

Memorandum

Date: September 8, 2020
To: Jan Unlu, Lab LCC
From: Robert Eckols and Mark Soendjojo, Fehr & Peers
Subject: 376 First Street Housing Development Traffic Analysis

SJ20-2019

This memorandum presents the findings of a traffic analysis (TA) for a proposed 15-unit housing development that will replace an existing restaurant located at 376 First Street in Los Altos. Based on comments received from the City of Los Altos, this traffic analysis addresses the following topics:

- trip generation, distribution, and assignment of project trips
- vehicle miles traveled (VMT) analysis per SB 743
- review of relevant planning / policy documents
- site circulation and access including the parking ramp, garage door operation, and sight distance

Based on our analysis, Fehr & Peers has reached the following conclusions:

- The proposed housing development will reduce the volume of traffic on First Street by generating 320 fewer daily trips, 16 fewer AM peak hour trips, and 34 fewer PM peak hour trips than the existing restaurant.
- This project would be screened from further VMT analysis based on the project VMT generated being lower than the VMT threshold.
- The project aligns with the policies in both the Los Altos General Plan and the VTA TIA Guidelines.
- Installation of convex mirrors in the corners of the ramp and use of car coming signage will ensure that vehicles can safely enter and exit the garage and avoid conflicts with other vehicles, pedestrians, or bicycles.
- The sight stopping distance on First Street is adequate for a 25 mph design speed.



- The garage door operation will not cause a significant delay on the driveway or on First Street.

Project Description

The proposed residential project is located at 376 First Street and replaces an existing 4,800 square foot restaurant with a four story 15-unit housing development. The project is within a commercial area of Downtown Los Altos. The project site fronts on and has access to First Street on the east and is bounded by a parking lot to the north, a commercial building to the south, and Foothill Expressway to the west (without access). The project will provide 23 parking spaces located in an underground parking structure.

Trip Generation Estimates

Fehr & Peers prepared daily, AM peak hour, and PM peak hour vehicle trip generation estimates for the proposed project. The trip generation estimates were prepared using the trip rates from the latest version of the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 10th Edition (2017) using the rates for quality restaurant (Land Use Code 931) and multifamily housing (Land Use Code 221). Project trip generation was calculated using the average rates based on building square footage for the restaurant and number of dwelling units for the housing.

Table 1 shows the trip generation estimated for the existing restaurant, the proposed multifamily housing, and the net trip generation for the project (project trips minus existing trips). The existing restaurant generates 402 daily trips, 21 AM peak hour trips, and 40 PM peak hour trips. The proposed project will generate 82 daily trips, 5 AM peak hour trips, and 6 PM peak hour trips. Therefore, the proposed project will reduce the number of trips generated on the site, with 320 fewer daily trips, 16 fewer AM peak hour trips, and fewer 34 less PM peak hour trips.

Trip Distribution and Assignment

The project site is accessed from First Street, with nearby connections to Foothill Expressway, San Antonio Road, and Main Street. Since the project will generate only a small number of trips, we assumed that the trips would be evenly split between going north and going south on First Street, as can be seen in **Figure 1**. However, the project will actually lower the number of trips on First Street during the AM and PM peak hours and on a daily basis.

