

## **C2    Transit Assessment Memorandum**





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## FINAL MEMORANDUM

Date: June 25, 2019

Case No.: 2018-007883ENV

To: Liz White; Wade Wietgrefe, San Francisco Planning Department  
From: Amanda Leahy, AICP; Lindsey Willman, EIT, Kittelson & Associates, Inc.  
Project: Balboa Reservoir  
Subject: Transit Assessment Memorandum – Final

Kittelson & Associates, Inc. (Kittelson) has prepared this memorandum to present the results of the transit corridor delay assessment and City College Loop analysis for the proposed Balboa Reservoir project (Case No. 2018-007883ENV) in San Francisco, California. For informational purposes, Kittelson also conducted ridership and capacity analysis.

### TRAVEL DEMAND SUMMARY

The transit analysis presented in this memorandum utilizes the daily, weekday a.m. peak hour, and weekday p.m. peak hour vehicle and transit trips estimates for the Developer's Proposed Option and Additional Housing Option included in the Balboa Reservoir Travel Demand Memorandum and summarized in Table 1.

**Table 1: Vehicle and Transit Trip Estimates**

Land Use	Daily	Weekday a.m. Peak Hour			Weekday p.m. Peak Hour		
		In	Out	Total	In	Out	Total
<b>Developer's Proposed Option</b>							
Vehicle Trips	3,168	92	157	249	203	115	318
Transit Trips	1,989	25	128	153	162	33	195
<b>Additional Housing Option</b>							
Vehicle Trips	4,442	117	212	329	274	149	423
Transit Trips	2,713	34	168	202	216	43	259

Source: Kittelson & Associates, Inc. 2018. SF Workbook, 2018. SF Guidelines, 2002. ITE, 10th Edition, 2012.

Notes: Totals may vary slightly, due to rounding.

<sup>1</sup> Inbound/outbound distribution of weekday p.m. peak hour trips in and out of the project are obtained from the SF Workbook.

<sup>2</sup> Weekday a.m. peak hour values are calculated using the ITE Trip Generation Handbook 10<sup>th</sup> edition ratios for a.m. to p.m. for each use.

### Developer's Proposed Option

The existing project site consists of 1,007-space surface parking lot ("Lower Lot"). Under the Developer's Proposed Option, a 750-space public parking garage would be constructed on the site. The public parking garage would be located on the southern end of the site and would be accessible from

Lee Avenue. Under the Developer's Proposed Option, vehicle trips associated with the existing parking lot were reassigned to the public parking garage.

As summarized in the Balboa Reservoir Travel Demand Memorandum, the weekday a.m. and p.m. peak hour activity (inbound and outbound vehicle trips) at the Lower Lot was estimated using the parking occupancy and accumulation data collected at the site and the vehicle turning movement counts collected at the north entrance driveway. A total of 53 vehicles parked in the Lower Lot during the peak hour of the weekday a.m. vehicular travel peak period and 48 of those vehicles arrived during the peak hour of the weekday a.m. vehicular travel peak period. During the weekday p.m. peak hour, a total of 52 vehicles parked in the Lower Lot during the peak hour of the weekday p.m. vehicular travel peak period and 44 vehicles exited during the peak hour of the weekday p.m. vehicular travel peak period.

The inbound/outbound splits from turning movement counts collected at the driveway were applied to estimate the outbound volume during the a.m. peak hour and inbound volume during the p.m. peak hour. According to the turning movement counts collected at the site access driveways, approximately 49 percent of vehicles (48 out of 97 vehicles) traveled inbound to the site during the weekday a.m. peak hour. According to the turning movement counts, approximately 61 percent of vehicles (44 out of 72 vehicles) traveled outbound from the site during the weekday p.m. peak hour. Therefore, there were a total of 97 vehicle trips (48 inbound, 49 outbound) and 72 vehicle trips (28 inbound, 44 outbound) traveling to/from the Lower Lot during the a.m. and p.m. peak hours, respectively. These existing vehicle trips were redistributed from the north entrance along Frida Kahlo Way to the new access point at Ocean Avenue/Lee Avenue based on existing travel patterns, as reflected in the intersection counts included as Attachment A and Figures 1A and 1B in Attachment B. The Developer's Proposed Option Project-Only Trips are included as Figures 2A and 2B in Attachment B. The reassigned parking trips are included as Figures 3A and 3B in Attachment B. The Existing plus Developer's Proposed Option plus Reassigned Parking Trips are included as Figures 4A and 4B in Attachment B.

### Additional Housing Option

Under the Additional Housing Option, the project would not provide any replacement public parking. As summarized in the Balboa Reservoir Travel Demand Memorandum, the Upper Lot would have sufficient capacity to accommodate the total number of parked vehicles during the weekday a.m. and p.m. vehicle travel peak hour, such that no vehicles would be displaced and need to find parking in other off-street or on-street facilities. Therefore, the existing trips destined for the Lower Lot would be expected to find available parking spaces within the Upper Lot and these trips are included as part of the existing traffic volumes. These vehicle trips would remain part of the existing traffic for purposes of the analysis. The Additional Housing Option Project-Only Trips are included as Figures 5A and 5B in Attachment B. The Existing plus Additional Housing Option Trips are included as Figures 6A and 6B in Attachment B.

## TRANSIT ASSESSMENT

Impacts of the proposed project options on transit operations were measured in terms of increases to transit travel times associated with the following three factors:

- *Transit corridor (or traffic congestion) delay* – traffic congestion associated with increases in traffic slows transit vehicles and results in increased transit travel times. When public transit vehicles share travel lanes with private vehicles or private vehicles block intersections or result in longer traffic signal phases to accommodate their movements, transit vehicles slow down. The methodology uses Trafficware’s Synchro modeling software to calculate traffic congestion delays along corridors served by transit.
- *Transit reentry delay* – Transit vehicles typically experience delays after stopping to pick up and drop off passengers while waiting for gaps in adjacent street traffic in order to pull out from bus stops. As traffic volumes on the adjacent streets increase, reentering the flow of traffic becomes more difficult and transit vehicles experience increased delays. Transit reentry delay is calculated using empirical data in the 2000 Highway Capacity Manual. Total transit reentry delay for each route is calculated as the sum of transit reentry delay at each stop within the transportation study area.
- *Passenger boarding delay* – The amount of time a transit vehicle has to stop to pick up and drop off passengers (i.e. the transit vehicle dwell time) is directly correlated to the number of passenger boardings per vehicle. As general transit ridership increases, vehicles would spend more time at stops, which may increase overall transit travel times. Passenger boarding delay was calculated assuming two seconds per passenger boarding. Increases in passenger boarding delay associated with the proposed project were determined from the transit assignment for the project.

Weekday a.m. (7:00 to 9:00 a.m.) and weekday p.m. (4:00 to 6:00 p.m.) peak period vehicular turning movement and bicycle and pedestrian counts were collected for the study intersection locations on Wednesday, January 31, 2018 and Tuesday, August 28, 2018. Existing intersection counts are included as Attachment A and shown in Figures 1A and 1B in Attachment B. Intersection operations analysis was performed using Synchro software and conducted using the SF Planning Department’s *Guidelines for Synchro Intersection LOS Analysis*. Intersection operations were analyzed for Existing Conditions, Existing plus Developer’s Proposed Option (which includes reassigned parking trips), and Existing plus Additional Housing Option (does not include reassigned parking trips) for the weekday a.m. and p.m. peak hours.

