



May 14, 2014

Ms. Lorraine Weiss
City of San Mateo
330 West 20th Avenue
San Mateo, CA 94403

Subject: *Traffic Operational Study for the Proposed Tilton Avenue Residential Development in San Mateo, California*

Dear Ms. Weiss:

Hexagon Transportation Consultants, Inc. has completed a traffic operational analysis for the proposed residential development located at 106 –120 Tilton Avenue in San Mateo, California. The project site is located within the North B Street/Tilton Avenue Sub-Area of the City of San Mateo Downtown Area Plan. The project would consist of 27 townhome units. Parking would be provided in a below-grade parking garage. The traffic operations study evaluated site access, loading zone functionality, on-site circulation, and construction management issues. Figure 1 shows the project site location.

Existing Traffic Conditions

Average daily traffic (ADT) counts (24-hour machine counts) were collected on Tilton Avenue adjacent to the project site Tuesday through Thursday (3 days). Existing weekday AM (7:00 AM to 9:00 AM) and PM (4:00 PM to 6:00 PM) peak hour traffic volumes at the intersection of El Camino Real and Tilton Avenue were counted. Pedestrian and bicycle trips at the intersection also were counted during the weekday AM and PM peak hours of traffic. The counts were conducted in April 2014 and are contained in Appendix A.

Existing Daily Traffic Volume

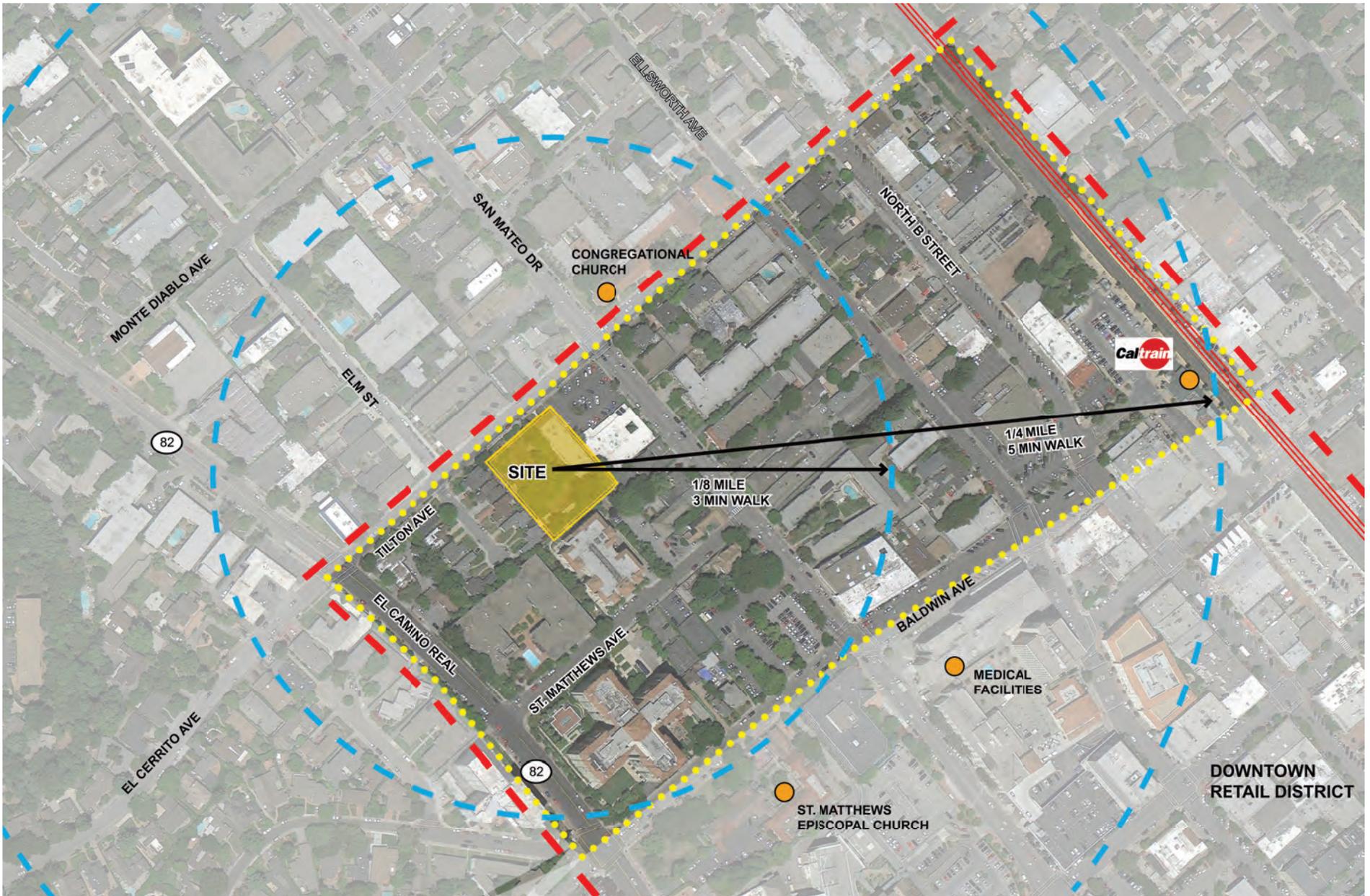
The 3-day tube count data show that Tilton Avenue currently experiences a weekday ADT volume of approximately 4,950 vehicles per day. Over a three-day period, the counts ranged from a low of 4,883 vehicles per day to a high of 5,043 vehicles per day. The daily traffic volume on Tilton Avenue fluctuates less than 5 percent from one day to the next. The daily volume of traffic on Tilton Avenue is characteristic of a collector street, according to the City of San Mateo General Plan Circulation Element, which states a typical traffic capacity for a collector is between 1,000 and 10,000 vehicles per day.

Existing Field Observations

The existing vehicle operations at the intersection of El Camino Real and Tilton Avenue were observed during the AM and PM peak hours. During the AM peak period of traffic, some queuing issues were observed. The eastbound and westbound movements usually required two signal cycles for all vehicles to clear the intersection when there were a lot of vehicles turning left, due to the shared through/left-turn lane approach and permitted left-turn phasing. However, the vehicle queues on Tilton Avenue never extended past Elm Street. Vehicles turning left onto Tilton Avenue or El Cerrito Avenue from northbound and southbound El Camino Real required 3 or 4 cycles to make the left turn during the AM peak hour of traffic. This issue is due to the permitted left-turn phasing and lack of a dedicated left-turn lane. Drivers on El Camino Real travelling north or south through the intersection appear to be aware of the queues that occur and use the outside lane to avoid the queued vehicles turning left.