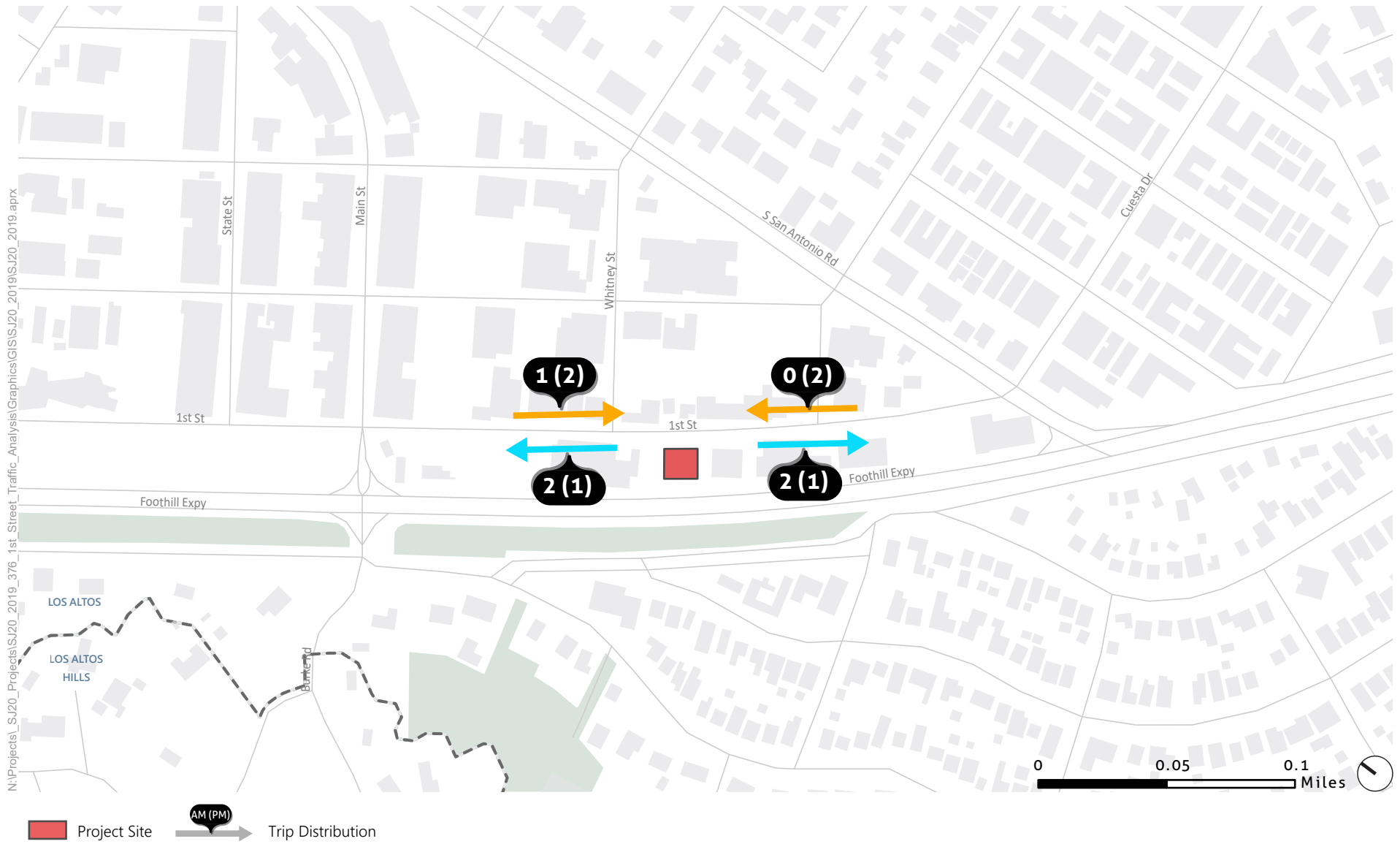


Figure 1
Trip Distribution and Assignment



Table 1: Trip Generation Summary

Land Use	Size ¹	Weekday Daily Total	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Quality Restaurant ² (A)	4.8 ksf	402	17	4	21	24	16	40
Multifamily Housing (Mid-Rise) ² (B)	15 DU	82	1	4	5	4	2	6
Total Net New Project Trips (B-A)		-320	-16	0	-16	-20	-14	-34

Existing Quality Restaurant Trip Generation:

- ksf = 1,000 square feet
- Following ITE trip generation equations used (ITE Code 931 – Quality Restaurant, 10th Edition):
 Weekday Daily: Average Rate – 83.84 per KSF, Enter = 50%, Exit = 50%
 AM: Average Rate – 4.47 per KSF; Enter = 80%, Exit = 20%
 PM: Average Rate – 8.28 per KSF; Enter = 61%, Exit = 39%

Proposed Multifamily Housing Trip Generation:

- DU = dwelling units
- Following ITE trip generation equations used (ITE Code 221 – Multifamily Housing (Mid-Rise), 10th Edition):
 Weekday Daily: Average Rate – 5.44 per DU, Enter = 50%, Exit = 50%
 AM: Average Rate – .32 per DU; Enter = 27%, Exit = 73%
 PM: Average Rate – .41 per DU; Enter = 60%, Exit = 40%

Sources: *Trip Generation Manual*, 10th Edition, Institute of Transportation Engineers (ITE), 2017; Fehr & Peers 2020.