### Transit Corridor (or Traffic Congestion) Delay Analysis

The transit corridor (or traffic congestion) delay analysis considers the change in intersection delay due to the addition of project-generated vehicle traffic along the following corridors:

- Frida Kahlo Way from Judson Avenue to Ocean Avenue (Line 43)
- Ocean Avenue from Plymouth Avenue to San Jose Avenue (Lines K, 29, 49)

- Geneva Avenue from City College Loop to San Jose Avenue (Lines 8, 8BX, 43, 54)

The transit corridor delay analysis is quantified using Trafficware's Synchro modeling software arterial/corridor delay reports to calculate traffic congestion delays along corridors served by transit. Based on the Planning Department's Transportation Impact Analysis 2019 Guidelines Update methodology for transit travel delay analysis, an adjusted methodology was used to calculate transit delay at intersections operating at level of service F (forced traffic flow in which the amount of vehicular traffic approaching an intersection exceeds that amount that can be accommodated). One study intersection, Ocean Avenue/San Jose Avenue, operates with an existing average intersection delay above 100 seconds per vehicle and a volume-to-capacity (v/c) ratio less than 1.02 during the weekday a.m. and p.m. peak hours. An individual intersection delay adjustment, an increase of 100 seconds of delay per vehicle, was applied at this location as reflected in the Ocean Avenue corridor delays reported in Table 2 and

Table 3. The weekday a.m. and p.m. peak hour corridor delay results under Existing and Existing plus Developer's Proposed Option are summarized in Table 2. The weekday a.m. and p.m. peak hour corridor delay results under Existing and Existing plus Additional Housing Option are summarized in

Table 3. Synchro worksheets and detailed corridor delay calculations are included as Attachment C.

**Developer's Proposed Option:** Based on the corridor delay analysis presented in Table 2, the Developer's Proposed Option would have the greatest impact to northbound movements on Frida Kahlo Way, increasing the delay by a maximum of five seconds during the weekday a.m. peak period and would have the greatest impact to westbound movement on Ocean Avenue, increasing the delay by a maximum of six seconds during the weekday p.m. peak period.

Additional Housing Option: **As shown in**

Table 3, the Additional Housing Option would have the greatest impact to eastbound movements on Ocean Avenue, increasing the delay by a maximum of two seconds during the weekday a.m. peak period and would have the greatest impact to westbound movements on Ocean Avenue, increasing the delay by a maximum of eight seconds during the weekday p.m. peak period.

There is little to no change in delay with the addition of project-related trips from the Developer's Proposed Option or the Additional Housing Option. Based on the findings from this corridor delay analysis, the project would not result in a substantial delay to public transit along Frida Kahlo Way, Ocean Avenue, or Geneva Avenue.

**Table 2: Transit Corridor Delay – Developer’s Proposed Option**

Scenario / Corridor	Weekday a.m. Peak Hour (seconds of delay)		Weekday p.m. Peak Hour (seconds of delay)	
	Northbound/ Eastbound	Southbound/ Westbound	Northbound/ Eastbound	Southbound/ Westbound
<b>Existing Conditions</b>				
Frida Kahlo Way	3	12	3	25
Ocean Avenue	110	132	113	133
Geneva Avenue	70	48	66	41
<b>Developer’s Proposed Option</b>				
Frida Kahlo Way	8	11	3	24
Ocean Avenue	112	133	115	139
Geneva Avenue	70	48	66	42
<b>Project-Related Change in Corridor Delay</b>				
Frida Kahlo Way	+5	-1	0	-1
Ocean Avenue	+2	+1	+2	+6
Geneva Avenue	0	0	0	+1

Sources: Kittelson & Associates, Inc. 2018. Notes: Total delay presented in seconds per transit approach or movement lane group.

**Table 3: Transit Corridor Delay – Additional Housing Option**

Scenario / Corridor	Weekday a.m. Peak Hour (seconds of delay)		Weekday p.m. Peak Hour (seconds of delay)	
	Northbound/ Eastbound	Southbound/ Westbound	Northbound/ Eastbound	Southbound/ Westbound
<b>Existing Conditions</b>				
Frida Kahlo Way	3	12	3	25
Ocean Avenue	110	132	113	133
Geneva Avenue	70	48	66	41
<b>Additional Housing Option</b>				
Frida Kahlo Way	3	12	4	24
Ocean Avenue	112	132	115	141
Geneva Avenue	70	48	66	42
<b>Project-Related Change in Corridor Delay</b>				
Frida Kahlo Way	0	0	+1	-1
Ocean Avenue	+2	0	+2	+8
Geneva Avenue	0	0	0	+1

Sources: Kittelson & Associates, Inc. 2018. Notes: Total delay presented in seconds per transit approach or movement lane group.

## Transit Reentry Delay Analysis

Transit vehicles typically experience delays after stopping to pick up and drop off passengers while waiting for gaps in adjacent street traffic in order to pull out from bus stops. As traffic volumes on the adjacent streets increase, reentering the flow of traffic becomes more difficult and transit vehicles experience increased delays. Transit reentry delay is calculated using empirical data in the 2000 Highway Capacity Manual and is based on the number of vehicles in the adjacent travel lane, as shown in Table 4. The transit reentry delay is presented in Table 5 and is calculated separately for each direction of transit travel. Transit reentry delay calculations are included as Attachment D.

**Table 4: Average Reentry Delay into Adjacent Traffic Stream**

Adjacent Lane Mixed Traffic Volume (number of vehicles per hour)	100	200	300	400	500	600	700	800	900	1,000
Average Reentry Delay (seconds)	0	1	2	3	4	5	7	9	11	14

Sources: SFMTA, Appendix D: Transit Delay Calculations; HCM 2000.

**Table 5: Transit Reentry Delay**

Corridor / Direction	Existing		Existing plus Additional Housing Option <sup>1</sup>		
	Adjacent Lane Hourly Volume (vehicles)	Average Reentry Delay (seconds)	Adjacent Lane Hourly Volume (vehicles)	Average Reentry Delay (seconds)	Project-Related Change in Reentry Delay (seconds)
<b>Ocean Avenue</b>					
Eastbound	927	11	965	11	0
Westbound	903	11	966	11	0
<b>Frida Kahlo Way</b>					
Northbound	341	2	371	2	0
Southbound	435	3	465	3	0
<b>Geneva Avenue</b>					
Eastbound	819	9	819	9	0
Westbound	668	5	686	5	0

Sources: Kittelson & Associates, Inc. 2018. HCM 2000.

Notes:

Adjacent lane hourly volume selected for peak hour with highest vehicle volume.

<sup>1</sup>The Additional Housing Option is referenced because it generates more vehicle trips than the Developer's Proposed Option.

As shown in Table 5, the vehicle trips generated by the Additional Housing Option would not result in increased transit reentry delay at transit stops within the study area. Because the Developer's Proposed Option would generate fewer vehicle trips than the Additional Housing Option, the vehicle trips generated by the Developer's Proposed Option would not result in increased transit reentry delay at transit stops within the study area.

## Passenger Boarding Delay Analysis

Passenger boarding delay was calculated assuming two seconds per passenger boarding. Increases in passenger boarding delay associated with the proposed project were determined from the transit assignment for the project, which is presented in Table 14 and Table 15. Passenger boarding delay calculations are included as Attachment D.

