February 3, 2021

Mr. Matt Ashton
ASHTON 3, LLC.
5 Hoya Street
Rancho Mission Viejo, CA 92694

Subject: Vivian Residential Development Trip Generation & VMT Analysis, City of San Rafael, CA

Dear Mr. Ashton:

RK ENGINEERING GROUP, INC. (RK) is pleased to provide this Trip Generation Memorandum and Vehicle Miles traveled (VMT) evaluation for the proposed Vivian Residential Project in the City of San Rafael.

The proposed Vivian Residential project consists of 70 multi-family residential dwelling units on 2.41 acres.

The project site is located south of Vivian Street and west of Belvadere Street in the City of San Rafael.

The proposed project will displace the existing bowling alley with a total size of 37,438 square feet.

The proposed project is planned to open in 2022. The traffic analysis will evaluate the proposed project in one single phase.

Access for the project is planned to continue to be provided via the following:

- Two full access unsignalized driveways on Vivian Street.

Exhibit A shows the location of the proposed project. Exhibit B shows the proposed site plan.

A. Existing Use Trip Generation:

As previously noted, the proposed project will displace the existing bowling alley with a total size of 37,438 square feet.

Trip generation is typically estimated based on the trip generation rates from the latest *Institute of Transportation Engineers (ITE) Trip Generation Manual*. The latest and most recent version (10th edition, 2017) ITE Manual has been utilized for this traffic study. This publication provides a comprehensive evaluation of trip generation rates for a variety of land uses.

Table 1 shows the ITE trip generation rates utilized for the trip generation analysis of the existing land use planned to be displaced by the proposed project.

Table 2 shows the trip generation for the existing use utilizing the ITE trip generation rates shown in Table 1.

As shown in Table 2, based on ITE trip generation rates, the existing use which will be displaced by the proposed project currently generates generate approximately 434 daily trips which include approximately 31 AM peak hour trips and approximately 43 PM peak hour trips.

As requested by City staff, alternatively, aside the ITE trip generation, the trip generation of the existing land use has been calculated utilizing *Vehicular Traffic Generation Rates for the San Diego Region*, which another published source of data for trip generation estimation published and utilized by the San Diego Association of Governments (SANDAG).

Table 3 shows the SANDAG trip generation rates utilized for the trip generation analysis of the existing land use planned to be displaced by the proposed project.

Table 4 shows the trip generation for the existing use utilizing the SANDAG trip generation rates shown in Table 3.

As shown in Table 4, based on SANDAG trip generation rates, the existing use which will be displaced by the proposed project currently generates generate approximately 1,123

daily trips which include approximately 79 AM peak hour trips and approximately 124 PM peak hour trips.

Since the SANDAG trip generation is much higher than the ITE-based trip generation for the existing use, this analysis conservatively utilizes the ITE-based trip generation for the existing use.

B. Proposed Project Trip Generation & Potential Impacts on Surrounding Circulation System:

Trip generation is typically estimated based on the trip generation rates from the latest *Institute of Transportation Engineers (ITE) Trip Generation Manual*. The latest and most recent version (10th edition, 2017) ITE Manual has been utilized for this traffic study. This publication provides a comprehensive evaluation of trip generation rates for a variety of land uses.

Table 1 shows the ITE trip generation rates utilized for the trip generation analysis of the proposed project's land use.

Table 5 shows the trip generation for the proposed project utilizing the ITE trip generation rates shown in Table 1.

As shown in Table 5, based on ITE trip generation rates, the proposed project is forecast to generate approximately 512 daily trips which include approximately 32 AM peak hour trips and approximately 40 PM peak hour trips.

Table 6 shows the net trip generation for the proposed project after accounting for the displaced existing land use per the ITE-based trip generation forecasts from Table 2 and Table 5.

As shown in Table 6, when compared to the existing use, the proposed use is forecast to generate approximately 78 net additional daily trips which include approximately the one (1) net additional AM peak hour trip and approximately 5 net fewer PM peak hour trips.

It should be noted once the project trips are distributed throughout the roadway system and intersections, the number of trips added to each roadway or intersection is even less.

Based on traffic engineering and industry standards, a traffic study is generally required for projects that generate 50 or more peak hour trips or 500 daily trips.

Since the proposed project is forecast to generate approximately 78 net additional daily trips which include approximately the one (1) net additional AM peak hour trip and approximately 5 net fewer PM peak hour trips, a traffic study and level of service analysis will not be required for the proposed project.

Hence, based on the trip generation analysis for the proposed project and the nominal number of peak hour and daily trips, a traffic study is not required for the proposed project and the proposed project is forecast to not result in significant changes in the traffic operations of the surrounding circulation system.