Project Vehicle Miles Traveled Estimates

The project VMT was calculated based on the project’s new daily trip generation as well as an estimate of average trip lengths related to the project. Using the data from the 2012 California Household Travel Survey (CHTS), the average vehicle trip length for California households is 7.9 miles. As shown in **Table 2**, the project generates 648 VMT.

Table 2: Project VMT Estimate

	Project Daily Trip Generation	Average Vehicle Trip Length (miles) ¹	Project Generated VMT
Total	82	7.9	648

1. From 2012 California Household Travel Survey (CHTS)
 Source: 2012 CHTS; Fehr & Peers 2020.

Small Project Screening for SB 743

The City of Los Altos is in the process of implementing SB 743 and may continue to issue guidance regarding when a full transportation analysis is necessary by, for instance, allowing the screening of small projects from VMT analysis, or requiring only qualitative VMT assessment for small projects. At this time, the small project screening criteria that the City of Los Altos is



considering is based on the OPR *Technical Advisory* (page 12) to screen projects that generate or attract fewer than 110 trips per day. Rather than using this daily vehicle trip threshold, the City is considering small project screening that is based on the CEQA Statue & Guidelines categorical exemption for existing facilities less than 10,000 square feet (§ 15301, subdivision. (e)(2).) and generate or attract fewer than 836 daily VMT. The 836 daily VMT is based on the small project trigger research presented in **Attachment A**. The 836 daily VMT small project screening threshold uses OPR's estimate of 110 daily vehicle trips for screening small non-residential projects of 10,000 square feet or less and average trip length data from the CHTS.

This project meets the CEQA Statue & Guidelines categorical exemption for existing facilities less than 10,000 square feet (§ 15301, subdivision. (e)(2).), and as noted in **Table 2**, the Project would generate 648 daily VMT, which is lower than the 836 VMT threshold for projects smaller than 10,000 square feet. Therefore, this project would be screened from further VMT analysis.

Review of Planning Documents

Los Altos General Plan (City of Los Altos, 2002)

The circulation element of the Los Altos General Plan outlines the various policies governing transportation within the city. The city at that time had not adopted policies or implementation measures regarding specific TDM measures.

The policies governing this development include the following:

Policy 2.4: Require development project to mitigate their respective traffic and parking impacts by implementing practical and feasible street improvements.

- As this project will generate less trips than the current use, no mitigation is necessary.

Policy 2.6: Implement and require developers to implement street improvements that accommodate and encourage the use of non-automobile travel modes including walking, bicycling, and transit.

- Currently, the existing site does not include a defined sidewalk in front of the restaurant. The project will provide a formal sidewalk for pedestrians along First Street and bike parking for eighteen bikes in the underground garage.

Policy 4.4: Provide trails, sidewalks or separated pathways in areas where needed to provide safe bicycle and pedestrian access to schools.

- The sidewalks on First Street continues to Cuesta Drive, which connects to Covington Elementary School through Arboleda Drive per the Los Altos Suggested Routes to School Map for Covington Elementary School.



Policy 5.1: Continue to encourage off-street parking in residential areas.

- The development provides 23 off-street parking spaces and meets the code requirement of 22 spaces. The code requires 1 space per 1-bedroom unit (8 units) and 2 spaces per 2-bedroom unit (7 units).

VTA TIA Guidelines (Valley Transportation Authority, 2014)

The Santa Clara Valley Transportation Authority (VTA) Traffic Impact Analysis (TIA) Guidelines outlines when a TIA is needed for a project in Santa Clara County and what a TIA should include. Per the VTA TIA Guidelines, a TIA is not required for this project, as it does not generate more than 100 or more net new weekday AM or PM peak hour trips.

Site Circulation and Access

The proposed site plan includes an underground parking structure with a single driveway to access First Street. First Street is a local road with one travel lane in each direction and parallel parking on both sides of the street. Concrete or asphalt sidewalks are provided on both sides of the street for pedestrians. The speed limit is 25 mph.

Underground Garage Circulation and Maneuverability

To assess the underground parking vehicle circulation and maneuverability, Fehr & Peers conducted a turning template analysis for entering and exiting the garage. The analysis showed that only one vehicle can safely enter / exit the car at a time, since a vehicle leaving the garage will encroach on the path of the vehicle entering the garage, as shown in **Figure 2**.