**Developer's Proposed Option:** Based on this analysis, the 114 weekday a.m. peak hour transit riders and 140 weekday p.m. peak hour transit riders generated by the Developer's Proposed Option would create an additional 228 total seconds of delay during the weekday a.m. peak hour and 280 total seconds of delay during the weekday p.m. peak hour (cumulatively, across all lines [8, 23, 28R, 29 43, 49, 54, K]). During the weekday a.m. peak hour, this level of project-generated transit ridership is equivalent to an average of less than three seconds increased passenger boarding delay per bus and a maximum increase of less than seven seconds per bus. During the weekday p.m. peak hour, this is equivalent to an average of less than four seconds increased passenger boarding delay per bus and a maximum increase of less than nine seconds per bus. The maximum increase in passenger boarding delay would occur on the 43 Masonic line, which would receive the highest number of project-generated transit riders.

**Additional Housing Option:** The 150 weekday a.m. peak hour transit riders and 187 weekday p.m. peak hour transit riders by the Additional Housing Option would create an additional 300 total seconds of delay during the weekday a.m. peak hour and 374 total seconds of delay during the weekday p.m. peak hour (cumulatively, across all lines [8, 23, 28R, 29 43, 49, 54, K]). During the weekday a.m. peak hour, this is equivalent to an average of about three seconds increased passenger boarding delay per bus and a maximum of eight seconds increased passenger boarding delay per bus. During the weekday p.m. peak hour this is equivalent to an average of about five seconds increased passenger boarding delay per bus and a maximum of less than ten seconds increased passenger boarding delay per bus. The maximum increase in passenger boarding delay would occur on the 43 Masonic line, which would receive the highest number of project-generated transit riders.

## City College Loop Analysis

The City College Loop analysis considers the impact of the proposed project on the ability of buses to enter/exit City College Loop or cause a substantial increase in delay for entering/exiting buses. The evaluation assesses the change in queue lengths at Ocean Avenue/Lee Avenue and Ocean Avenue/Frida Kahlo Way/Geneva Avenue and potential for queues to spillback and block transit vehicle access or egress to the City College Loop. The results of the queue analysis are summarized in Table 6 and Table 7. The results of the intersection delay analysis are presented in Table 8 and Table 9. Synchro worksheets and detailed queue analyses are included as Attachment E.

**Table 6: Queue Analysis – Weekday a.m. Peak Hour**

Scenario / Intersection	Weekday a.m. Peak Hour												
	95 <sup>th</sup> Percentile Queue Lengths by Lane Group (linear feet)												
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
<b>Existing Conditions</b>													
Lee Ave/Ocean Ave	-	41	-	-	236	-	-	94	-	-	40	-	
Ocean Ave/Frida Kahlo Way/Geneva Ave	<b>201</b>	264	-	-	<b>313</b>	-	210	-	-	-	87	0	
<b>Developer's Proposed Option</b>													
Lee Ave/Ocean Ave	-	40	-	-	253	-	-	107	-	-	<b>195</b>	-	
Ocean Ave/Frida Kahlo Way/Geneva Ave	<b>188</b>	284	-	-	<b>349</b>	-	218	-	-	-	80	5	
<b>Additional Housing Option</b>													
Lee Ave/Ocean Ave	-	41	-	-	239	-	-	108	-	-	<b>161</b>	-	
Ocean Ave/Frida Kahlo Way/Geneva Ave	<b>200</b>	281	-	-	<b>357</b>	-	218	-	-	-	87	0	
<b>Project-Related Change in 95<sup>th</sup> Percentile Queue Lengths (Project Option minus Existing Conditions)</b>													
Developer's Proposed Option	Lee/Ocean	-	-1	-	-	17	-	-	13	-	-	155	-
	Ocean/Frida Kahlo	-13	20	-	-	36	-	8	-	-	-	-7	5
Additional Housing Option	Lee/Ocean	-	0	-	-	3	-	-	14	-	-	121	-
	Ocean/Frida Kahlo	-2	17	-	-	44	-	8	-	-	-	0	0

Source: Kittelson & Associates, Inc. 2018.

Notes: Queues represent the 95<sup>th</sup> percentile queue length in feet. **Bold** = 95<sup>th</sup> percentile volume exceeds capacity; therefore, the queue length may be longer than what is displayed in the table. EBL=Eastbound Left. EBT=Eastbound Through. EBR=Eastbound Right.

**Table 7: Queue Analysis – Weekday p.m. Peak Hour**

Intersection	Weekday p.m. Peak Hour												
	95 <sup>th</sup> Percentile Queue Lengths by Lane Group (linear feet)												
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
<b>Existing Conditions</b>													
Lee Ave/Ocean Ave	-	52	-	-	281	-	-	60	-	-	114	-	
Ocean Ave/Frida Kahlo Way/Geneva Ave	<b>169</b>	290	-	-	175	-	203	-	-	-	141	24	
<b>Developer's Proposed Option</b>													
Lee Ave/Ocean Ave	-	52	-	-	304	-	-	105	-	-	<b>218</b>	-	
Ocean Ave/Frida Kahlo Way/Geneva Ave	<b>160</b>	308	-	-	<b>265</b>	-	220	-	-	-	136	32	
<b>Additional Housing Option</b>													
Lee Ave/Ocean Ave	-	52	-	-	289	-	-	<b>131</b>	-	-	<b>247</b>	-	
Ocean Ave/Frida Kahlo Way/Geneva Ave	<b>156</b>	296	-	-	<b>345</b>	-	<b>223</b>	-	-	-	141	24	
<b>Project-Related Change in 95<sup>th</sup> Percentile Queue Lengths (Project Option minus Existing Conditions)</b>													
Developer's Proposed Option	Lee/Ocean	-	0	-	-	23	-	-	45	-	-	104	-
	Ocean/Frida Kahlo	-9	18	-	-	90	-	17	-	-	-	-5	8
Additional Housing Option	Lee/Ocean	-	0	-	-	8	-	-	71	-	-	133	-
	Ocean/Frida Kahlo	-13	6	-	-	170	-	20	-	-	-	0	0

Source: Kittelson & Associates, Inc. 2018.

Notes: Queues represent the 95<sup>th</sup> percentile queue length in feet. **Bold** = 95<sup>th</sup> percentile volume exceeds capacity; therefore, the queue length may be longer than what is displayed in the table. EBL=Eastbound Left. EBT=Eastbound Through. EBR=Eastbound Right.