During the PM peak period of traffic, vehicle queuing was not as much of an issue. Vehicles on all approaches to the intersection were able to clear the intersection in one signal cycle length most of the time.

Only a few bikes and pedestrians were observed using Tilton Avenue during both the AM and PM peak hours of traffic.



Source: Dahlin Group

Figure 1
Site Location

Existing Intersection Level of Service

Traffic conditions at the intersection of El Camino Real and Tilton Avenue were evaluated using level of service (LOS). *Level of Service* is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays. The City of San Mateo level of service methodology for signalized intersections is the 2000 *Highway Capacity Manual* (HCM) method. This method is applied using the TRAFFIX software. The 2000 HCM operations method evaluates signalized intersection operations on the basis of average control delay time for all vehicles at the intersection. The City of San Mateo level of service standard is mid-LOS D (delay of 45 seconds) or better for all signalized intersections.

Based on the existing intersection count data, the intersection of El Camino Real and Tilton Avenue currently operates at an acceptable LOS B during both the AM and PM peak hours of traffic. Overall the study intersection operated adequately during the weekday AM and PM peak hours of traffic, and the intersection has sufficient capacity to serve the existing volume of traffic. However, field observations showed that some vehicle queuing issues currently occur at the intersection during both the AM and PM peak periods of traffic that are not clearly demonstrated in the level of service calculations. The existing operation of the intersection is described in more detail below.

The level of service (LOS B) reported for the El Camino Real and Tilton Avenue intersection is a function of the capacity of the intersection, and not a measure of intersection efficiency or progression of traffic through the intersection. The study intersection has adequate capacity to accommodate the weekday peak hour traffic volumes, with or without the project; however, long vehicle delays occur at the intersection during the peak hours because it is difficult for vehicles turning left to find sufficient gaps in traffic. During both the AM and PM peak hours, vehicles on all four approaches were delayed and observed to wait through two or more signal cycles before clearing the intersection. Since each leg of the intersection has a shared lane approach geometry with permitted left-turn phasing, vehicle queues develop due to the absence of dedicated left-turn pockets and protected left-turn phasing. However, this queuing issue only occurs during the peak traffic periods of the day and does not occur the remainder of the day.

While the vehicle queues that develop on the approaches to the intersection do not create any significant operational or safety issues, the resulting vehicle delays that occur are an inconvenience to drivers nonetheless. The only solution to the vehicle queuing issue at the intersection is to install dedicated left-turn pockets and protected left-turn phasing on all approaches. However, this would require removal of parking. It is important to note that the queuing issue is an existing problem and is not caused by the project. Furthermore, based on the small size of the project, the project would not have a noticeable effect on the existing queuing issues at the intersection.

Project Trip Generation

Through empirical research, data have been collected that quantify the amount of traffic produced by common land uses. Thus, for most land uses there are standard trip generation rates that can be applied to help predict the future traffic increases that would result from a new development. The magnitude of traffic added to the roadway system by a particular development is estimated by multiplying the applicable trip generation rates by the size of the development. The Institute of Transportation Engineers' (ITE) manual entitled *Trip Generation, 9th Edition*, contains trip generation rates for the most common land uses, including townhomes (ITE Land Use Code 230).

The project trip estimates are presented in Table 1. As shown in the table, the project would generate 12 trips during the weekday AM peak hour (2 trips inbound and 10 trips outbound) and 14 trips during the weekday PM peak hour (9 trips inbound and 5 trips outbound). Trip credits associated with the existing residential uses on the site were not applied because the uses are vacant. Also, no reduction was taken for the proximity to downtown and the Caltrain station. In reality, the trip making probably will be less to the extent that residents walk to downtown locations and take Caltrain.

Project Intersection Level of Service

The results of the level of service analysis show that the study intersection of El Camino Real and Tilton Avenue would continue to operate at an acceptable LOS B with the addition of project-generated traffic. Table 2 shows the intersection levels of service both without and with the project.

**Table 1
 Project Trip Generation Estimates**

Land Use	Size	Weekday		AM Peak Hour			PM Peak Hour				
		Rate/a/	Trips	Rate/a/	In	Out	Total	Rate/a/	In	Out	Total
Townhomes /b/	27 DU	5.81	157	0.44	2	10	12	0.52	9	5	14

Notes:
 /a/ Rates expressed in trips per dwelling unit.
 /b/ ITE trip rates for Townhomes (Land Use #230) were used. Average trip rates were applied.
 Source: ITE *Trip Generation*, 9th Edition.

**Table 2
 Intersection Level of Service Analysis**

Intersection	Peak Hour	Count Date	Existing		Existing Plus Project			
			Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Incr. In Delay	Incr. In Crit. V/C
El Camino Real & Tilton Av	AM	04/08/14	14.5	B	14.7	B	0.2	0.003
	PM	04/08/14	12.1	B	12.2	B	0.0	0.000

Project Site Access and Circulation

The site access review is based on the February 20, 2014 site plan prepared by Dahlin Group. The garage level site plan is shown on Figure 2. As proposed, one full access driveway on Tilton Avenue would serve the underground parking garage. The parking garage would contain a total of 57 parking spaces, which is the number required by code.