The mirror at the bottom of the ramp will help both outgoing and incoming cars to see around the corner, as the cars leaving the garage will encroach on the path of the cars entering the garage, as described earlier. The mirror at the top of the ramp will allow drivers to see if any pedestrians are coming from their right side and will allow pedestrians coming from the south to see if any cars are exiting. The mirror near the puzzle lift will allow both drivers exiting and drivers entering to see if any cars are coming around the corner.

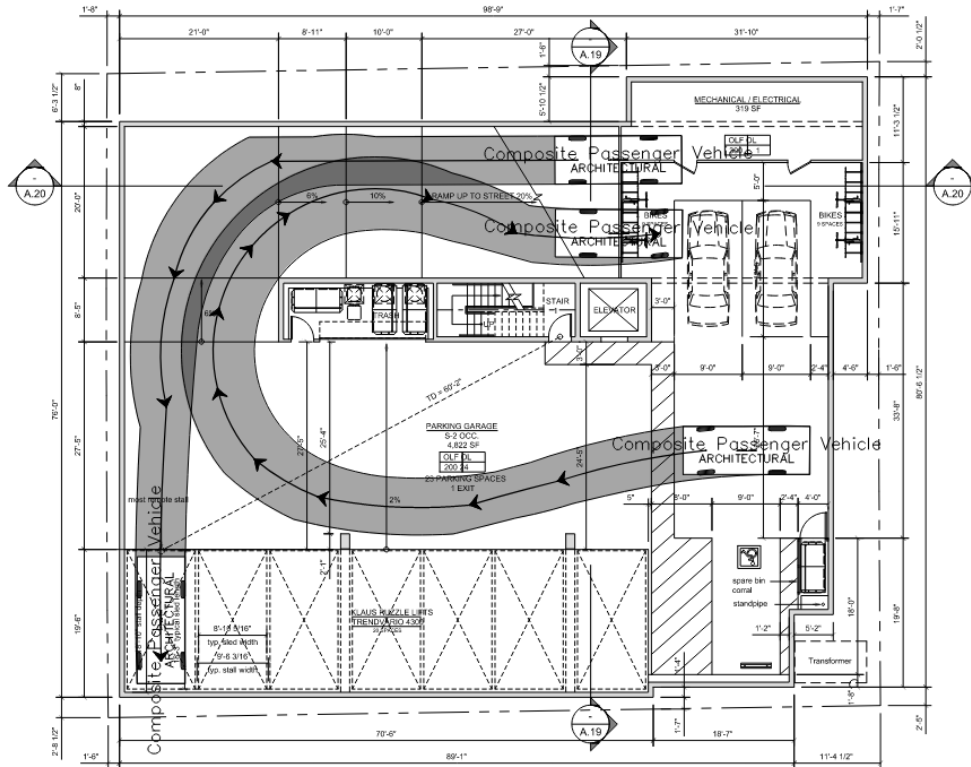


Figure 2: AutoTurn Analysis for Entering / Exiting Garage

Visibility of Vehicles Entering and Exiting Driveway

To determine the visibility of vehicles exiting the garage, we conducted a sight stopping distance analysis. The sight stopping distance analysis tests to see if the drivers traveling north or south on First Street will be able to see vehicles exiting the driveway with sufficient stopping distance to avoid a collision. Using the engineering standards from the Caltrans' *Highway Design Manual*, 6th Edition (2019), the sight stopping distance for a design speed of 25 mph is 150 feet. The sight stopping distance of 150 feet is achieved for the drivers coming from both the north and south, as shown in **Figure 3**.

Pedestrian Safety and Safe Routes to School

A car coming sign with a flashing light and audible warning will be provided to alert pedestrians and bicyclists when a car is exiting the parking structure.

Covington Elementary School is the closest school to the project site. To access Covington Elementary School, students and parents can walk or bike on First Street, which turns into Cuesta Drive. Students and parents can proceed down Cuesta Drive to Arboleda Drive and access the school using the connector path as identified in the Los Altos Suggested Routes to School Map for Covington Elementary School. The walking and bicycle route to Covington School is shown in **Figure 4** below and the Safe Route to School Map is attached to this memo.



Ramp and Garage Door Evaluation

Fehr & Peers evaluated the slope of the ramp to see if there would be any concerns. At the street level, the slope transitions from 5% east of the garage door to 10% west of the garage door and to 20% on the ramp. At the bottom of the ramp, transitions back to 10% and then to 6% as it turns the corner. We do not foresee any issues with the slope of the ramp, even though a portion of the ramp has a 20% slope.