**Table 8: Intersection Total Delay Analysis – Weekday a.m. Peak Hour**

Intersection	Weekday a.m. Peak Hour												
	Vehicle Delay by Lane Group (seconds)												
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
<b>Existing Conditions</b>													
Lee Ave/Ocean Ave	-	6.6	-	-	20.1	-	-	21.1	-	-	24.1	-	
Ocean Ave/Frida Kahlo Way/Geneva Ave	54.7	24.9	-	-	85.9	-	85.9	-	-	-	29.0	1.9	
<b>Developer's Proposed Option</b>													
Lee Ave/Ocean Ave	-	6.6	-	-	28.6	-	-	23.3	-	-	61.1	-	
Ocean Ave/Frida Kahlo Way/Geneva Ave	52.5	29.7	-	-	84.5	-	87.1	-	-	-	26.9	2.8	
<b>Additional Housing Option</b>													
Lee Ave/Ocean Ave	-	6.7	-	-	26.6	-	-	23.8	-	-	47.7	-	
Ocean Ave/Frida Kahlo Way/Geneva Ave	56.1	27.8	-	-	83.8	-	87.1	-	-	-	29.0	1.9	
<b>Project-Related Change in Delay (Project Option minus Existing Conditions)</b>													
Developer's Proposed Option	Lee/Ocean	-	0.0	-	-	8.5	-	-	2.2	-	-	37.0	-
	Ocean/Frida Kahlo	-2.2	4.8	-	-	-1.4	-	1.2	-	-	-	-2.1	0.9
Additional Housing Option	Lee/Ocean	-	0.1	-	-	6.5	-	-	2.7	-	-	0.0	-
	Ocean/Frida Kahlo	1.4	2.9	-	-	-2.1	-	1.2	-	-	-	0.0	0.0

Source: Kittelson & Associates, Inc. 2018.

Notes: EBL=Eastbound Left. EBT=Eastbound Through. EBR=Eastbound Right.

**Table 9: Intersection Total Delay Analysis – Weekday p.m. Peak Hour**

Intersection	Weekday p.m. Peak Hour												
	Vehicle Delay by Lane Group (seconds)												
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
<b>Existing Conditions</b>													
Lee Ave/Ocean Ave	-	7.1	-	-	19.9	-	-	15.3	-	-	31.8	-	
Ocean Ave/Frida Kahlo Way/Geneva Ave	47.5	30.8	-	-	80.8	-	85.0	-	-	-	81.2	5.0	
<b>Developer's Proposed Option</b>													
Lee Ave/Ocean Ave	-	7.1	-	-	42.5	-	-	25.2	-	-	85.1	-	
Ocean Ave/Frida Kahlo Way/Geneva Ave	48.0	44.6	-	-	84.4	-	87.5	-	-	-	81.1	6.1	
<b>Additional Housing Option</b>													
Lee Ave/Ocean Ave	-	7.1	-	-	51.0	-	-	30.6	-	-	123.1	-	
Ocean Ave/Frida Kahlo Way/Geneva Ave	48.2	42.7	-	-	85.1	-	88.0	-	-	-	81.2	5.0	
<b>Project-Related Change in Delay (Project Option minus Existing Conditions)</b>													
Developer's Proposed Option	Lee/Ocean	-	0.0	-	-	22.6	-	-	9.9	-	-	53.3	-
	Ocean/Frida Kahlo	0.5	13.8	-	-	3.6	-	2.5	-	-	-	-0.1	1.1
Additional Housing Option	Lee/Ocean	-	0.0	-	-	31.1	-	-	15.3	-	-	91.3	-
	Ocean/Frida Kahlo	0.7	0.0	-	-	4.3	-	3.0	-	-	-	0.0	0.0

Sources: Kittelson & Associates, Inc. 2018.

Notes: EBL=Eastbound Left. EBT=Eastbound Through. EBR=Eastbound Right.

An output from Synchro is the intersection queue report that contains the 50<sup>th</sup> percentile and 95<sup>th</sup> percentile maximum queue lengths. The 50<sup>th</sup> percentile queue length is the maximum back of queue for a typical cycle. The 95<sup>th</sup> percentile queue length represents the maximum back of queue with 95<sup>th</sup> percentile traffic volumes. For the purposes of this transit assessment memorandum, the worst-case scenario, or the 95<sup>th</sup> percentile queue length, is documented. It is important to identify that the 95<sup>th</sup> percentile queue length shown would rarely occur or be exceeded. The detailed queue analysis, found in Attachment E, indicates that no queue length exceeds capacity, except for westbound movements at the intersection of Ocean Avenue/Frida Kahlo Way/Geneva Avenue for the 50<sup>th</sup> percentile queue lengths under Existing Conditions and with the addition of project trips from the Developer's Proposed Option and the Additional Housing Option.

**Developer's Proposed Option:** As shown in Table 6 and Table 7, under existing conditions, eastbound left turn movements at the intersection of Ocean Avenue/Frida Kahlo Way/Geneva Avenue exceeds capacity during the weekday a.m. and p.m. peak hours. With the addition of project trips from the Developer's Proposed Option, the queue lengths would decrease during the weekday a.m. and p.m. peak hours, though would still exceed capacity. The addition of project traffic would reduce the queue lengths as a result of existing signal timing coordination and optimization. The intersections along

Ocean Avenue operate as actuated-coordinated signals – Ocean Avenue being coordinated, while other crossing minor streets are actuated (i.e., Lee Avenue, Frida Kahlo Way, and Geneva Avenue). With the addition of project trips, there are more vehicles present on the actuated minor streets, and the green time for those specific phases are optimized. As a result, coordination is improved along Ocean Avenue, resulting in a shorter queue.

Under existing conditions, vehicle queues on the westbound approach at the intersection of Lee Avenue/Ocean Avenue do not spillback to the City College Loop Terminal during weekday a.m. and p.m. peak hours. With the addition of project trips generated by the Developer's Proposed Option, the queue lengths for westbound movements would increase by a maximum of 17 feet during the weekday a.m. peak hour and by 23 feet during the weekday p.m. peak hour. The increase in 95<sup>th</sup> percentile queue lengths would not result in queue spillback at the City College Loop terminal.

With the addition of project trips from the Developer's Proposed Option, southbound queues on Lee Avenue would exceed capacity during the weekday a.m. and p.m. peak hours. With the addition of project trips generated by the Developer's Proposed Option, the queue lengths on the south approach would increase by a maximum of 155 feet during the weekday a.m. peak hour and by 104 feet during the weekday p.m. peak hour. This increase would not directly impact or delay transit, as this is not a movement used by transit.

As presented in Table 8 and Table 9, the addition of project trips from the Developer's Proposed Option generally increases the total delay at the intersections of Lee Avenue/Ocean Avenue and Ocean Avenue/Frida Kahlo Way/Geneva Avenue for the weekday a.m. and p.m. peak hours. The greatest increase in total delay for the weekday a.m. and p.m. peak hours would occur for southbound movements on Lee Avenue, increasing by 37.0 seconds and 53.3 seconds, respectively. This increase in delay would not directly impact transit, as the southbound approach is not a transit route. For eastbound movements, westbound movements, and southbound movements at Ocean Avenue/Frida Kahlo Way/Geneva Avenue, the total intersection delay decreases with the addition of project trips associated with the Developer's Proposed Option. This would occur due to existing signal timing coordination and optimization. As previously described, the Developer's Proposed Option creates more project trips on Lee Avenue, Geneva Avenue, and Frida Kahlo Way. As the minor streets are actuated, the green time for those phases are optimized, and as such, Ocean Avenue has optimal coordination with preceding signalized intersections, resulting in less delay.

**Additional Housing Option:** As shown in Table 6 and Table 7, under existing conditions, eastbound left turn movements at the intersection of Ocean Avenue/Frida Kahlo Way/Geneva Avenue exceeds capacity during the weekday a.m. and p.m. peak hours. With the addition of project trips from the Additional Housing Option, the queue lengths would decrease during the weekday a.m. and p.m. peak hours, though would still exceed capacity. The addition of project traffic would reduce the queue lengths as a result of existing signal timing coordination and optimization. When there are more vehicles present on the minor streets, the green time for those specific phases are optimized.