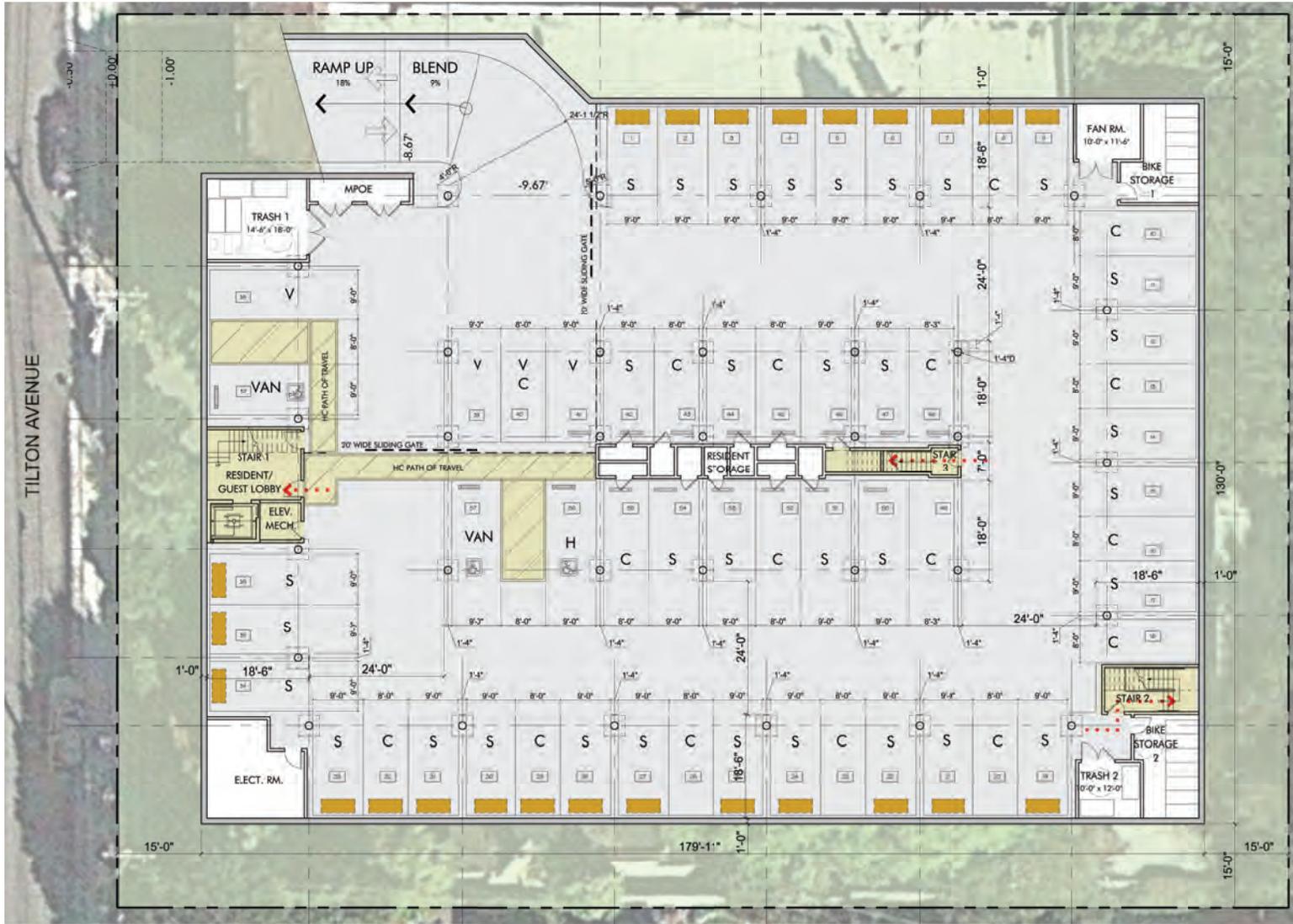
Project Driveway

The project driveway is shown to be 20 feet wide measured at the throat. According to the City of San Mateo Zoning Code, residential driveways shall not exceed 20 feet in width. Thus, the proposed width of the driveway would be adequate to serve the project. Based on the relatively small size of the project, the project-generated trips that would occur at the driveway are only 2 inbound trips and 10 outbound trips during the AM peak hour of traffic, and 9 inbound trips and 5 outbound trips during the PM peak hour of traffic. Sufficient gaps in traffic will exist along Tilton Avenue to allow vehicles to exit the project driveway with very little delay. Due to the small number of vehicles exiting the site and the anticipated low vehicle delays, on-site vehicle queuing issues are not expected to occur at the project driveway.

Sight Distance at the Project Driveway

Based on the site plan provided, the project driveway would be free and clear of obstructions. Hexagon recommends that standard no parking zones be established adjacent to the driveway to ensure that exiting vehicles can see pedestrians on the sidewalk and vehicles traveling on Tilton Avenue. The project proposes street trees along the project frontages, which would not conflict with a driver's ability to locate a gap in traffic. Adequate sight distance (sight distance triangles) should be provided in accordance with Caltrans standards. Sight distance triangles should be measured approximately 10 feet back from the traveled way.

Providing the appropriate sight distance reduces the likelihood of a collision at a driveway or intersection, and provides drivers with the ability to exit a driveway or locate sufficient gaps in traffic. Sight distance generally should be provided in accordance with Caltrans standards. The minimum acceptable sight distance is often considered the Caltrans stopping sight distance. Sight distance requirements vary depending on the roadway speeds. For a driveway on Tilton Avenue, which has a posted speed limit of 25 mph, the Caltrans stopping sight distance is 200 feet (based on a design speed of 30 mph). Thus, a driver must be able to see 200 feet down Tilton Avenue in order to stop and avoid a collision.



R5 DISTRICT MULTIPLE FAMILY DWELLING

Site Area: 0.77ac (33,587.2 sf)
Buildable: (23,310.32 sf)

27/0.17=35.0 du/a

DOWNTOWN SPECIFIC PLANNING AREA
PARKING REQUIREMENTS (CH 27.64, 100):

2 bedrooms	(1.8 per unit) (0.2 for guest)
Ratio	2.0 Req'd
3 or more bedrooms	(2.0 per unit) (0.2 for guest)
Ratio	2.2 Req'd

Parking Required:
2 bedrooms: 10 units x 2.0 = 20 sp
3 bedrooms: 17 units x 2.2 = 37.4 sp
TOTAL: 57 (57.4) sp

Parking Provided:

Standard Stalls	34
Compact Stalls	16
Visitor Stalls	4
Accessible	3*
TOTAL	57

Maximum Compact stalls allowed 30%
(57 x 0.3) = 17.1 allowed
= 17 provided

* Includes (1) Van space for Visitors

DOWNTOWN SPECIFIC PLANNING AREA
BICYCLE PARKING REQUIREMENTS

Required:

Long-term (resident storage)	
2 bedrooms (1.25 per unit)	
(10 x 1.25) =	12.5 sp
3 or more bedrooms (1.5 per unit)	
(17 x 1.5) =	25.5 sp
TOTAL	38 sp

Provided:

Bike storage 1	7 stalls
Bike storage 2	7 stalls
Overhead Bike storage	24*
TOTAL	38 stalls

*Overhead Bike storage will be provided at head of 24 car stalls, see plan for locations.

