	0.00	0.08	0.00	0.19
Crit Moves:		****		****								****
Green/Cycle:	0.16	0.41	0.41	0.18	0.43	0.00	0.00	0.00	0.00	0.33	0.00	0.52
Volume/Cap:	0.04	0.36	0.36	0.36	0.38	0.00	0.00	0.00	0.00	0.24	0.00	0.36
Uniform Del:	41.1	23.9	23.9	41.5	22.5	0.0	0.0	0.0	0.0	28.1	0.0	16.8
IncremntDel:	0.0	0.1	0.1	0.7	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	41.2	24.0	24.0	42.1	22.6	0.0	0.0	0.0	0.0	28.3	0.0	17.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.2	24.0	24.0	42.1	22.6	0.0	0.0	0.0	0.0	28.3	0.0	17.0
LOS by Move:	D	C	C	D	C	A	A	A	A	C	A	B
HCM2kAvgQ:	0	7	7	4	7	0	0	0	0	4	0	7

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #3286: BASCOM/WOODARD

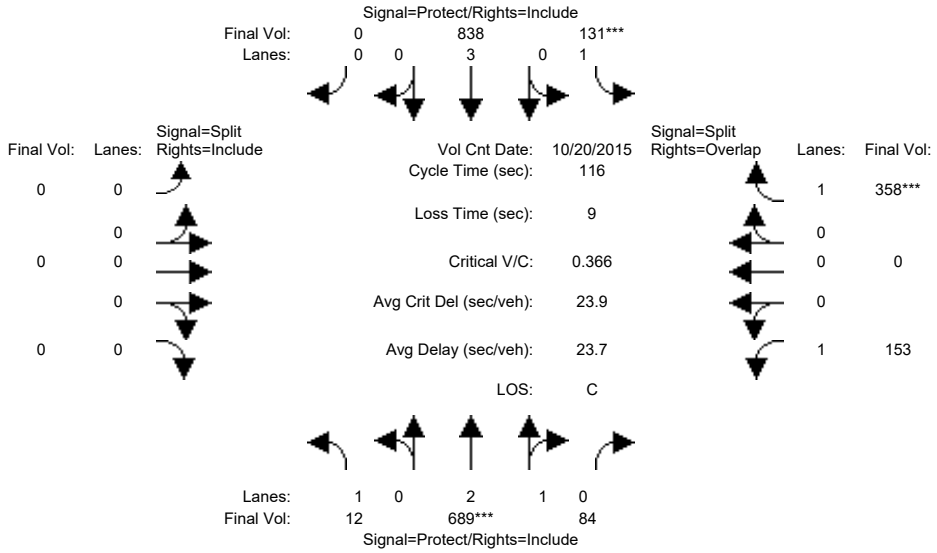


Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	0	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 20 Oct 2015 << 4:55-5:55												
Base Vol:	14	951	109	148	731	0	0	0	0	61	0	150
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	14	951	109	148	731	0	0	0	0	61	0	150
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	14	951	109	148	731	0	0	0	0	61	0	150
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	14	951	109	148	731	0	0	0	0	61	0	150
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	14	951	109	148	731	0	0	0	0	61	0	150
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	14	951	109	148	731	0	0	0	0	61	0	150
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.69	0.31	1.00	3.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	1900	4654	533	1900	5187	0	0	0	0	1900	0	1900
Capacity Analysis Module:												
Vol/Sat:	0.01	0.20	0.20	0.08	0.14	0.00	0.00	0.00	0.00	0.03	0.00	0.08
Crit Moves:		****		****						****		
Green/Cycle:	0.25	0.60	0.60	0.23	0.58	0.00	0.00	0.00	0.00	0.09	0.00	0.32
Volume/Cap:	0.03	0.34	0.34	0.34	0.24	0.00	0.00	0.00	0.00	0.34	0.00	0.24
Uniform Del:	33.0	11.7	11.7	37.4	11.9	0.0	0.0	0.0	0.0	49.2	0.0	28.9
IncremntDel:	0.0	0.1	0.1	0.5	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	33.0	11.8	11.8	37.9	12.0	0.0	0.0	0.0	0.0	50.3	0.0	29.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.0	11.8	11.8	37.9	12.0	0.0	0.0	0.0	0.0	50.3	0.0	29.1
LOS by Move:	C	B	B	D	B	A	A	A	A	D	A	C
HCM2kAvgQ:	0	7	7	4	5	0	0	0	0	2	0	4