Accordingly, the green times on Ocean Avenue are optimized thus allowing for continual movement with the preceding signalized intersections, resulting in a shorter queue.

Under existing conditions, vehicle queues on the westbound approach at the intersection of Lee Avenue/Ocean Avenue do not spillback to the City College Loop Terminal during weekday a.m. and p.m. peak hours. With the addition of project trips generated by the Additional Housing Option, the queue lengths for westbound movements would increase by a maximum of three feet during the weekday a.m. peak hour and by eight feet during the weekday p.m. peak hour. The increase in 95<sup>th</sup> percentile queue lengths would not result in queue spillback at the bus terminal.

With the addition of project trips from the Additional Housing Option, southbound queues on Lee Avenue would exceed capacity during the weekday a.m. and p.m. peak hours. With the addition of project trips generated by the Additional Housing Option, the queue lengths on the south approach would increase by a maximum of 121 feet during the weekday a.m. peak hour and by 133 feet during the weekday p.m. peak hour. This increase would not directly impact or delay transit, as this is not a movement used by transit.

As presented in Table 8 and Table 9, the addition of project trips from the Additional Housing Option generally increases the total delay at the intersections of Lee Avenue/Ocean Avenue and Ocean Avenue/Frida Kahlo Way/Geneva Avenue for the weekday a.m. and p.m. peak hours. The greatest increase in delay (6.5 seconds) would occur for westbound movements on Ocean Avenue at Lee Avenue. During the weekday p.m. peak hour, the greatest increase in total delay would occur for southbound movements on Lee Avenue, increasing by 91.3 seconds. This increase in delay would not directly impact transit, as the southbound approach on Lee Avenue is not a transit route.

Overall, the addition of project-generated trips would not create a substantial increase in delay or queueing that would affect transit operations or the ability to enter/exit City College Loop.

### Ocean Avenue/Lee Avenue Design and Signal Alternatives

As presented in Table 8 and Table 9, the addition of project trips for both the Developer's Proposed Option and the Additional Housing Option is forecast to increase the delay at the intersection of Ocean Avenue/Lee Avenue. The following alternatives were identified to help provide additional safety for pedestrians at this intersection while minimizing potential impacts on transit delay:

- Increase the leading pedestrian interval (LPI) from 4 seconds to 8 seconds
- Provide a pedestrian refuge island/boarding island extension to the existing Muni Transit Stop on the east leg
- Implement split phasing on Lee Avenue

Under existing conditions at the intersection, there is one southbound approach lane. For all three alternatives above, it is assumed that there will be two southbound approach lanes with a designated left turn lane and a shared through/right turn lane.

### ***Lee Avenue Southbound Lane Configuration***

Based on the trip generation and distribution estimates developed for the project, there will be more vehicles making a left turn on this approach with the addition of project trips, compared to through volumes and right turn volumes combined. Therefore, a southbound through/right turn with a separate left turn is recommended to minimize queue lengths and delay on the approach. Table 10 and Table 11 present the intersection delay analysis and predicted 95<sup>th</sup> percentile queue lengths for the proposed configuration. Synchro analysis worksheets are included as Attachment F.

As shown in Table 10 and Table 11, with existing volumes and reconfiguration of the Lee Avenue southbound approach to include a southbound left turn lane and southbound through/right turn lane there would be a slight reduction in vehicle delay and 95<sup>th</sup> percentile queue lengths experienced on the southbound, northbound, and westbound approaches. Comparing the vehicle delay and queue length results for the Developer's Proposed Option and Additional Housing Option presented in Table 10 and Table 11 against the results for the existing configuration with project-added traffic presented in Tables 6 through 9, the reconfiguration of the Lee Avenue southbound approach would reduce vehicle delay and 95<sup>th</sup> percentile queue lengths. Therefore, this reconfiguration is recommended to improve traffic operations and reduce the potential for queues to extend past the Whole Foods Driveway on the southbound approach and block the City College Terminal entrance and SFFD Fire Station 15 on the westbound approach.

### ***Increase Leading Pedestrian Interval***

Currently, there is a permitted movement for southbound left turning vehicles and southbound left-turning vehicle movements would coincide with the WALK phase for people crossing the east crosswalk. Given the permitted movement for southbound left turns, drivers must yield to pedestrians, and as such, may have to wait a few cycles to make it through the intersection. During the weekday a.m. peak hour, which occurs between 7:30 and 8:30 a.m. at this location, a total of 173 people were observed crossing on the east crosswalk. During the weekday p.m. peak hour, which occurs between 4:55 and 5:55 p.m. at this location, a total of 183 people were observed crossing on the east crosswalk (See Appendix A for intersection counts). One alternative identified to potentially improve the safety for pedestrians and decrease the delay for the southbound approach is to increase the leading pedestrian interval for the east crosswalk from 4 seconds to 8 seconds. Table 12 and Table 13 summarize the delay results and approach queue lengths for this alternative. Synchro analysis worksheets are included as Attachment F.

**Table 10: Ocean Avenue/Lee Avenue – Southbound Left Turn and Through/Right Turn Lane Configuration: Delay**

Peak Hour	Intersection Approach/Lane Group Delay (sec)						Average Intersection Delay (sec)	
	Southbound Lane Group			Northbound Approach	Eastbound Approach	Westbound Approach		
	SB LT	SB TH	SB RT					
<b>Existing Conditions</b>								
AM	-	25.2	-	31.7	6.2	14.3	12.3	
PM	-	33.8	-	27.6	6.6	15.3	13.5	
<b>Existing Conditions with SB LT and SBTH/RT</b>								
AM	24.9	23.6	-	29.4	12.7	12.4	14.2	
PM	29.2	25.0	-	27.5	12.9	12.9	14.7	
<b>Developer's Proposed Option with SB LT and SBTH/RT</b>								
AM	38.6	24.4	-	30.7	12.6	14.0	16.5	
PM	40.5	25.2	-	32.4	12.9	16.0	17.6	
<b>Additional Housing Option with SB LT and SBTH/RT</b>								
AM	35.9	24.0	-	30.9	12.7	13.1	15.9	
PM	48.6	25.2	-	35.4	12.9	16.3	18.6	

Notes: SB LT = southbound left turn; SB TH = southbound through; SB RT = southbound right turn; sec = seconds

- The intersection delay displayed reflects the total average intersection delay for all approaches.