Short-term (guest rack)
3 or more bedrooms (0.15 per unit)
(27 x 0.15) = 4 sp required*

*Provided at podium level near elevator



Figure 2
Garage Level Site Plan

Based on the site plan, it can be concluded that the project driveway would meet the Caltrans sight distance standards.

Ramp Design

The ramp is shown to be 20 feet wide along the straight segment and 24 feet wide at the turn, measured curb to curb. This would allow two automobiles to pass on the turn and would meet the City of San Mateo Zoning Code requirements. It is difficult to tell whether the ramp has a level area behind the sidewalk, or if the 9 percent grade shown on the site plan begins immediately where the ramp and sidewalk meet. It is important that a flat area be provided to allow exiting vehicles to see pedestrians on the sidewalk. Ultimately, Public Works staff will make the final determination about the adequacy of the ramp design.

Truck Access

According to the site plan, all loading activities and garbage collection would occur along the project frontage in the public right-of-way. A centrally located loading zone is proposed on Tilton Avenue for use by trucks, including moving and delivery vehicles. Based on the proposed site design, it is assumed that dumpsters would be pushed to the street, and garbage collection would occur in the loading zone.

On-Site Vehicular Circulation

On-site vehicular circulation was reviewed in accordance with generally accepted traffic engineering standards. The site plan shows good vehicular circulation within the underground parking garage with no dead-ends. The below-grade drive aisle loop is shown to be 24 feet wide and would contain 90-degree parking spaces throughout the garage. The proposed drive aisle width would provide sufficient room for vehicles to back out of the parking spaces.

On-site circulation was reviewed for vehicle access by the method of turning-movement templates. Analysis using the appropriate turning template shows that passenger vehicles could adequately maneuver throughout the parking garage.

Pedestrian and Bicycle Access and Circulation

The project would reconstruct the sidewalk along its frontage on Tilton Avenue. A grand pedestrian walkway would bisect the site, extending from the sidewalk on Tilton Avenue to the rear of the project. A network of minor walkways and courts would extend from the centralized walkway and provide access to individual homes. The main walkway also would provide access for bicyclists who wish to use the elevator to access bike storage located in the underground parking garage.

Site Proximity to the Downtown San Mateo Caltrain Station

The project site is located 0.35 miles walking distance from the Downtown San Mateo Caltrain Station. The platforms at the San Mateo Caltrain station are wheel chair accessible. The Downtown San Mateo Caltrain Station is also a major transfer point for SamTrans. The most direct walking path from the site to the Caltrain station is Tilton Avenue to Railroad Avenue. An alternative route of equal distance would be to take Tilton Avenue to south on San Mateo Drive, then east on Baldwin Avenue, arriving at Transit Center Way after crossing B Street. Both routes provide continuous sidewalks and crosswalks. Textured diagonal curb ramps are provided at all of the street corners along the routes. Bike lanes are not provided on any of the roadways providing access to the Caltrain station.

Although there are no counts of the number of riders who walk to the San Mateo Caltrain stations, it is a local and regional goal to improve pedestrian access to Caltrain. The City of San Mateo Citywide Pedestrian Master Plan (adopted April 16, 2012) contains a list of goals and priority projects intended to improve the overall walkability within the City of San Mateo, thereby increasing residences' desire to walk. Priority projects are intended for near-term implementation within 1-5 years. Many of the priority projects included in the Pedestrian Master Plan would improve the safety and convenience of walking to transit stops. In fact, one of the objectives (Objective 4.D) of the Pedestrian Master Plan is to establish a Safe Routes to Transit (SR2T) program to facilitate walking and biking to transit.

The segment of Tilton Avenue between El Camino Real and N Delaware Street has been identified as an "area with pedestrian challenges" due to excessive vehicle speeding. As a result, intersection

improvements have been identified in the Pedestrian Master Plan that will enhance pedestrian safety along this corridor. The Pedestrian Master Plan recommends the following intersection improvements near the project site:

- *El Camino Real and Tilton Avenue* – Install curb extensions with perpendicular curb ramps and truncated domes on all four corners of the intersections. Install advance stop bars.
- *San Mateo Drive and Tilton Avenue* – Install high-visibility crosswalks and adjust signal timing to account for slow walkers.

Curb extensions shorten pedestrian crossing distances and make pedestrians more visible to drivers. High-visibility crosswalks include more pavement markings than typical crosswalks and are utilized where there is or will be high pedestrian activity, where slower pedestrians are expected, or where pedestrian safety is a major concern. Potential funding sources for the recommended improvements listed above are listed in the Pedestrian Master Plan.

Parking

The required parking supply was calculated using the parking rates specified in the City of San Mateo Zoning Code for properties located within the Downtown Specific Planning Area. Section 27.64.100/160 of the City Zoning Code states that parking for each residential unit shall be provided at a rate of 1.8 spaces for each two-bedroom unit, and a rate of 2.0 spaces for each three-bedroom unit. Guest parking shall be provided at a rate of 0.2 spaces for each unit, regardless of the number of bedrooms. Based on these parking rates, the proposed project (which includes 10 two-bedroom units and 17 three-bedroom units) would be required to provide 57 parking spaces: $(2.0 \text{ spaces} \times 10 \text{ units}) + (2.2 \text{ spaces} \times 17 \text{ units}) = 57$ spaces total.

The project would provide 57 parking spaces, as required. As proposed, the below-grade parking garage would provide 34 standard stalls, 16 compact stalls, 4 visitor stalls, and 3 accessible stalls (including two van accessible stalls). Of the 57 below-grade parking spaces provided, 52 of them would be secured by two separate sliding gates.

The project would result in the loss of two to three on-street parking spaces due to the driveway location and proposed 25-foot loading zone. The existing on-street spaces are signed for two-hour parking. Based on field observations the spaces are used to a modest extent so that their removal would not create a parking shortage in the vicinity.