The garage door will take about 12 seconds to either open or close. When a vehicle is waiting to enter it will block traffic on First Street. It should be noted that 12 seconds of delay is the about same amount of delay associated with Level of Service A operation at a stop sign controlled intersection. Therefore, the amount of delay associated with garage door operation will not cause a significant amount of delay to vehicles on the on First Street. In addition, there are less than five peak hour trips which reduces the potential for queuing impacts.

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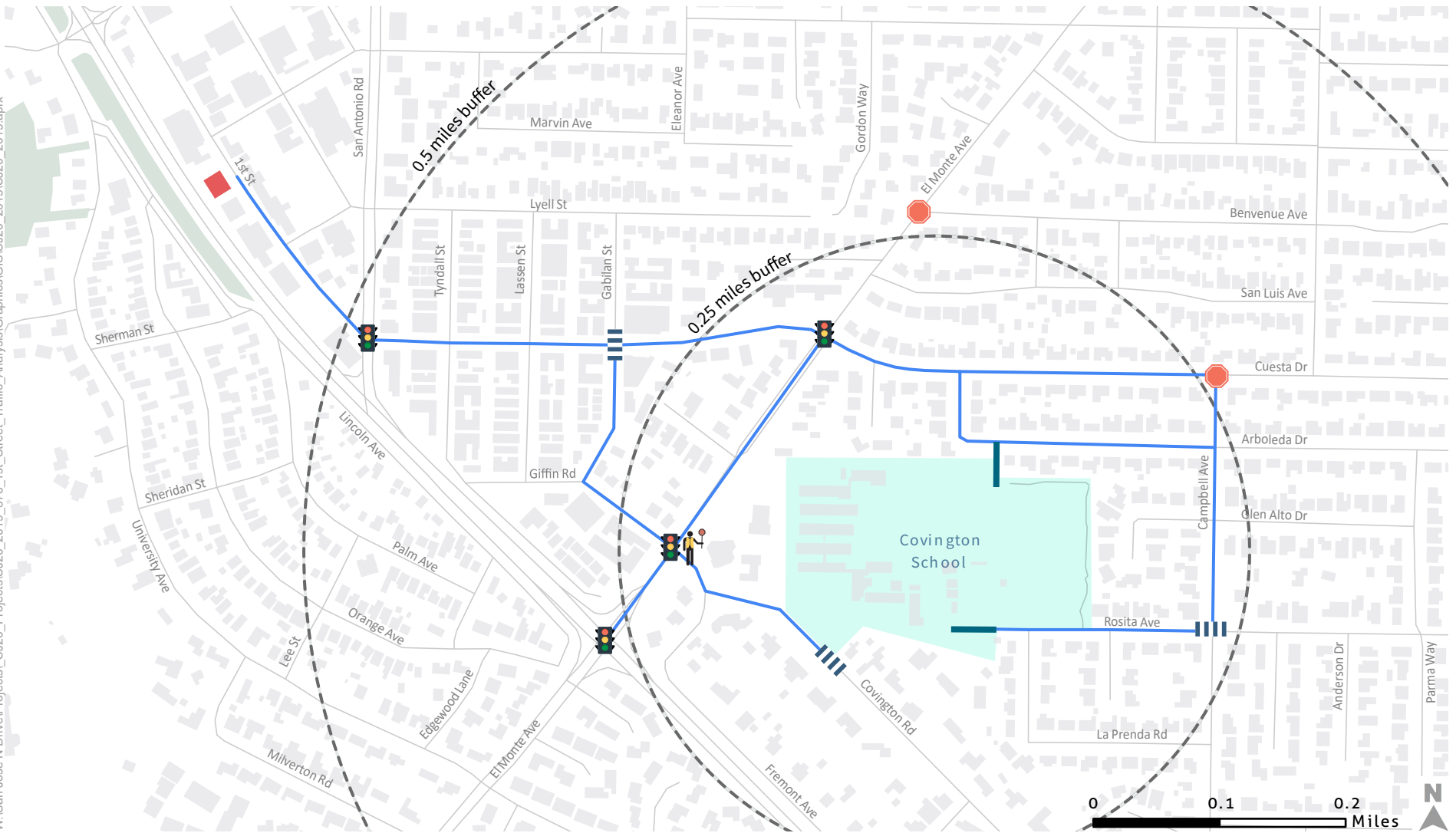
 Project Site  Stopping Sight Distance (SSD) Triangle