C. Vehicle Miles Traveled (VMT) Evaluation:

The updated CEQA Guidelines certified and adopted by the California Natural Resources Agency in December 2018 are now in effect. Accordingly, Public Works recognizes the need to provide information based on guidance from the Office of Planning and Research and the California Air Resources Board on the assessment of vehicle miles traveled (VMT), thresholds of significance, and mitigation measures for development projects and land use plans.

For development projects, the intent is to assess whether a proposed project or plan adequately reduces total VMT. The following general screening criteria and impact criteria are only meant to serve as guidance for projects to determine whether a Transportation Impact Analysis should be performed, and the criteria to determine if a project generates a significant transportation impact. The criteria shall be determined on a project-by-project basis as approved by Public Works:

General Non-Retail Project Trip Generation Screening Criteria

If the answer is no to the question below, further analysis is not required, and a less than significant determination can be made.

- Does the development project generate a net increase of 110 or more daily vehicle trips?

The proposed project can be expected to have a less than significant VMT impact since it generates a nominal number of NET peak hour or even daily trips which is significantly less than 110 trips per day.

Hence, the proposed project is screened out from requiring an VMT analysis and is considered to have a less than significant VMT impact.

D. Site Access Vehicle Turning Movement:

As requested by City staff, an evaluation of vehicle turning maneuvers has been conducted at the two site access locations. The evaluation is prepared utilizing a trash truck which is expected to be the largest potential vehicle size accessing the site.

Exhibit C shows the results of the turning maneuver evaluation at the site access locations.

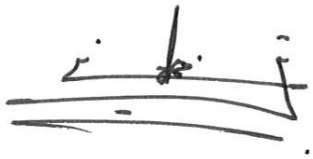
E. Conclusions & Findings:

Based on the trip generation analysis for the proposed project and the nominal number of peak hour and daily trips, a traffic study is not required for the proposed project and the proposed project is forecast to not result in significant changes in the traffic operations of the surrounding circulation system.

Also, the proposed project is screened out from requiring an VMT analysis and is considered to have a less than significant VMT impact.

If you have any questions regarding this technical memorandum and evaluation, please call me at (949) 474-0809.

Respectfully submitted,
RK ENGINEERING GROUP, INC.