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Exisiting plus Project AM

Intersection #3286: BASCOM/WOODARD

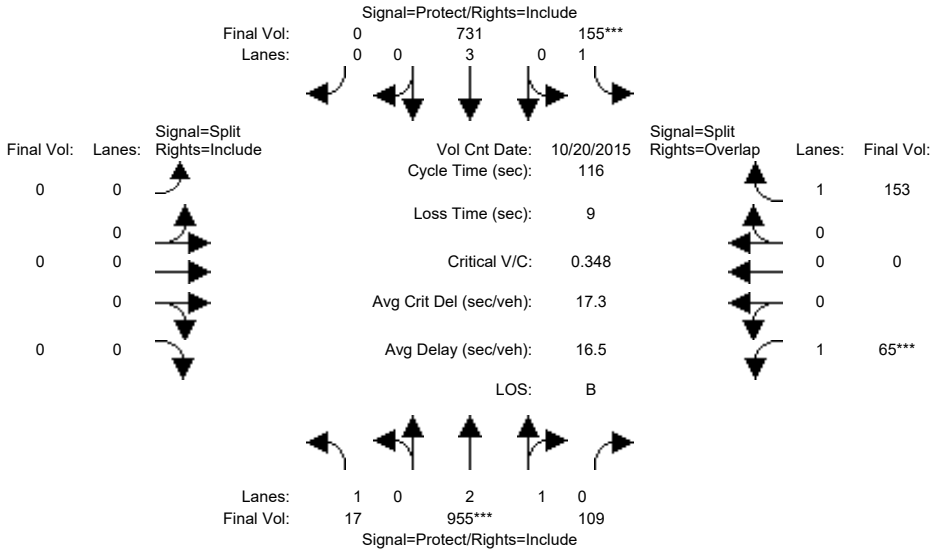


Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	0	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 20 Oct 2015 << 7:40-8:40												
Base Vol:	11	687	84	127	838	0	0	0	0	151	0	357
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	11	687	84	127	838	0	0	0	0	151	0	357
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project AM:	1	2	0	4	0	0	0	0	0	2	0	1
Initial Fut:	12	689	84	131	838	0	0	0	0	153	0	358
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	12	689	84	131	838	0	0	0	0	153	0	358
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	12	689	84	131	838	0	0	0	0	153	0	358
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	12	689	84	131	838	0	0	0	0	153	0	358
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.67	0.33	1.00	3.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	1900	4623	564	1900	5187	0	0	0	0	1900	0	1900
Capacity Analysis Module:												
Vol/Sat:	0.01	0.15	0.15	0.07	0.16	0.00	0.00	0.00	0.00	0.08	0.00	0.19
Crit Moves:		****			****							****
Green/Cycle:	0.16	0.41	0.41	0.19	0.43	0.00	0.00	0.00	0.00	0.33	0.00	0.52
Volume/Cap:	0.04	0.37	0.37	0.37	0.37	0.00	0.00	0.00	0.00	0.25	0.00	0.37
Uniform Del:	41.0	23.9	23.9	41.0	22.2	0.0	0.0	0.0	0.0	28.6	0.0	16.8
IncremntDel:	0.1	0.1	0.1	0.6	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	41.0	24.0	24.0	41.7	22.3	0.0	0.0	0.0	0.0	28.8	0.0	17.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.0	24.0	24.0	41.7	22.3	0.0	0.0	0.0	0.0	28.8	0.0	17.0
LOS by Move:	D	C	C	D	C	A	A	A	A	C	A	B
HCM2kAvgQ:	0	7	7	4	7	0	0	0	0	4	0	7