Figure 3
Sight Stopping Distance



- Project Site
- School
- Suggested Routes
 - Connector Path
 - Suggested Walking & Biking Route
- All-Way Stop
- Crossing Guard Location
- Marked Crosswalk
- Traffic Signal



Figure 4

Safe Routes to School





Conclusion

Fehr & Peers has reached the following conclusions:

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- This project would be screened from further VMT analysis based on the project VMT generated being lower than the VMT threshold.
- The project aligns with the policies in both the Los Altos General Plan and the VTA TIA Guidelines.
- Installation of convex mirrors in the corners of the ramp and use of car coming signage, will ensure that vehicles can safely enter and exit the garage and avoid conflicts with other vehicles, pedestrians, or bicycles.
- The sight stopping distance on First Street is adequate for a 25 mph speed limit.
- The garage door operation will not cause a significant delay on the driveway or on First Street.

How to Use this Map

This suggested route to school map helps parents and students get to and from school in the safest and most direct way possible.

Obey crossing guards. They are there to help everyone cross congested intersections safely.

Half-Mile and Mile Zones

If you live within a half-mile or a mile from school, commuting on foot or bicycle can be just as convenient as driving, and much more fun. It can also be a great way for you and your child to get regular exercise, and for your child to get to school ready for to learn.

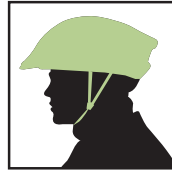
Pick a day and use the map to find the best route to school from your home. Even one or two days can make a big difference - for you, your child, and the environment. Already walk or bike? Use the map to help choose the best routes ot to explore new areas around your school.

Drive Safely

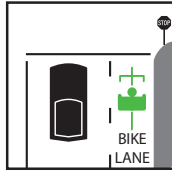
- Slow down and use extra caution in school zones and along commute routes! Signal your turns and yield to pedestrians.
- Help reduce traffic congestion near your school by carpooling with a neighbor and avoiding the last minute rush whenever possible.
- Obey adult crossing guards and "No Right Turn on Red" signs posted at designated school intersections. This allows students to cross safely without cars turning through crosswalks.
- Don't make U-turns and other unsafe maneuvers that put other road users at risk.
- When dropping off or picking up your student, follow school guidelines and always ensure that he/she exits or enters the car from the curb side.
- Never double park, block access ramps or stop where prohibited.
- Avoid texting, phone calls and other distractions when driving.

Parents: Help your student learn how to share the road safely with other users. Children who regularly practice safe walking and biking skills are more likely to make safer choices as teenagers.

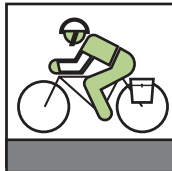
Bike Safely



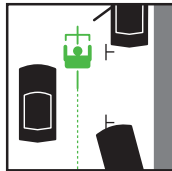
Wear your helmet and buckle it every time. It's the law. To best protect your brain, your helmet must fit properly: snug and level on your head, just above your eyebrows.



Be predictable. Obey ALL stop signs and traffic signals. Always ride on the right hand side. The best way to avoid bike crashes as well as traffic tickets is to follow the same rules of the road as apply to car drivers.



Be visible. Wear bright and reflective clothing. Use headlights and taillights.

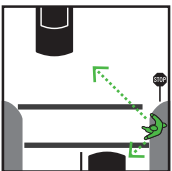


Be alert. Watch out for drivers turning left or right, or coming out of driveways. Avoid car doors opening in front of you by riding out of the door zone. Yield to pedestrians.

Walk or Skate Safely



Be alert. Look for cars coming from all directions before entering the street - including behind you.



Cross at corners and crosswalks. This is where drivers expect pedestrians.

Don't assume drivers see you. Make eye contact before crossing intersections.