**Table 11: Ocean Avenue/Lee Avenue – Southbound Left Turn and Through/Right Turn Lane Configuration: 95<sup>th</sup> Percentile Queue Lengths**

Peak Hour	95 <sup>th</sup> Percentile Queue Length (ft)							
	Southbound Approach/Lane Group			Northbound Approach	Eastbound Approach	Westbound Approach		
	SB LT	SB TH	SB RT					
<b>Existing Conditions</b>								
AM	-	40	-	94	41	236		
PM	-	114	-	60	52	281		
<b>Existing Conditions with SB LT and SBTH/RT</b>								
AM	30	19	-	87	195	184		
PM	68	46	-	60	201	200		
<b>Developer's Proposed Option with SB LT and SBTH/RT</b>								
AM	125	38	-	100	194	217		
PM	127	49	-	105	201	258		
<b>Additional Housing Option with SB LT and SBTH/RT</b>								
AM	103	29	-	101	195	143		
PM	151	49	-	130	201	263		

Notes: SB LT = southbound left turn; SB TH = southbound through; SB RT = southbound right turn; sec = seconds

**Table 12: Ocean Avenue/Lee Avenue – Increase in Leading Pedestrian Interval: Delay**

Peak Hour	Intersection Approach/Lane Group Delay (sec)						Average Intersection Delay (sec)	
	Southbound Lane Group			Northbound Approach	Eastbound Approach	Westbound Approach		
	SB LT	SB TH	SB RT					
<b>Existing Conditions with SB LT and SBTH/RT</b>								
AM	24.9	23.6	-	27.1	15.9	15.6	16.9	
PM	29.2	25.0	-	27.3	16.2	16.3	17.6	
<b>Developer's Proposed Option with SB LT and SBTH/RT</b>								
AM	38.6	24.4	-	28.2	15.9	17.9	19.2	
PM	40.5	25.2	-	32.4	16.2	21.0	21.1	
<b>Additional Housing Option with SB LT and SBTH/RT</b>								
AM	35.9	24.0	-	28.3	15.9	16.6	18.5	
PM	48.6	25.2	-	35.4	16.2	21.4	22.2	

Notes: SB LT = southbound left turn; SB TH = southbound through; SB RT = southbound right turn; sec = seconds

- The intersection delay displayed reflects the total average intersection delay for all approaches.

**Table 13: Ocean Avenue/Lee Avenue – Increase in Leading Pedestrian Interval: Queue Lengths**

Peak Hour	95 <sup>th</sup> Percentile Queue Length (ft)						Westbound Approach	
	Southbound Lane Group			Northbound Approach	Eastbound Approach			
	SB LT	SB TH	SB RT					
<b>Existing Conditions with SB LT and SBTH/RT</b>								
AM	30	19	-	66	222	208		
PM	68	46	-	58	228	227		
<b>Developer's Proposed Option with SB LT and SBTH/RT</b>								
AM	125	38	-	78	221	248		
PM	127	49	-	105	228	295		
<b>Additional Housing Option with SB LT and SBTH/RT</b>								
AM	103	29	-	79	222	227		
PM	151	49	-	130	228	300		

Notes: SB LT = southbound left turn; SB TH = southbound through; SB RT = southbound right turn; 95<sup>th</sup> % = 95<sup>th</sup> percentile; ft = feet

The analysis assumed a fixed cycle length and to accommodate for the increase in the leading pedestrian interval, four seconds was removed from the maximum effective green time on the eastbound and westbound movements and added to the northbound and southbound LPI.

Comparing the results in Table 10 and Table 12, increasing the length of the leading pedestrian interval for northbound and southbound movements would increase the overall average intersection delay under the Developer's Proposed Option and Additional Housing Option by 2.7 seconds and 2.6 seconds during the weekday a.m. peak hour and by 2.5 seconds and 3.6 seconds during the weekday p.m. peak hour, relative to respective plus project conditions with implementation of the southbound left turn and through/right turn lane. Increasing the length of the leading pedestrian interval for northbound and southbound movements would increase the westbound approach delay under the Developer's Proposed Option and Additional Housing Option by 3.9 seconds and 3.5 seconds during the weekday a.m. peak hour and by 5.0 seconds and 5.1 seconds during the weekday p.m. peak hour, relative to

respective plus project conditions with implementation of the southbound left turn and through/right turn lane. Increasing the length of the leading pedestrian interval for northbound and southbound movements would increase the eastbound approach delay under the Developer's Proposed Option and Additional Housing Option by 3.3 seconds and 3.2 seconds during the weekday a.m. peak hour and by 3.3 seconds and 3.3 seconds during the weekday p.m. peak hour, relative to respective plus project conditions with implementation of the southbound left turn and through/right turn lane.

#### **Comparing the 95<sup>th</sup> percentile queue length results in Table 11 and**

Table 13, increasing the length of the leading pedestrian interval for northbound and southbound movements would increase the westbound queue length under the Developer's Proposed Option and Additional Housing Option by 31 feet and 47 feet during the weekday a.m. peak hour and by 37 feet and 84 feet during the weekday p.m. peak hour, relative to respective plus project conditions with implementation of the southbound left turn and through/right turn lane. Increasing the length of the leading pedestrian interval for northbound and southbound movements would increase the eastbound queue length under the Developer's Proposed Option and Additional Housing Option by 27 feet and 28 feet during the weekday a.m. peak hour and by 27 feet and 27 feet during the weekday p.m. peak hour, relative to respective plus project conditions with implementation of the southbound left turn and through/right turn lane. The effective green time for the northbound and southbound phases remains the same; therefore, the delay and the queue lengths for each southbound movement not change.

Based on the analysis presented in this section, with maintenance of the current cycle length, this alternative would result in a minor increase in delay to transit vehicles with a maximum increase in delay of about five seconds experienced on the westbound movement during the weekday a.m. and p.m. peak hours. Implementation of this alternative would increase queue lengths on the westbound approach by about two or three vehicles during the weekday a.m. peak hour and about two to four vehicles during the weekday p.m. peak hour under the Developer's Proposed Option and Additional Housing Option, respectively. This increase in queue lengths on the westbound approach could result in increased frequency of vehicles blocking the City College Terminal entrance and SFFD Fire Station 15. Queue lengths on the eastbound approach would increase by one to two vehicles during both peak hours for both project options.

#### ***Pedestrian Refuge/Boarding Island Extension***

The existing transit boarding island on the east side of the Ocean Avenue/Lee Avenue intersection currently ends short of the crosswalk. Extension of this boarding island was evaluated based on the potential to: 1) serve as a pedestrian refuge island that would allow people to cross fewer lanes of traffic at a time thereby limiting pedestrian exposure in the intersection; 2) provide a physical extension into the intersection that would slow vehicles making a southbound left turn; and, 3) increase space for people to wait at the existing Muni transit stop refuge island. Figure 1 illustrates the proposed concept design and shows the path of travel of a single-unit truck (SU-30) design vehicle making a southbound left turn. As shown in Figure 1, while the concept design would achieve items number 1 and 3 identified