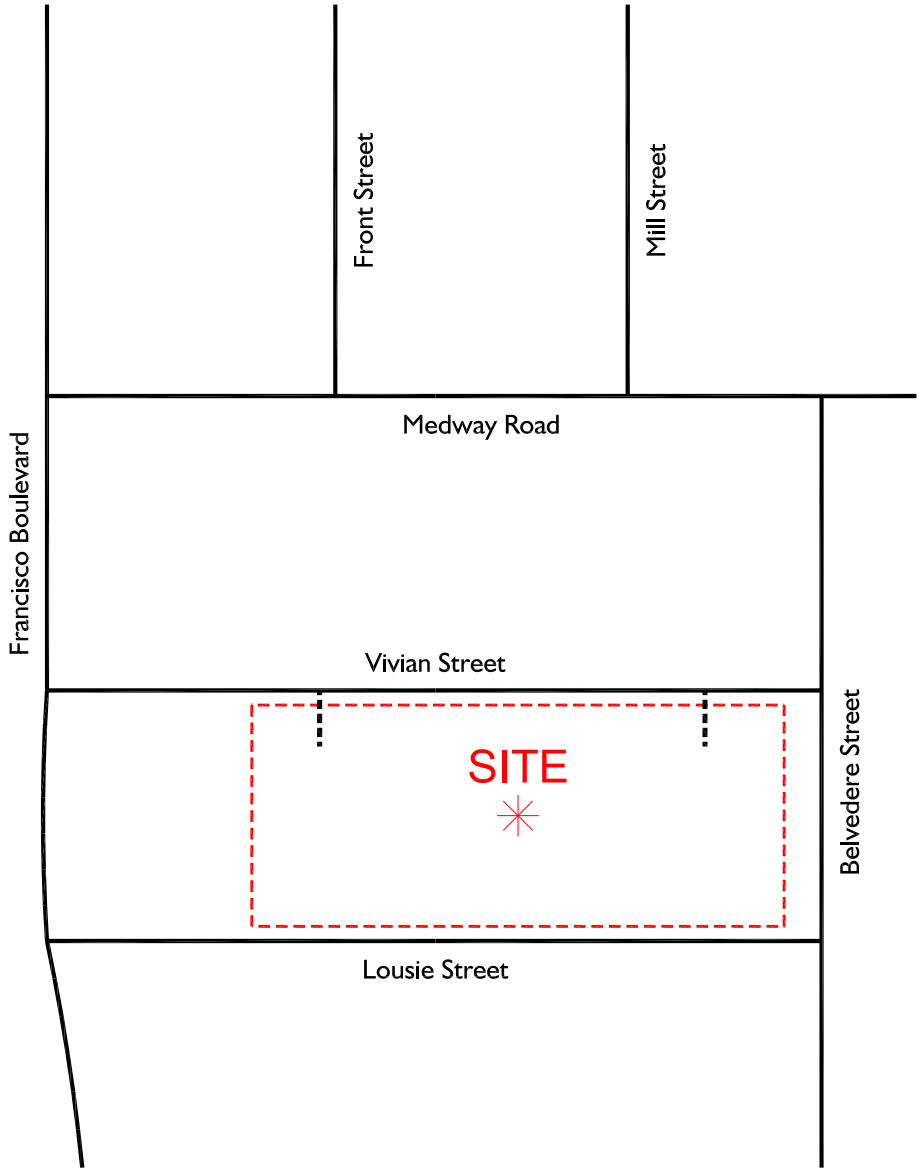


Alex Tabrizi, PE, TE
Principal

Attachments

Attachments

Exhibit A
Location Map



Legend:

= Project Site

= Project Access Driveway

= Project Site Boundary

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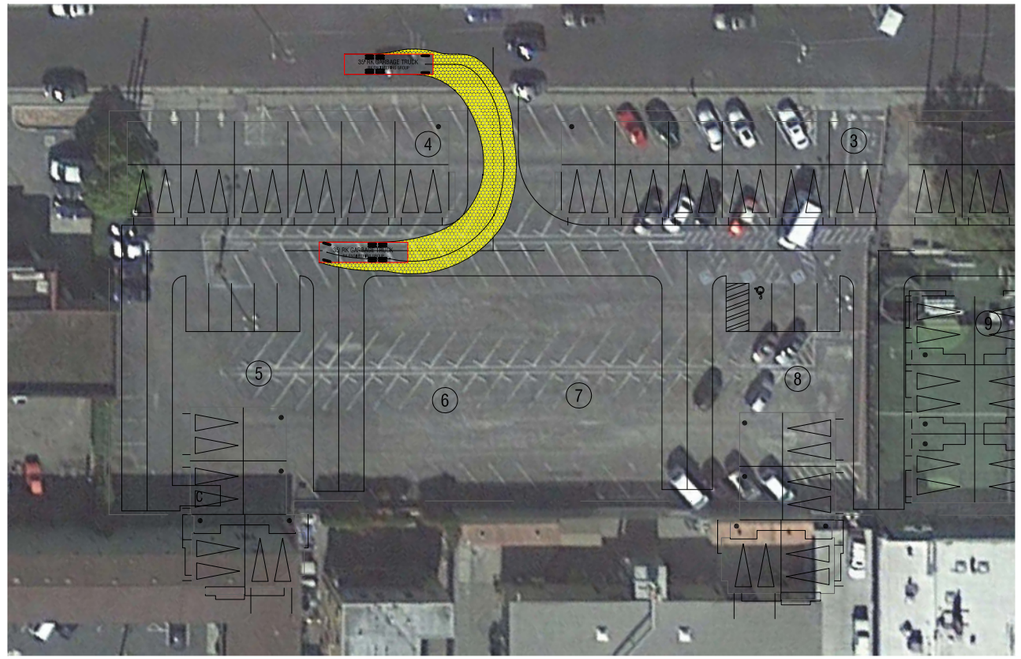
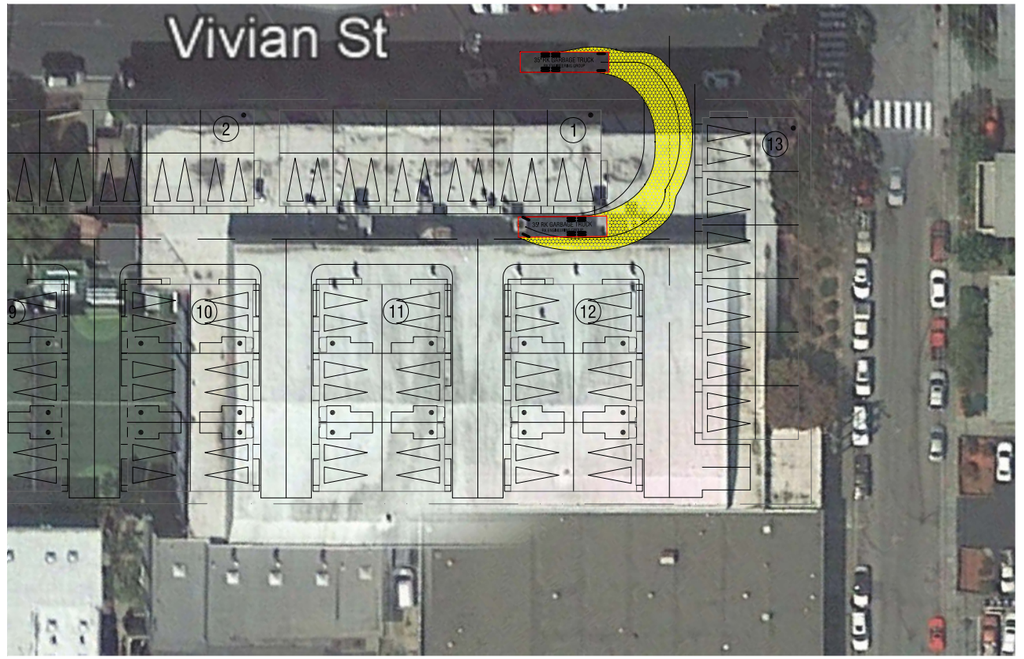
Exhibit B
Site Plan