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Exisiting plus Project PM

Intersection #3286: BASCOM/WOODARD



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	0	0	0	0	10	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 20 Oct 2015 << 4:55-5:55												
Base Vol:	14	951	109	148	731	0	0	0	0	61	0	150
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	14	951	109	148	731	0	0	0	0	61	0	150
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project PM:	3	4	0	7	0	0	0	0	0	4	0	3
Initial Fut:	17	955	109	155	731	0	0	0	0	65	0	153
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	17	955	109	155	731	0	0	0	0	65	0	153
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	17	955	109	155	731	0	0	0	0	65	0	153
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	17	955	109	155	731	0	0	0	0	65	0	153
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.69	0.31	1.00	3.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	1900	4656	531	1900	5187	0	0	0	0	1900	0	1900
Capacity Analysis Module:												
Vol/Sat:	0.01	0.21	0.21	0.08	0.14	0.00	0.00	0.00	0.00	0.03	0.00	0.08
Crit Moves:		****		****						****		
Green/Cycle:	0.25	0.59	0.59	0.23	0.58	0.00	0.00	0.00	0.00	0.10	0.00	0.33
Volume/Cap:	0.04	0.35	0.35	0.35	0.24	0.00	0.00	0.00	0.00	0.35	0.00	0.24
Uniform Del:	33.2	12.3	12.3	37.0	12.1	0.0	0.0	0.0	0.0	48.8	0.0	28.1
IncremntDel:	0.0	0.1	0.1	0.5	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	33.2	12.4	12.4	37.5	12.1	0.0	0.0	0.0	0.0	50.0	0.0	28.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.2	12.4	12.4	37.5	12.1	0.0	0.0	0.0	0.0	50.0	0.0	28.3
LOS by Move:	C	B	B	D	B	A	A	A	A	D	A	C
HCM2kAvgQ:	0	7	7	5	5	0	0	0	0	2	0	4

Note: Queue reported is the number of cars per lane.

SMITH ENGINEERING & MANAGEMENT

December 5, 2017

Mr. Benjamin R Levinson, Esq.
Law Offices of Benjamin R. Levinson
46 N. Second Street, Suite A
Campbell, CA 95008

Subject: South Bascom and Woodard Gas Station, Convenience Store, Carwash and Office Project, File No. CP16-035

P17019

Dear Mr. Levinson:

This report supplements my comment letter of October 7, 2017 on the above referenced Project. It reflects my personal observation of traffic activity on and near the site during the AM peak hour and further thoughts on the implications of the site plan on traffic, parking and pedestrian safety considerations.

My qualifications to perform this review were thoroughly documented in my October 7, 2017 letter and my professional resume was attached hereto. All of the comments in that prior letter remain in force.

Details of my supplemental review follow.

Unusual Circumstances on and in the Vicinity of the Project Lead to Traffic Operational Complexities that Would Be Exacerbated By the Project

As noted above, I had the opportunity to observe traffic operations on and near the Project site during a recent morning peak period. I observed many complexities of operation that would be compounded by the Project. The complexities include:

- The restriction of left turns from southbound Bascom into the site and to the building immediately to the south of the Project site and the restriction of left turns from the site's driveways to proceed southbound on Bascom.

- The difficulty of making left turns from the Project's driveways on Woodard.
- Width limitation of Woodard's westbound approach toward Bascom.
- Existence of a 25-foot easement on the easterly side of the Project site that provides access to a parking/loading area at the rear of the property to the south.
- The proximity of the site to Farnham Elementary School and in particular the proximity to the school parking and drop-off/pick-up areas and to the school crosswalk at the intersection of Woodard with Starview Drive that is controlled by crossing guards during the school assembly and dismissal periods. Also, the prevalence of foot traffic and drop-off/pick-up traffic to/from the school during the assembly and dismissal periods.