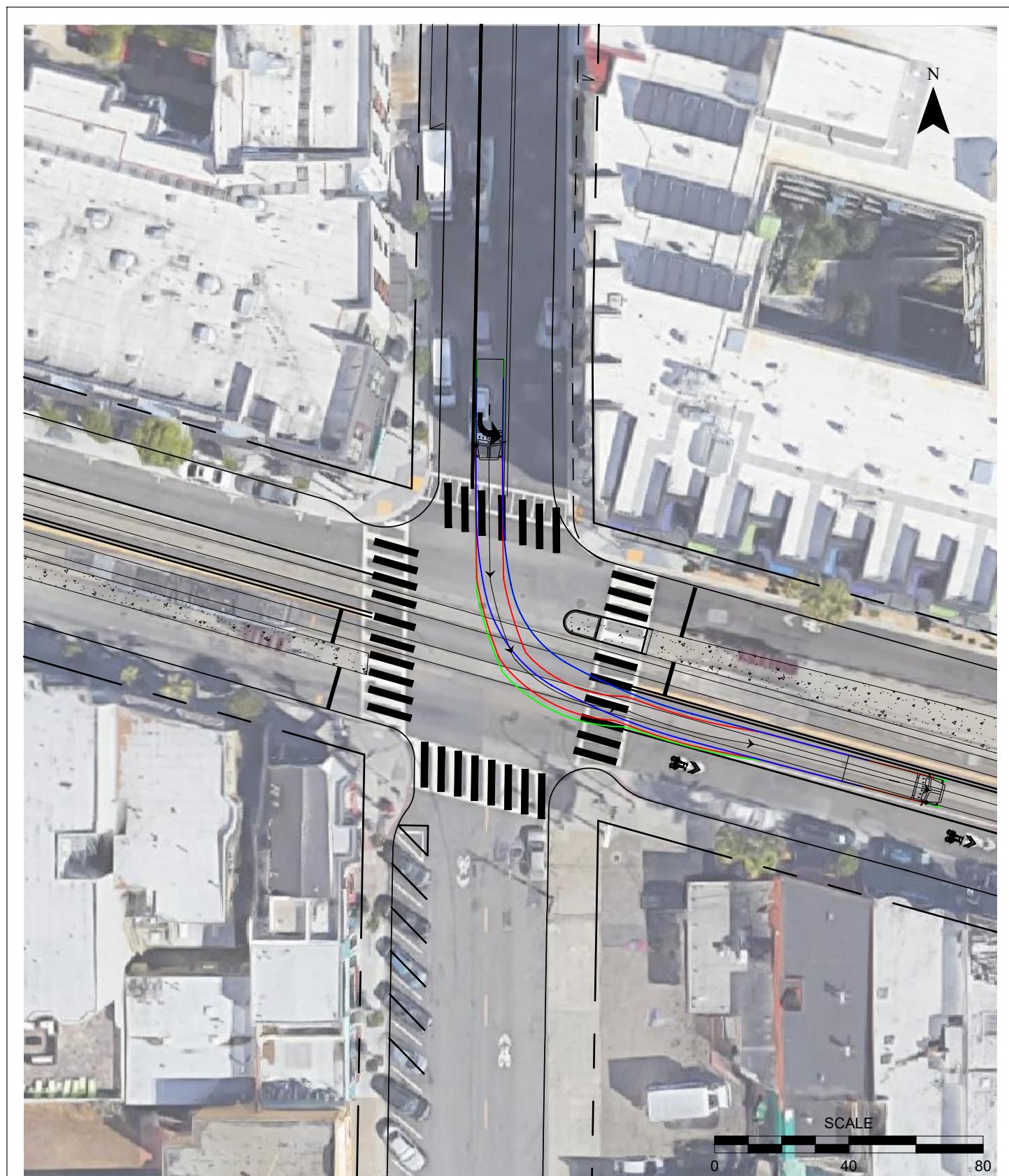
above, it would not be possible to extend the island far enough into the intersection to reduce the turning radii and modify the turning path for southbound left turning vehicles without obstructing the movement of vehicles continuing northbound through the intersection.

### ***Split Phasing***

Another alternative considered in this evaluation is the effect of split phasing for the northbound and southbound approaches. Currently, the control type for the intersection is coordinated-actuated having the northbound and southbound movements on Lee Avenue concurrently moving. If split phasing is to be implemented, the cycle length and the effective green time for the coordinated eastbound-westbound phases along Ocean Avenue would need to remain fixed, as to not impact coordination with other signals along the corridor. Thus, the effective green time for the actuated phases along Lee Avenue would remain fixed.

Split phasing for northbound and southbound movements would increase the overall average intersection delay under the Developer's Proposed Option and Additional Housing Option by 23.8 seconds and 19.8 seconds during the weekday a.m. peak hour and by 35.8 seconds and 61.9 seconds during the weekday p.m. peak hour, relative to respective plus project conditions with implementation of the southbound left turn and through/right turn lane (Table 10). The intersection would degrade from level of service B with implementation of the southbound left turn and through/right turn lane to level of service D (Developer's Proposed Option, weekday a.m. and p.m. periods and Additional Housing Option, weekday a.m. period) or E (Additional Housing Option, weekday p.m. period) with implementation of split phasing. The 95<sup>th</sup> percentile queue lengths were reported to increase on all approaches.

Based on the analysis presented in this section, with maintenance of the current cycle length and coordination along Ocean Avenue, this alternative would result in increased delay to transit vehicles and increased queue lengths compared to the other alternatives. Therefore, it is not recommended. Synchro analysis worksheets are included as Attachment F.



Pedestrian Refuge/Boarding Island Extension

Figure  
1

## Ridership and Capacity Analysis (INFORMATIONAL ONLY)

For informational purposes, transit ridership and capacity for the weekday a.m. and p.m. peak hour were assessed for local San Francisco Municipal Railway (Muni) lines (K, 8, 23, 28R, 29, 43, 49, 54) and regional transit routes (BART) within about one-half-mile distance of the project site.

Transit riders accessing regional transit stops that are located outside of walking distance (e.g., Caltrain) were assigned to local Muni and BART lines for purposes of the analysis. Ridership and capacity are referenced from the *Transit Data for Transportation Impact Studies Memorandum* (May 15, 2015) and *Updated BART Regional Screenlines – Revised* (October 17, 2016). Existing ridership and capacity on Muni lines serving the project site was referenced from automatic passenger count (APC) data collected in Fall 2013 and represents conditions as Muni vehicles pass through their respective maximum load point (MLP). The MLP is defined as the stop along a given line where average passenger loads reach their peak. Based on the ridership and capacity data, a capacity utilization percentage was calculated as a measure of crowding inside transit vehicles. For each line, the capacity utilization is reported for the respective MLP.<sup>1</sup>

As shown in Table 1, the Developer’s Proposed Option is estimated to generate 153 transit trips (25 inbound, 128 outbound) during the weekday a.m. peak hour and 195 transit trips (162 inbound, 33 outbound) during the weekday p.m. peak hour. The Additional Housing Option is estimated to generate 202 transit trips (34 inbound, 168 outbound) during the weekday a.m. peak hour and 259 transit trips (216 inbound, 43 outbound) during the weekday p.m. peak hour.

Transit trips to and from the site would use the nearby Muni bus, light rail and BART lines for local trips, and the regional lines (potentially with transfers to/from Muni) for trips outside San Francisco. Based on the transit trip distribution from the SF Workbook summarized in Table 14, the project-generated transit trips were distributed to the eight districts of San Francisco, Treasure Island, the East Bay, the North Bay, and the South Bay, as shown in Table 15.<sup>2</sup>

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<sup>1</sup> The SFMTA Board has determined that this threshold most accurately reflects actual operations and the likelihood of “pass-ups” (i.e., vehicles not stopping to pick up more passengers). For local public transit services, a capacity utilization greater than 85 percent is considered unacceptable. For regional public transit services, a capacity utilization standard of 100 percent is applied. A capacity standard based on a full-seated load reflects the fact that regional transit operators generally serve longer-distance trips and passengers would not be expected to stand for extended periods of time.

<sup>2</sup> Inbound and outbound distribution reflects the weekday p.m. peak hour splits and is reversed for the weekday a.m. peak hour.