Los Altos Suggested Routes to School



Covington Elementary School

Covington Elementary School

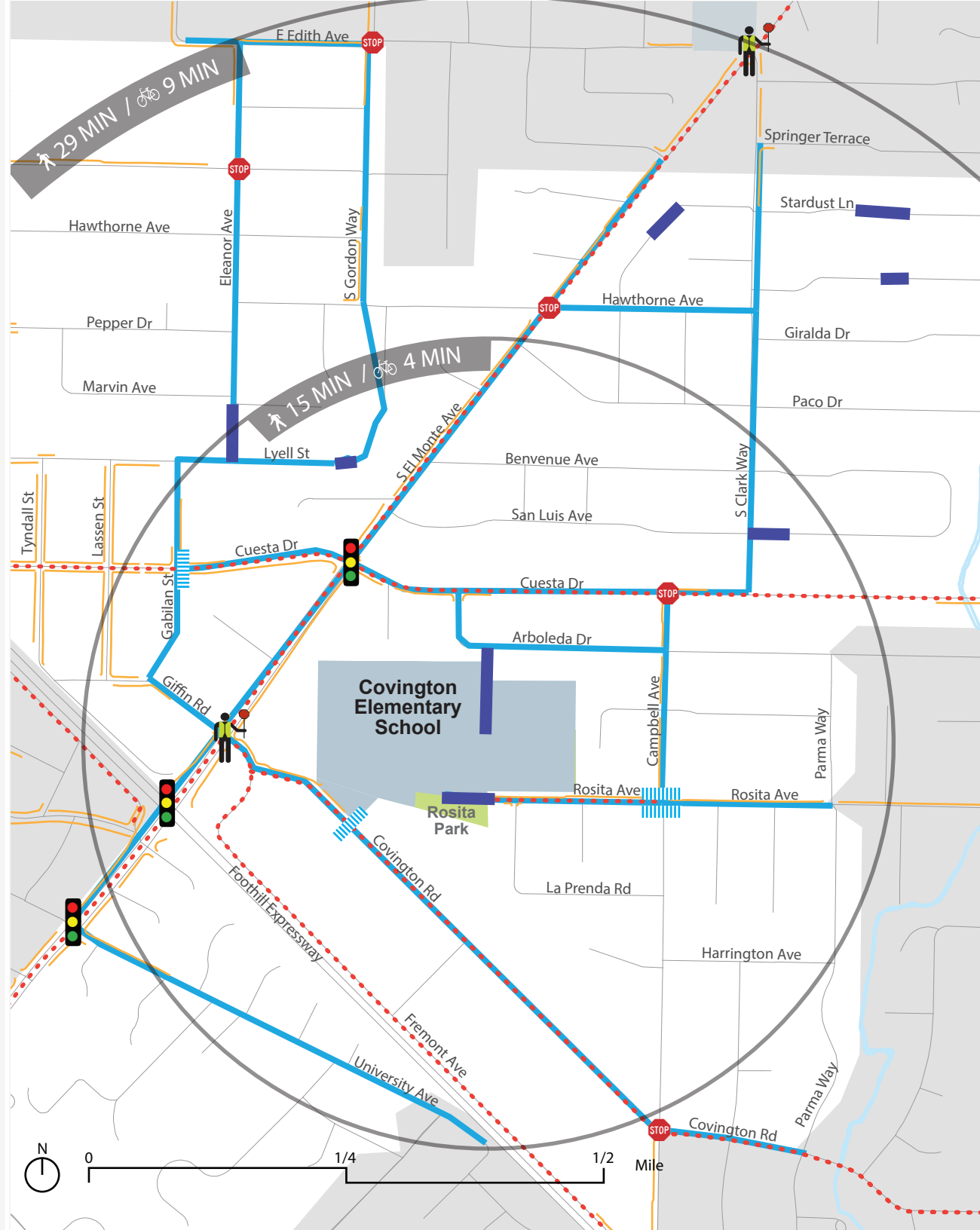
SUGGESTED ROUTES

-  Suggested Walking & Biking Route
-  Connector Path
-  Sidewalk
-  Existing Bikeway
-  Marked Crosswalk
-  Pedestrian & Bicycle Access
-  Half-mile and Mile Zones (Road Network)
-  Crossing Guard Location
-  Bicycle Parking
-  Traffic Signal
-  All-Way Stop
-  Attendance Area
-  Parks and Open Space
-  School



Enlargement Map

*Routes current as of 10/2014



Attachment A: Small Project Screening for SB 743

SMALL PROJECT SCREENING FOR SB743

The following document provides substantial evidence to support the screening on 'small' projects for SB 743 purposes. The OPR Technical Advisory relies on a trip trigger based on CEQA exemptions.