Parking Stall Design

According to the site plan, all of the standard parking stalls located around the perimeter of the underground parking garage are shown to be 9 feet wide by 18.5 feet deep. All of the centrally-located standard stalls are shown to be 9 feet wide by 18.0 feet deep. All of the stalls labeled “compact” are shown to have the same depth as the standard stalls but 1 foot less in width. All of the handicapped spaces are shown to be at least 9 feet wide by 18.0 feet deep. The proposed parking stall dimensions would meet the City of San Mateo parking standards.

Bicycle Parking

The required bicycle parking supply was calculated using the parking rates specified in the City of San Mateo Zoning Code for properties located within the Downtown Specific Planning Area. Section 27.64.262 of the City Zoning Code states that long-term bicycle parking for each residential unit shall be provided at a rate of 1.25 spaces for each two-bedroom unit, and a rate of 1.5 spaces for each three-bedroom unit. Short-term bicycle parking shall be provided at a rate of 0.1 spaces for each two-bedroom unit and 0.15 spaces for each three-bedroom unit. Based on these bicycle parking rates, the proposed project would be required to provide 38 long-term bicycle parking spaces and 4 short-term bicycle parking spaces.

The project proposes two separate bike storage rooms for 14 bicycles, 24 ceiling storage spaces over resident parking stalls, 10 private bike lockers for residents, and a short-term bike rack with room for 4 bicycles provided at the podium level near the elevator. This amounts to a total of 48 long-term bicycle parking spaces and 4 short-term bicycle parking spaces, which is more than the required amount.

Construction Impacts

Prior to project approval, the applicant will be required to submit a traffic control plan to address any warning and regulatory traffic control devices needed during project construction, routing of trucks to and from the site, storage of construction materials and equipment, placement of on-site construction related parking, and construction hours. Information must be provided regarding how the residential development will be constructed, and whether construction could potentially close sidewalks or traffic lanes. If any streets or sidewalks are expected to be affected at any time during the construction phase, solutions for accommodating pedestrians and vehicular traffic will need to be developed and approved by City of San Mateo staff.

Appendix A
New Traffic Counts

All Traffic Data
 2187 Kingsbury Cir
 Santa Clara, CA 95054
WWW.ALLTRAFFICDATA.NET

Site Code: 3
 Station ID:
 TILTON AVE E/O ELM ST

Start Time	07-Apr-14		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
12:00 AM	*	*	11	6	11	7	10	14	*	*	*	*	*	*	11	9
01:00	*	*	5	5	4	10	3	5	*	*	*	*	*	*	4	7
02:00	*	*	2	2	6	2	4	3	*	*	*	*	*	*	4	2
03:00	*	*	3	2	2	1	3	1	*	*	*	*	*	*	3	1
04:00	*	*	3	4	8	3	5	4	*	*	*	*	*	*	5	4
05:00	*	*	4	11	20	11	4	9	*	*	*	*	*	*	9	10
06:00	*	*	45	21	60	26	44	36	*	*	*	*	*	*	50	28
07:00	*	*	145	231	130	219	139	213	*	*	*	*	*	*	138	221
08:00	*	*	254	226	215	208	230	220	*	*	*	*	*	*	233	218
09:00	*	*	163	135	148	177	166	177	*	*	*	*	*	*	159	163
10:00	*	*	147	127	138	149	151	132	*	*	*	*	*	*	145	136
11:00	*	*	135	135	149	114	202	156	*	*	*	*	*	*	162	135
12:00 PM	*	*	147	154	184	189	148	186	*	*	*	*	*	*	160	176
01:00	*	*	130	129	161	146	151	141	*	*	*	*	*	*	147	139
02:00	*	*	165	163	166	159	198	165	*	*	*	*	*	*	176	162
03:00	*	*	190	190	197	186	187	184	*	*	*	*	*	*	191	187
04:00	*	*	199	173	197	199	228	206	*	*	*	*	*	*	208	193
05:00	*	*	265	240	221	201	228	209	*	*	*	*	*	*	238	217
06:00	*	*	152	155	152	160	161	140	*	*	*	*	*	*	155	152
07:00	*	*	98	108	114	109	102	126	*	*	*	*	*	*	105	114
08:00	*	*	57	95	61	80	69	82	*	*	*	*	*	*	62	86
09:00	*	*	46	68	63	61	45	60	*	*	*	*	*	*	51	63
10:00	*	*	56	37	23	20	35	34	*	*	*	*	*	*	38	30
11:00	*	*	29	15	16	14	13	14	*	*	*	*	*	*	19	14
Lane	0	0	2451	2432	2446	2451	2526	2517	0	0	0	0	0	0	2473	2467
Day	0	0	4883	4883	4897	4897	5043	5043	0	0	0	0	0	0	4940	4940
AM Peak	-	-	08:00	07:00	08:00	07:00	08:00	08:00	-	-	-	-	-	-	08:00	07:00
Vol.	-	-	254	231	215	219	230	220	-	-	-	-	-	-	233	221
PM Peak	-	-	17:00	17:00	17:00	17:00	16:00	17:00	-	-	-	-	-	-	17:00	17:00
Vol.	-	-	265	240	221	201	228	209	-	-	-	-	-	-	238	217