Exhibit C

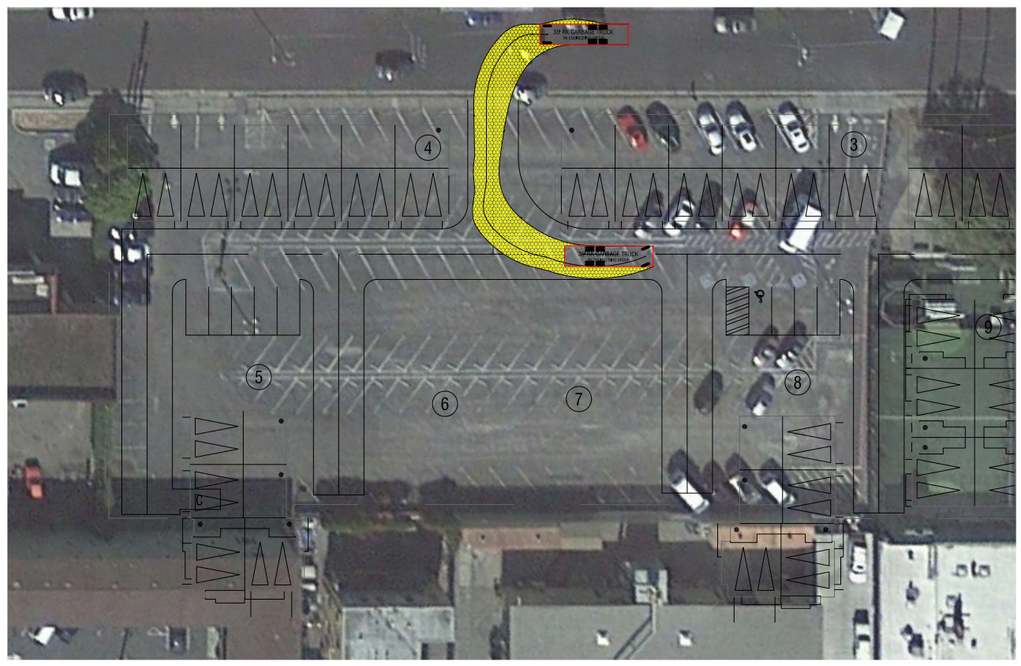
35' Garbage Truck TurningTemplate





Notes:

Design Vehicle - Garbage Truck
Length - 35'
Width - 8'
Track - 7.5'
Steering Angle - 36.8 Degrees
Articulating Angle - 70.0 Degrees
Lock to Lock Time - 6.0 Seconds