The following paragraphs describe how the above circumstances combine to create traffic operational and safety problems that are not well described in theoretical *Highway Capacity Manual* level-of-service/delay calculations and that render such calculations irrelevant to assessment of the Project.

Left turns from southbound Bascom into the Project site and the building immediately south of it that houses a liquor/food store, a laundromat, a barber shop and a sports clinic are prohibited by a raised median close to the intersection with Woodard and by a painted median further south. So people southbound on Bascom wishing to access the Project site or the uses in the building to the south of it make a left turn onto Woodard then a right onto or across the Project site. Turns out of the site to continue southbound on Bascom are even more problematic. It is very difficult to weave across three northbound through lanes on Bascom to the turn pocket at Woodard that provides for U-turns to southbound Bascom. It is also very difficult to make a left turn out of the site's driveway(s) to Woodard to then make another left to proceed southbound on Bascom because of either oncoming traffic on Woodard or queued westbound traffic on Woodard. Because of these difficulties making legal movements to get off the site to proceed southbound on Bascom, many drivers can be readily observed solving their problem by making illegal left turns across the painted median from the site's southerly driveway to Bascom.

There is considerable pedestrian and drop-off/pick-up traffic on Woodard associated with morning assembly and afternoon dismissal times at Farnham Elementary school. Substantial queuing on both directions of Woodard occurs because of a combination of factors. The crossing guards who, equipped with hand-held STOP signs, control and protect the school crosswalk across Woodard at Starview Drive, stop traffic more or less whenever there are pedestrians wanting to cross with no intention of coordinating with the signal at Woodard and Bascom. As a result, often there is no traffic on westbound Woodard when this approach receives a green phase - it is all stopped back at Starview by the crossing guards. Or, sometimes when the crossing guards decide to process

traffic through the crosswalk, the signal on the westbound Woodard approach is in red phase so the platoon of traffic released by the crossing guards just forms a substantial queue at the Bascom signal. On eastbound Woodard, queues build and sometimes extend almost into the Bascom intersection, sometimes because the crossing guards stop traffic and also because eastbound traffic attempting to turn left into the schools parking and drop-off areas cannot do so because of flowing or queued westbound traffic.

The above may seem as an indictment of the crossing guards but that is not the intent. They are just focusing on their primary and necessary job of protecting child pedestrians walking to and from school. Our intent is to bring into focus that this is an environmental condition in the immediate area of the Project that creates a circumstance where even relatively small increases in traffic at the Project site would be significantly detrimental.

As noted above, the westbound approach of Woodard from Starview to Bascom is narrow - about 17 feet wide. However, because the north curb of Woodard is posted NO STOPPING ANY TIME, it functions as a de-facto two-lane approach to Bascom with one lane feeding left turns and one right turns - but not all of the time. If a driver intending to make a left does not squeeze over very close to the centerline or a driver intending to make a right is timid and unwilling to squeeze between the left turning queue and the curb or a driver making a left turn from the Project site onto Woodard gets crosswise in the lane (as they tend to do), then the de-facto two lane approach turns into a single lane approach until the signal clears out the queue.

All of the foregoing are operational considerations that demonstrate why conditions at the subject intersection are not adequately measured by normal traffic engineering computation measures for Level-Of- Service and why the Department of Public Works theoretical calculations that the intersection of Bascom and Woodard operates at LOS B and that the Project would only cause delay to increase by 0.2 seconds are irrelevant.