Comb. Total 0 4883 4897 5043 0 0 0 4940

ADT ADT 4,941 AADT 4,941

All Traffic Data Services

2187 Kingsbury Cir
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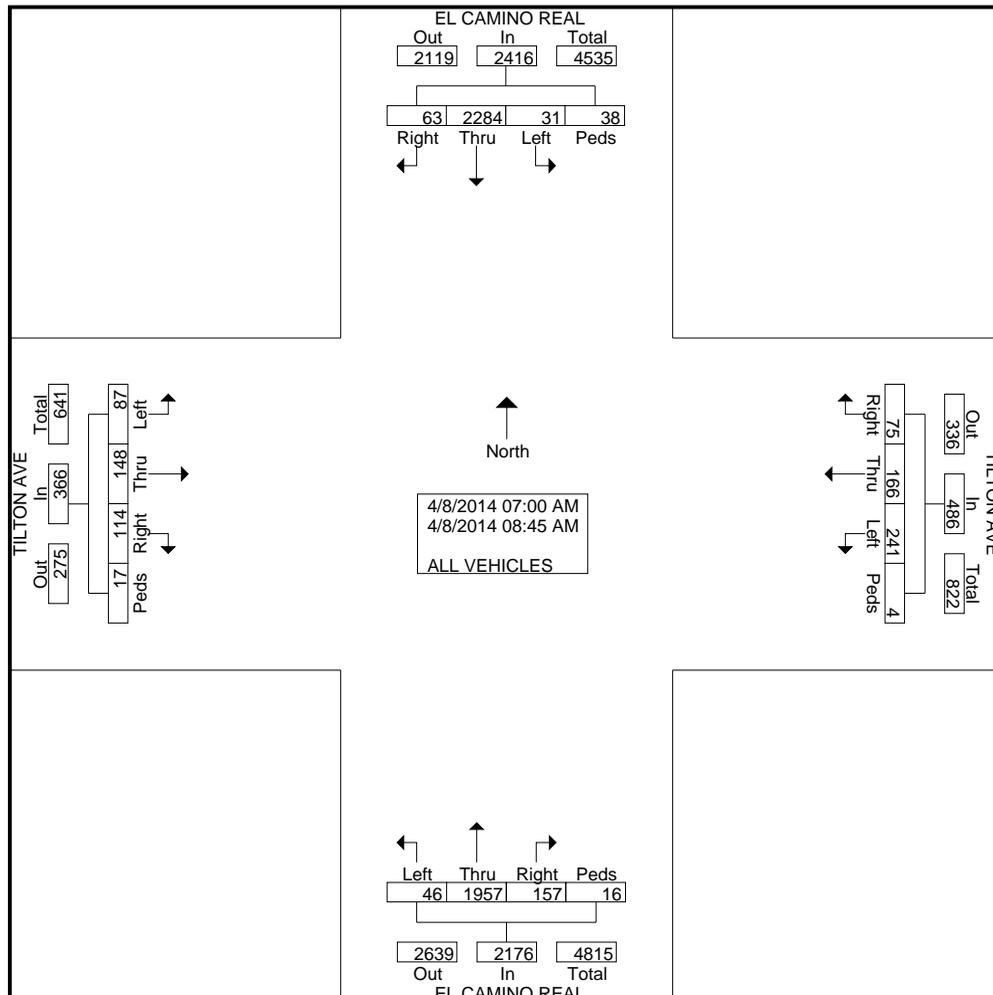
Site Code : 1

Start Date : 4/8/2014

Page No : 1

Groups Printed- ALL VEHICLES

Start Time	EL CAMINO REAL Southbound				TILTON AVE Westbound				EL CAMINO REAL Northbound				TILTON AVE Eastbound				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	2	163	6	6	10	22	13	1	15	133	3	2	12	14	5	1	408
07:15 AM	5	264	1	3	4	11	25	0	8	161	6	1	9	7	2	0	507
07:30 AM	5	288	6	7	9	14	45	0	16	243	8	3	15	9	7	3	678
07:45 AM	17	316	1	6	16	38	41	2	16	327	6	2	16	20	13	5	842
Total	29	1031	14	22	39	85	124	3	55	864	23	8	52	50	27	9	2435
08:00 AM	11	329	2	5	10	33	34	1	24	320	6	2	13	27	13	2	832
08:15 AM	11	296	3	3	8	15	29	0	19	258	7	0	18	25	17	2	711
08:30 AM	7	332	4	7	9	14	19	0	29	275	7	5	16	23	11	2	760
08:45 AM	5	296	8	1	9	19	35	0	30	240	3	1	15	23	19	2	706
Total	34	1253	17	16	36	81	117	1	102	1093	23	8	62	98	60	8	3009
Grand Total	63	2284	31	38	75	166	241	4	157	1957	46	16	114	148	87	17	5444
Apprch %	2.6	94.5	1.3	1.6	15.4	34.2	49.6	0.8	7.2	89.9	2.1	0.7	31.1	40.4	23.8	4.6	
Total %	1.2	42	0.6	0.7	1.4	3	4.4	0.1	2.9	35.9	0.8	0.3	2.1	2.7	1.6	0.3	