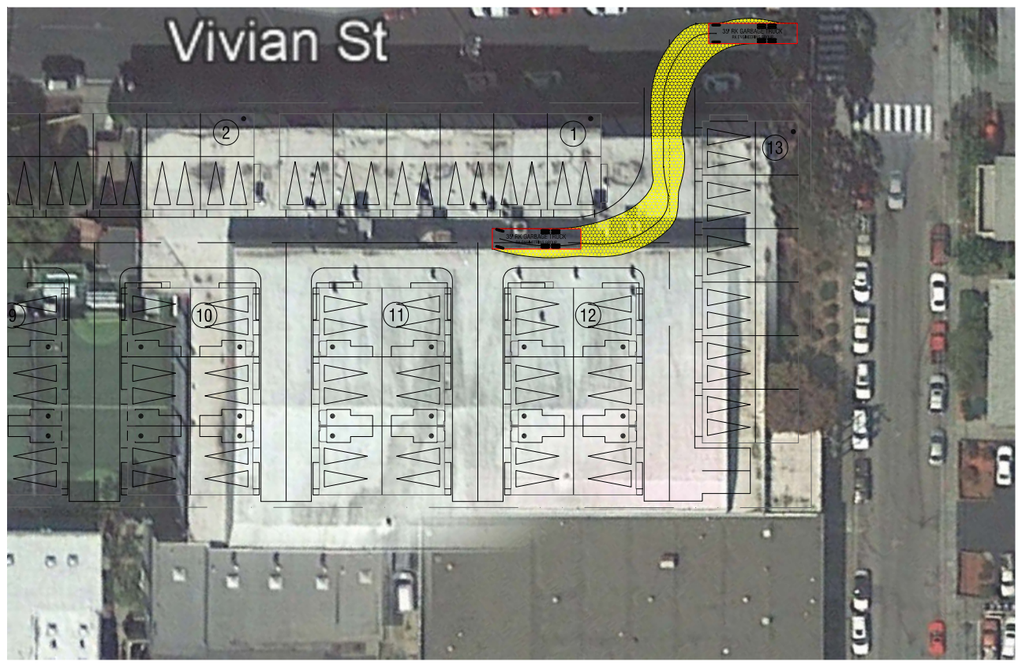


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Table 1
ITE Trip Generation Rates[1]

Land Use	Units[2]	ITE Code	AM			PM			Daily
			In	Out	Total	In	Out	Total	
Multi-Family Low-Rise Residential Homes	DU	220	0.11	0.35	0.46	0.35	0.21	0.56	7.32
Bowling Alley	TSF	437	0.77	0.04	0.81	0.75	0.41	1.16	11.60

[1] Source: *2017 ITE Trip Generation Manual (10th Edition)*

[2] TSF = Thousand Square Feet; DU = dwelling units

[3] The 2017 ITE Trip Generation Manual has not published daily trip generation rates for bowling alley use. Therefore the daily trip rates for bowling alley use are based on weekday PM peak hour trip rates (Daily = 10 x PM).

Table 2
Existing Land Use Trip Generation[1]

Existing Land Uses									
Land Use (ITE Code)	**Quantity**	**Units[2]**	**AM**			**PM**			**Daily**
			In	**Out**	**Total**	**In**	**Out**	**Total**	
Bowling Alley (437)	37.438	TSF	29	2	31	28	15	43	434

[1] Source: *2017 ITE Trip Generation Manual (10th Edition)*

[2] TSF = thousand square feet

Table 3
SANDAG Trip Generation Rates[1]

Land Use	Units[2]	AM			PM			Daily
		In	Out	Total	In	Out	Total	
Bowling Center	TSF	70% of Total AM Trips	30% of Total AM Trips	7% of Daily Trip Generation	40% of Total PM Trips	60% of Total PM Trips	11% of Daily Trip Generation	30 Trips per 1,000 Square Feet

[1] Source: *Vehicular Traffic Generation Rates for the San Diego Region.*

[2] TSF = Thousand Square Feet

Table 4
Trip Generation of Existing Use[1]

Land Use	Quantity	Units[2]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Bowling Center	37.438	TSF	55	24	79	50	74	124	1,123

[1] Source: *Vehicular Traffic Generation Rates for the San Diego Region.*

[2] TSF = Thousand Square Feet

Table 5
Proposed Use Trip Generation[1]

Proposed Land Uses									
Land Use (ITE Code)	**Quantity**	**Units[2]**	**AM**			**PM**			**Daily**
			In	**Out**	**Total**	**In**	**Out**	**Total**	
Multi-Family Low-Rise Residential Homes (220)	70	DU	7	25	32	25	15	40	512

[1] Source: *2017 ITE Trip Generation Manual (10th Edition)*

[2] DU = dwelling units

Table 6
Project Net Trip Generation[1]

Land Use	AM			PM			Daily
	In	Out	Total	In	Out	Total	
Proposed Use	7	25	32	25	15	40	512
Existing Use	-29	-2	-31	-28	-15	-43	-434
Net Trip Generation	**-22**	**23**	**1**	**-3**	**0**	**-3**	**78**

[1] Source: *2017 ITE Trip Generation Manual (10th Edition)*