The Limitations of the Project Site and the Extensiveness of Uses Proposed Has Numerous Implications for Traffic Circulation and Safety

The limited size of site, its positioning and configuration and the amount of uses proposed to be jammed onto it have a number of implications for traffic circulation and traffic and pedestrian safety that are not addressed in the City's analysis. These include:

- By Section 20.90.060 of the City's zoning ordinance, the Project is required to provide 19 parking spaces to support the air/water station,

employee parking and information stop functions of the gas station, the retail use and the office space of the Project. The City's review of the Project claims that a total of 21 spaces are provided. But this total is only achieved by counting the 8 spaces at the fuel dispensers. In other words, almost 32 percent[1] of the parking spaces required for non-fuel-dispensing uses proposed on the site is to be met by spaces intended for the fuel dispensers. Because of this, a chaotic situation of queuing is likely to develop during peak times because the fuel dispenser spaces are occupied by vehicles whose drivers are doing something else. This could be particularly problematic because there is insufficient space for vehicles at the three most westerly pairs of fueling positions to maneuver around stopped vehicles in front of them. Only the most easterly pair of fueling positions has sufficient maneuvering space to go around a vehicle stopped in the other position of the pair. This situation could lead to a high incidence of hazardous backing maneuvers. Furthermore, the bypass lane around the fuel position islands is only 15 feet wide. There are only 4 non-fueling parking positions visible on the west side of the building for the predominant northbound traffic entering off South Bascom and one of them is a handicapped stall. When those parking positions are full, as they will be, drivers will park in the bypass lane between the fueling lanes and the retail building , creating a complete blockage and creating queuing chaos. The fundamental layout on the west side of the proposed building is a formula for gridlock.

- As noted previously, there is a 25 foot access easement along the back (easterly) side of the Project site that is intended to service access to and from the building immediately south of the Project site. However, six of the Project's parking stalls at the east side of the carwash extend into this easement, reducing the effective traversable width of the easement to 20.5 feet. Moreover, the parking stalls indicated on the site plan in this area are only 18 feet in length. But some larger pick-ups, vans and SUVs exceed 20 feet in length so when one or more such vehicles is/are parked there, the effective width of the access easement would be reduced by another foot. Furthermore, a masonry wall is to be constructed on the easterly side of the access easement. Except for an insert detail of the masonry wall itself, the site plans show the masonry wall as a thin pencil line. But the detail shows that the wall's footing is 2 feet wide and the face of the wall interior to the Project site is about 1.3 feet west of the easterly limit of its footing. If the entirety of the wall including excavation for the footing and the forms for constructing it are kept outside the property lines of the neighboring properties to the east, then the effective traversable width of the access easement would be further reduced by another 2 feet bringing its net effective traversable width down to about 17.5 feet or less.

[1] Six of the required nineteen spaces.

This is less than the normal width of a two-way parking aisle. The businesses in the building immediately south of the proposed Project site depend on the common access easement to have convenient access for patrons accessing those sites from southbound South Bascom Avenue via a left turn at Woodard and a right turn onto the access easement roadway or approaching and departing via Woodard alone. The configuration of the Project's parking in this area, the closure of one the other existing driveway to Woodard and the angle of the proposed Project parking in the easement and the alignment of the proposed Project's carwash flow from south to north effectively make the easement a one-way northbound passage.

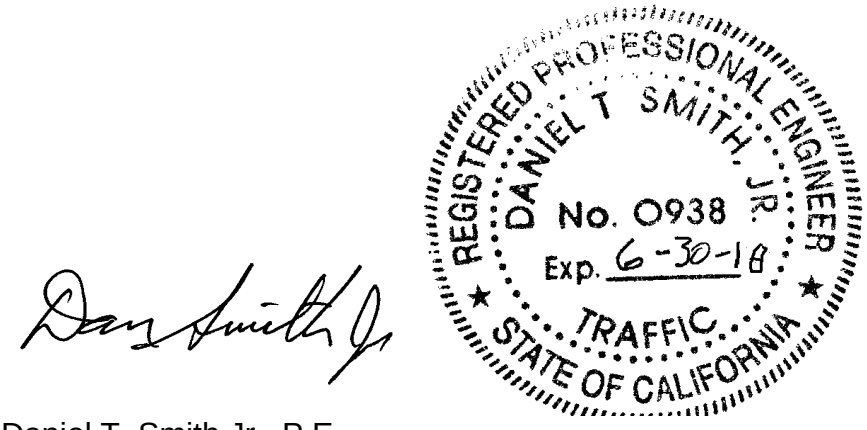
- At present numbers of school parents/caregivers briefly park in the access easement while dropping-off or picking-up their children at Farnham Elementary. If these temporary parkers are displaced, they will add to the problematic congestion and queuing on Woodard described previously.
- Vehicles parked in the parking stall closest to the door at the southwest corner of the building must back into or very close to the pedestrian walkway to/from that same door. This is an undesirable and potentially hazardous configuration, perhaps particularly so since this is a handicapped stall.