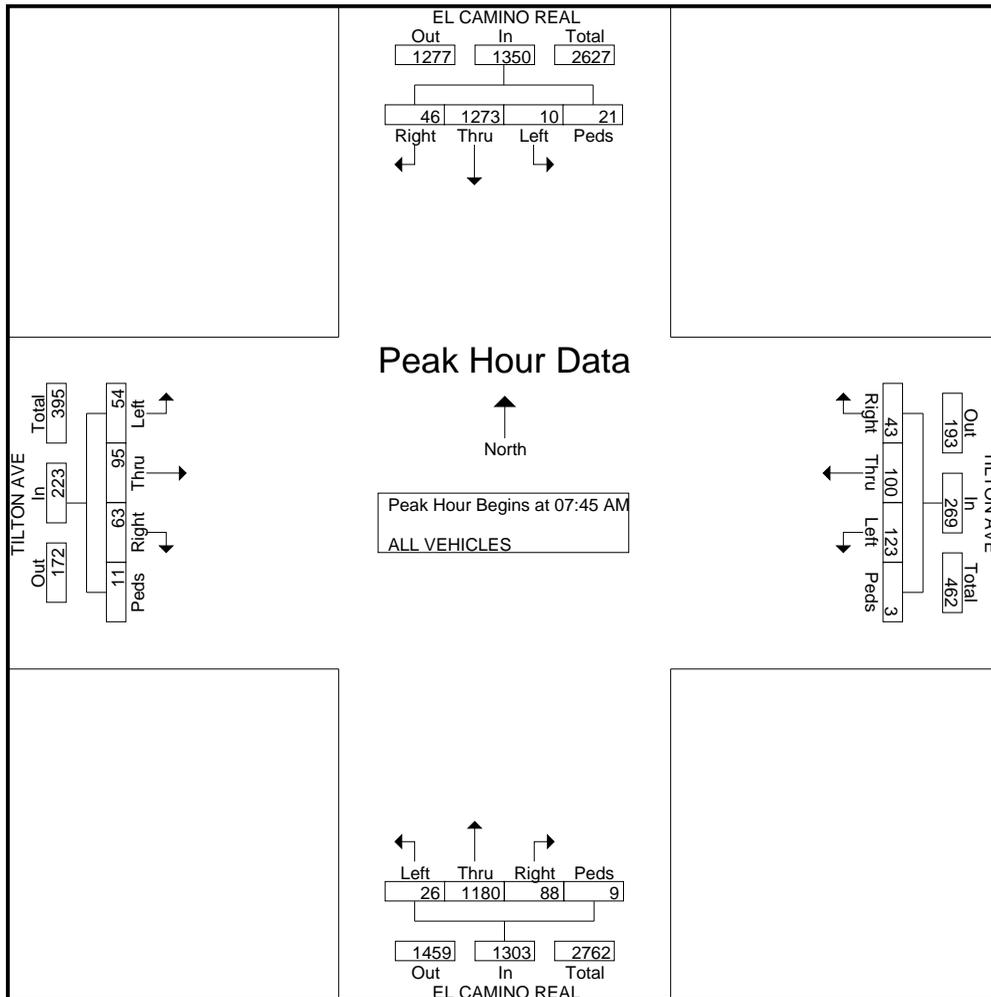


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File Name : #1 ELCAMINOREAL&TILTONAM
 Site Code : 1
 Start Date : 4/8/2014
 Page No : 2

Start Time	EL CAMINO REAL Southbound					TILTON AVE Westbound					EL CAMINO REAL Northbound					TILTON AVE Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	17	316	1	6	340	16	38	41	2	97	16	327	6	2	351	16	20	13	5	54	842
08:00 AM	11	329	2	5	347	10	33	34	1	78	24	320	6	2	352	13	27	13	2	55	832
08:15 AM	11	296	3	3	313	8	15	29	0	52	19	258	7	0	284	18	25	17	2	62	711
08:30 AM	7	332	4	7	350	9	14	19	0	42	29	275	7	5	316	16	23	11	2	52	760
Total Volume	46	1273	10	21	1350	43	100	123	3	269	88	1180	26	9	1303	63	95	54	11	223	3145
% App. Total	3.4	94.3	0.7	1.6		16	37.2	45.7	1.1		6.8	90.6	2	0.7		28.3	42.6	24.2	4.9		
PHF	.676	.959	.625	.750	.964	.672	.658	.750	.375	.693	.759	.902	.929	.450	.925	.875	.880	.794	.550	.899	.934



All Traffic Data Services

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File Name : #1 ELCAMINOREAL&TILTONPM

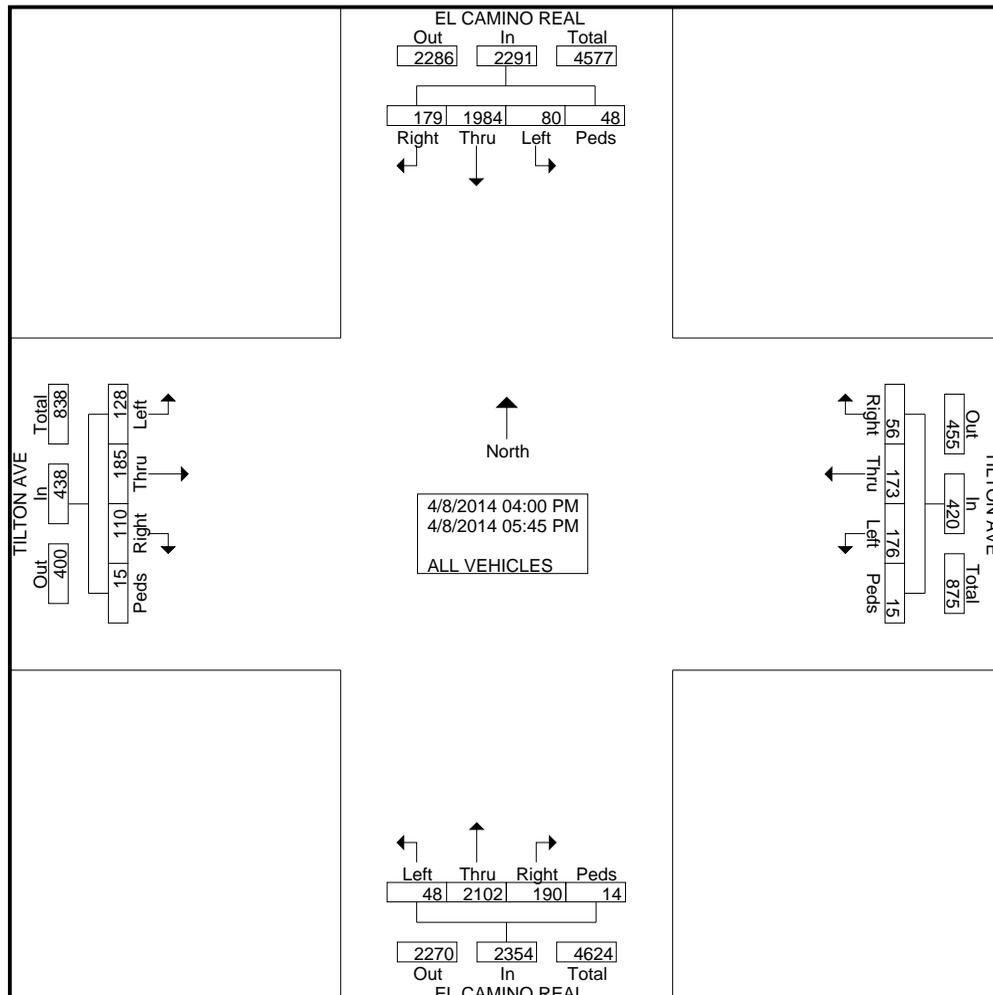
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Start Time	EL CAMINO REAL Southbound				TILTON AVE Westbound				EL CAMINO REAL Northbound				TILTON AVE Eastbound				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	14	277	6	7	8	22	17	0	22	255	6	4	16	19	16	3	692
04:15 PM	15	304	7	5	4	15	22	0	25	257	5	2	21	15	11	4	712
04:30 PM	10	236	12	5	10	9	22	1	20	263	6	0	12	26	17	1	650
04:45 PM	23	284	11	6	6	21	19	2	22	258	7	1	15	20	13	2	710
Total	62	1101	36	23	28	67	80	3	89	1033	24	7	64	80	57	10	2764
05:00 PM	23	204	8	6	6	22	31	0	25	260	4	1	19	27	27	1	664
05:15 PM	41	192	13	8	7	29	25	10	24	298	6	0	13	24	14	2	706
05:30 PM	17	225	18	6	5	26	24	2	26	246	5	0	9	31	20	0	660
05:45 PM	36	262	5	5	10	29	16	0	26	265	9	6	5	23	10	2	709
Total	117	883	44	25	28	106	96	12	101	1069	24	7	46	105	71	5	2739
Grand Total	179	1984	80	48	56	173	176	15	190	2102	48	14	110	185	128	15	5503
Apprch %	7.8	86.6	3.5	2.1	13.3	41.2	41.9	3.6	8.1	89.3	2	0.6	25.1	42.2	29.2	3.4	
Total %	3.3	36.1	1.5	0.9	1	3.1	3.2	0.3	3.5	38.2	0.9	0.3	2	3.4	2.3	0.3	