Screening Threshold for Small Projects

Many local agencies have developed screening thresholds to indicate when detailed analysis is needed. Absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a Sustainable Communities Strategy (SCS) or general plan, projects that generate or attract fewer than 110 trips per day¹⁹ generally may be assumed to cause a less-than-significant transportation impact.

Map-Based Screening for Residential and Office Projects

Residential and office projects that locate in areas with low VMT, and that incorporate similar features (i.e., density, mix of uses, transit accessibility), will tend to exhibit similarly low VMT. Maps created with VMT data, for example from a travel survey or a travel demand model, can illustrate areas that are

¹⁹ CEQA provides a categorical exemption for existing facilities, including additions to existing structures of up to 10,000 square feet, so long as the project is in an area where public infrastructure is available to allow for maximum planned development and the project is not in an environmentally sensitive area. (CEQA Guidelines, § 15301, subd. (e)(2).) Typical project types for which trip generation increases relatively linearly with building footprint (i.e., general office building, single tenant office building, office park, and business park) generate or attract an additional 110-124 trips per 10,000 square feet. Therefore, absent substantial evidence otherwise, it is reasonable to conclude that the addition of 110 or fewer trips could be considered not to lead to a significant impact.

Two potential limitations of this trigger have been identified. First, the trigger is not tied to a VMT estimate. Second, the trigger does not consider residential land uses. To strengthen the evidence, we used specific CEQA exemptions related to residential projects and 2012 California Household Travel Survey (CHTS) household VMT estimates to develop the following modification to the OPR approach. The CEQA exemption sections are provided below.

15303. NEW CONSTRUCTION OR CONVERSION OF SMALL STRUCTURES

Class 3 consists of construction and location of limited numbers of new, small facilities or structures; installation of small new equipment and facilities in small structures; and the conversion of existing small structures from one use to another where only minor modifications are made in the exterior of the structure. The numbers of structures described in this section are the maximum allowable on any legal parcel. Examples of this exemption include, but are not limited to:

- (a) One single-family residence, or a second dwelling unit in a residential zone. In urbanized areas, up to three single-family residences may be constructed or converted under this exemption.
- (b) A duplex or similar multi-family residential structure, totaling no more than four dwelling units. In urbanized areas, this exemption applies to apartments, duplexes and similar structures designed for not more than six dwelling units.
- (c) A store, motel, office, restaurant or similar structure not involving the use of significant amounts of hazardous substances, and not exceeding 2500 square feet in floor area. In urbanized areas, the exemption also applies to up to four such commercial buildings not exceeding 10,000 square feet in floor area on sites zoned for such use if not involving the use of significant amounts of hazardous substances where all necessary public services and facilities are available and the surrounding area is not environmentally sensitive.

Note: Authority cited: Section 21083, Public Resources Code; Reference: Sections 21084, Public Resources Code.

15315. MINOR LAND DIVISIONS

Class 15 consists of the division of property in urbanized areas zoned for residential, commercial, or industrial use into four or fewer parcels when the division is in conformance with the General Plan and zoning, no variances or exceptions are required, all services and access to the proposed parcels to local standards are available, the parcel was not involved in a division of a larger parcel within the previous 2 years, and the parcel does not have an average slope greater than 20 percent.

Note: Authority cited: Sections Section 21083, Public Resources Code; Reference: Section 21084, Public Resources Code.

Based on the 2012 CHTS, here are a range of VMT estimates for 2, 4, and 6 units based on the CA and SACOG average VMT generation per household.

CA Average – 41.6 VMT per household

- 2 units = 83.2 VMT per day
- 4 units = 166.4 VMT per day
- 6 units = 249.6 VMT per day (urban areas only)

SACOG Average – 42.9 VMT per household

- 2 units = 85.8 VMT per day
- 4 units = 171.6 VMT per day
- 6 units = 257.4 VMT per day (urban areas only)

Another option is to rely on the maximum level of development allowed by CEQA exemptions and convert that value to a 'dwelling unit equivalent' measure similar to impact fee programs. OPR estimated that non-residential uses could generate 110-124 daily trips based on a maximum project exemption size of 10,000 square feet (KSF). Using the lower end of the range and CHTS trip lengths produces a VMT equivalent for 10 KSF for CA and SACOG of 836 and 869, respectively. This equates to about 20 residential households.