Conclusion

This concludes my supplemental comments on the subject Project.

Sincerely,

Smith Engineering & Management
A California Corporation



Daniel T. Smith Jr., P.E.

SMITH ENGINEERING & MANAGEMENT

DANIEL T. SMITH, Jr.
President

EDUCATION

Bachelor of Science, Engineering and Applied Science, Yale University, 1967
Master of Science, Transportation Planning, University of California, Berkeley, 1968

PROFESSIONAL REGISTRATION

California No. 21913 (Civil)
California No. 938 (Traffic)
Nevada No. 7969 (Civil)
Washington No. 29337 (Civil)
Arizona No. 22131 (Civil)

PROFESSIONAL EXPERIENCE

Smith Engineering & Management, 1993 to present. President.
DKS Associates, 1979 to 1993. Founder, Vice President, Principal Transportation Engineer.
De Leuw, Cather & Company, 1968 to 1979. Senior Transportation Planner.
Personal specialties and project experience include:

Litigation Consulting. Provides consultation, investigations and expert witness testimony in highway design, transit design and traffic engineering matters including condemnations involving transportation access issues; traffic accidents involving highway design or traffic engineering factors; land use and development matters involving access and transportation impacts; parking and other traffic and transportation matters.

Urban Corridor Studies/Alternatives Analysis. Principal-in-charge for State Route (SR) 102 Feasibility Study, a 35-mile freeway alignment study north of Sacramento. Consultant on I-280 Interstate Transfer Concept Program, San Francisco, an AA/EIS for completion of I-280, demolition of Embarcadero freeway, substitute light rail and commuter rail projects. Principal-in-charge, SR 238 corridor freeway/expressway design/environmental study, Hayward (Calif.) Project manager, Sacramento Northeast Area multi-modal transportation corridor study. Transportation planner for I-80N West Terminal Study, and Harbor Drive Traffic Study, Portland, Oregon. Project manager for design of surface segment of Woodward Corridor LRT, Detroit, Michigan. Directed staff on I-80 National Strategic Corridor Study (Sacramento-San Francisco), US 101-Sonoma freeway operations study, SR 92 freeway operations study, I-880 freeway operations study, SR 152 alignment studies, Sacramento RTD light rail systems study, Tasman Corridor LRT AA/EIS, Fremont-Warm Springs BART extension plan/EIR, SRs 70/99 freeway alternatives study, and Richmond Parkway (SR 93) design study.

Area Transportation Plans. Principal-in charge for transportation element of City of Los Angeles General Plan Framework, shaping nations largest city two decades into 21'st century. Project manager for the transportation element of 300-acre Mission Bay development in downtown San Francisco. Mission Bay involves 7 million gsf office/commercial space, 8,500 dwelling units, and community facilities. Transportation features include relocation of commuter rail station; extension of MUNI-Metro LRT; a multi-modal terminal for LRT, commuter rail and local bus; removal of a quarter mile elevated freeway; replacement by new ramps and a boulevard; an internal roadway network overcoming constraints imposed by an internal tidal basin; freeway structures and rail facilities; and concept plans for 20,000 structured parking spaces. Principal-in-charge for circulation plan to accommodate 9 million gsf of office/commercial growth in downtown Bellevue (Wash.). Principal-in-charge for 64 acre, 2 million gsf multi-use complex for FMC adjacent to San Jose International Airport. Project manager for transportation element of Sacramento Capitol Area Plan for the state governmental complex, and for Downtown Sacramento Redevelopment Plan. Project manager for Napa (Calif.) General Plan Circulation Element and Downtown Riverfront Redevelopment Plan, on parking program for downtown Walnut Creek, on downtown transportation plan for San Mateo and redevelopment plan for downtown Mountain View (Calif.), for traffic circulation and safety plans for California cities of Davis, Pleasant Hill and Hayward, and for Salem, Oregon.