All Traffic Data Services

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 Santa Clara, CA, 95054
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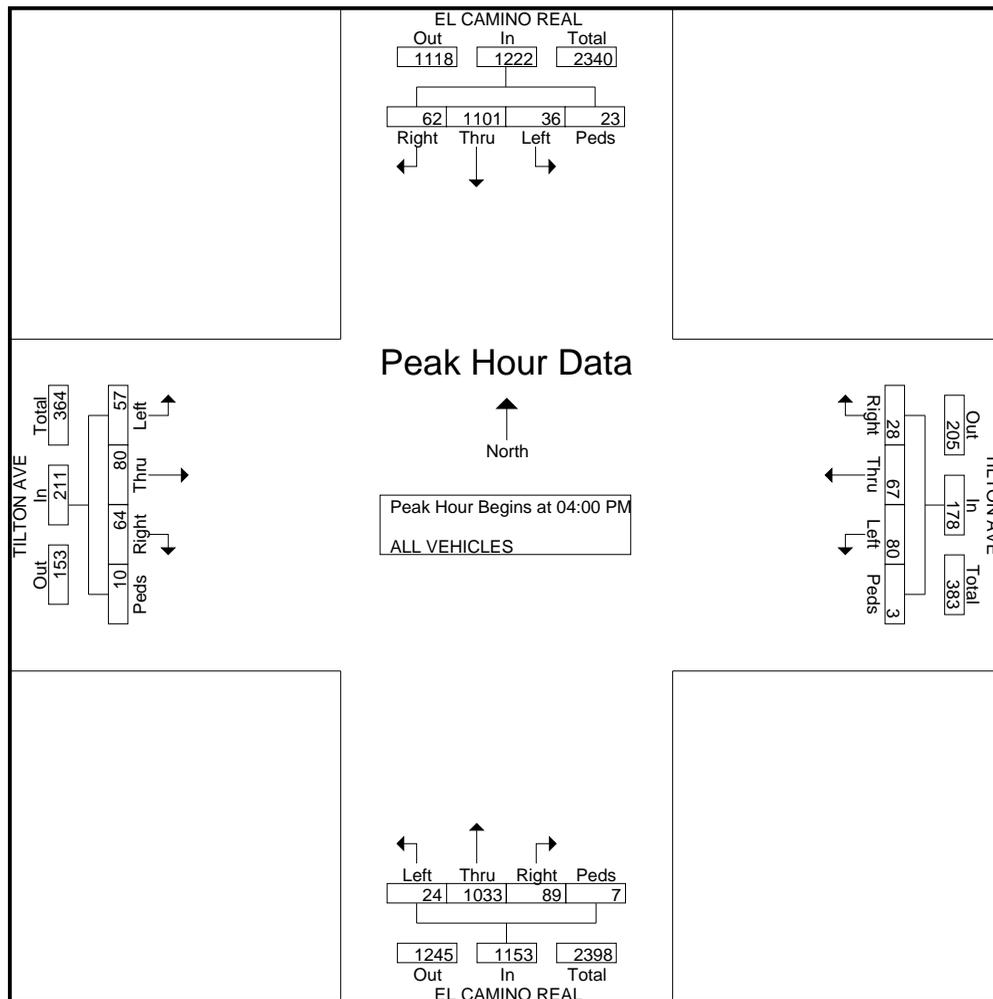
File Name : #1 ELCAMINOREAL&TILTONPM

Site Code : 1

Start Date : 4/8/2014

Page No : 2

Start Time	EL CAMINO REAL Southbound					TILTON AVE Westbound					EL CAMINO REAL Northbound					TILTON AVE Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	14	277	6	7	304	8	22	17	0	47	22	255	6	4	287	16	19	16	3	54	692
04:15 PM	15	304	7	5	331	4	15	22	0	41	25	257	5	2	289	21	15	11	4	51	712
04:30 PM	10	236	12	5	263	10	9	22	1	42	20	263	6	0	289	12	26	17	1	56	650
04:45 PM	23	284	11	6	324	6	21	19	2	48	22	258	7	1	288	15	20	13	2	50	710
Total Volume	62	1101	36	23	1222	28	67	80	3	178	89	1033	24	7	1153	64	80	57	10	211	2764
% App. Total	5.1	90.1	2.9	1.9		15.7	37.6	44.9	1.7		7.7	89.6	2.1	0.6		30.3	37.9	27	4.7		
PHF	.674	.905	.750	.821	.923	.700	.761	.909	.375	.927	.890	.982	.857	.438	.997	.762	.769	.838	.625	.942	.971



File Name: C:\Users\Nathan\Desktop\ATD\PETRA\HEXAGON\8471 - SAN MATEO 4-2014\#1 ELCAMINOREAL&TILTONAM.ppd
 Start Date: 4/8/2014
 Start Time: 7:00:00 AM
 Site Code: 1

Start Time	EL CAMINO REAL Southbound				TILTON AVE Westbound				EL CAMINO REAL Northbound				TILTON AVE Eastbound			
	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes	Right	Thru	Left	Bikes
07:00 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0
07:15 AM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
07:45 AM	1	0	0	1	0	0	0	0	0	0	0	0	0	2	0	2
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1