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Transportation Centers. Project manager for Daly City Intermodal Study which developed a $7 million surface bus terminal, traffic access, parking and pedestrian circulation improvements at the Daly City BART station plus development of functional plans for a new BART station at Colma. Project manager for design of multi-modal terminal (commuter rail, light rail, bus) at Mission Bay, San Francisco. In Santa Clarita Long Range Transit Development Program, responsible for plan to relocate system's existing timed-transfer hub and development of three satellite transfer hubs. Performed airport ground transportation system evaluations for San Francisco International, Oakland International, Sea-Tac International, Oakland International, Los Angeles International, and San Diego Lindberg.

Campus Transportation. Campus transportation planning assignments for UC Davis, UC Berkeley, UC Santa Cruz and UC San Francisco Medical Center campuses; San Francisco State University; University of San Francisco; and the University of Alaska and others. Also developed master plans for institutional campuses including medical centers, headquarters complexes and research & development facilities.

Special Event Facilities. Evaluations and design studies for football/baseball stadiums, indoor sports arenas, horse and motor racing facilities, theme parks, fairgrounds and convention centers, ski complexes and destination resorts throughout western United States.

Parking. Parking programs and facilities for large area plans and individual sites including downtowns, special event facilities, university and institutional campuses and other large site developments; numerous parking feasibility and operations studies for parking structures and surface facilities; also, resident preferential parking .

Transportation System Management & Traffic Restraint. Project manager on FHWA program to develop techniques and guidelines for neighborhood street traffic limitation. Project manager for Berkeley, (Calif.), Neighborhood Traffic Study, pioneered application of traffic restraint techniques in the U.S. Developed residential traffic plans for Menlo Park, Santa Monica, Santa Cruz, Mill Valley, Oakland, Palo Alto, Piedmont, San Mateo County, Pasadena, Santa Ana and others. Participated in development of photo/radar speed enforcement device and experimented with speed humps. Co-author of Institute of Transportation Engineers reference publication on neighborhood traffic control.

Bicycle Facilities. Project manager to develop an FHWA manual for bicycle facility design and planning, on bikeway plans for Del Mar, (Calif.), the UC Davis and the City of Davis. Consultant to bikeway plans for Eugene, Oregon, Washington, D.C., Buffalo, New York, and Skokie, Illinois. Consultant to U.S. Bureau of Reclamation for development of hydraulically efficient, bicycle safe drainage inlets. Consultant on FHWA research on effective retrofits of undercrossing and overcrossing structures for bicyclists, pedestrians, and handicapped.

MEMBERSHIPS
Institute of Transportation Engineers Transportation Research Board

PUBLICATIONS AND AWARDS
Residential Street Design and Traffic Control, with W. Homburger *et al*. Prentice Hall, 1989.
Co-recipient, Progressive Architecture Citation, *Mission Bay Master Plan*, with I.M. Pei WRT Associated, 1984.
Residential Traffic Management, State of the Art Report, U.S. Department of Transportation, 1979.
Improving The Residential Street Environment, with Donald Appleyard et al., U.S. Department of Transportation, 1979.
Strategic Concepts in Residential Neighborhood Traffic Control, International Symposium on Traffic Control Systems, Berkeley, California, 1979.
Planning and Design of Bicycle Facilities: Pitfalls and New Directions, Transportation Research Board, Research Record 570, 1976.
Co-recipient, Progressive Architecture Award, *Livable Urban Streets, San Francisco Bay Area and London*, with Donald Appleyard, 1979.