**Table 14: Transit Trip Distribution**

District Origin / Destination	Transit Lines	Developer's Proposed Option		Additional Housing Option	
		Inbound	Outbound	Inbound	Outbound
Downtown/N. Beach	43, K, BART	43%	30%	43%	31%
SoMa	K, BART	7%	16%	7%	18%
Marina/W. Mkt	43, 49	7%	6%	7%	7%
Mission/Potrero	29, 43, 48, BART	0%	26%	0%	21%
Outer Mission/Hills	8, 23, 28R, 29, 43, 54, K	9%	18%	9%	19%
Bayshore	8, 43, 54	3%	0%	3%	0%
Richmond	28R, 29, 43	13%	0%	13%	0%
Sunset	23, 43	3%	0%	3%	0%
Islands	BART or 43 to 25	0%	0%	0%	0%
South Bay	BART	4%	2%	4%	2%
East Bay	BART	11%	2%	11%	2%
North Bay	N/A	0%	0%	0%	0%
<b>Total</b>	-	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Source: Kittelson & Associates, Inc. 2018

Notes: Dtwn = Downtown; N. Beach = North Beach; W. Mkt = Western Market; Inbound = inbound to the project site; Outbound = outbound from the project site. Inbound and outbound splits reflect the weekday p.m. peak hour and are reversed for the weekday a.m. peak hour.

**Table 15: Project-Generated Transit Trips**

District Origin / Destination	Developer's Proposed Option				Additional Housing Option			
	a.m. Peak Hour		p.m. Peak Hour		a.m. Peak Hour		p.m. Peak Hour	
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
Dtwn/N. Beach	7	55	70	10	11	72	93	13
SoMa	4	9	11	5	6	11	14	8
Marina/W. Mkt	2	9	11	2	2	11	15	3
Mission/Potrero	7	0	0	8	7	0	0	9
Outer Mission/Hills	4	11	14	6	6	15	19	8
Bayshore	0	4	5	0	0	5	7	0
Richmond	0	17	21	0	0	22	28	0
Sunset	0	4	5	0	0	6	7	0
Islands	0	0	0	0	0	0	0	0
South Bay	1	5	7	1	1	7	9	1
East Bay	0	14	18	1	1	19	24	1
North Bay	0	0	0	0	0	0	0	0
<b>Total</b>	<b>25</b>	<b>128</b>	<b>162</b>	<b>33</b>	<b>34</b>	<b>168</b>	<b>216</b>	<b>43</b>

Source: Kittelson & Associates, Inc. 2018

Notes: Dtwn = Downtown; N. Beach = North Beach; W. Mkt = Western Market; Inbound = inbound to the project site; Outbound = outbound from the project site.

Using this directional distribution, transit riders were assigned to a local route and/or regional screenline for purposes of the transit ridership and capacity analysis. The results of the local Muni

ridership and capacity assessment are summarized for Existing plus Developer's Proposed Option and Existing plus Additional Housing Option for the weekday a.m. peak hour (Table 16) and weekday p.m. peak hour (Table 17). The results of the regional ridership and capacity analysis for Existing plus Developer's Proposed Option and Existing plus Additional Housing Option for the weekday a.m. peak hour, weekday p.m. peak hour, and Cumulative Conditions are shown in Table 18, Table 19, and, Table 20 respectively. Transit ridership and capacity calculations are included as Attachment G.

#### *Local Muni Line Analysis*

As shown in Table 16, with the addition of transit riders generated by the Developer's Proposed Option and Additional Housing Option, all Muni lines, with the exception of the K Ingleside, would operate under the 85 percent capacity utilization threshold during the weekday a.m. peak hour. The K Ingleside would operate at 104 percent capacity utilization in the northbound direction (inbound to downtown). The Developer's Proposed Option and Additional Housing Option would add 12 and 15 riders to this line, respectively. This level of ridership increase represents about one percent of the overall ridership on the line.

As shown in Table 17, with the addition of transit riders generated by the Developer's Proposed Option and Additional Housing Option, all Muni lines, with the exception of the K Ingleside, would operate under 85 percent capacity utilization during the weekday p.m. peak hour. The K Ingleside would operate at 96 percent capacity utilization in the northbound direction (inbound to downtown) and 116 percent capacity utilization in the southbound direction (outbound from downtown). The Developer's Proposed Option would add 10 riders in the northbound (inbound to downtown) direction and 24 riders in the southbound (outbound from downtown) direction. This level of ridership increase represents about one percent of the overall ridership on the line in the northbound (inbound to downtown) direction and three percent of the overall ridership on the line in the southbound (outbound from downtown) direction. The Additional Housing Option would add 15 riders in the northbound (inbound to downtown) direction and 33 riders in the southbound (outbound from downtown) direction. This level of ridership increase represents about two percent of the overall ridership on the line in the northbound (inbound to downtown) direction and four percent of the overall ridership on the line in the southbound (outbound from downtown) direction, respectively.

#### *Regional Transit Screenlines*

Table 18 and Table 19 summarize the ridership and capacity for the regional screenlines under Existing plus Developer's Proposed Option and under Existing plus Additional Housing Option for the weekday a.m. and p.m. peak hours, respectively. Table 20 summarizes the ridership and capacity for the regional screenline under Cumulative Conditions. As shown in Table 18, the Developer's Proposed Option would add approximately 39 new transit riders and the Additional Housing Option would add 52 new transit riders to the regional screenlines during the weekday a.m. peak hour. As shown in Table 19, the Developer's Proposed Option would add approximately 55 new transit riders and the Additional Housing Option would add 72 new transit riders to the regional screenlines during the weekday p.m. peak hour.

Under Existing plus Developer's Proposed Option and under Existing plus Additional Housing Option, all screenlines and operators would continue to operate under 100 percent capacity utilization during the weekday a.m. peak hour, with the exception of BART East Bay service and the East Bay screenline, which would operate at 109 percent capacity and 102 percent capacity, respectively (Table 18). During the weekday p.m. peak hour, the BART East Bay service would operate at 107 percent capacity (Table 19). Under Cumulative Conditions, the BART East Bay service would operate at 118 percent capacity during the weekday a.m. peak hour and 112 percent capacity during the weekday p.m. peak hour.

The proposed project's incremental increase in ridership represents about one percent of the overall ridership on BART East Bay service and the East Bay screenline under Existing plus Project Conditions and less than one percent of ridership under Cumulative Conditions.

**Table 16: Directional Muni Analysis – Existing plus Project, Weekday a.m. Peak Hour**

Direction / Line	Weekday a.m. Peak Hour								
	Existing Conditions			Existing plus Developer's Proposed Option			Existing plus Additional Housing Option		
	Ridership	Capacity	Utilization	Ridership	Utilization	Ridership	Utilization	Project	Total
<b>Northbound</b>									
8 Bayshore	-	-	-	-	-	-	-	-	-
28R 19 <sup>th</sup> Avenue Rapid	225	378	60%	8	233	62%	8	233	62%
43 Masonic	367	447	82%	4	371	83%	8	375	84%
49 Van Ness/Mission	248	658	38%	8	256	39%	5	256	39%
K Ingleside	925	893	104%	12	937	105%	15	940	105%
<i>Direction Subtotal</i>	<i>1,765</i>	<i>2,376</i>	<i>74%</i>	<i>32</i>	<i>1,797</i>	<i>76%</i>	<i>36</i>	<i>1,801</i>	<i>76%</i>
<b>Southbound</b>									
8 Bayshore	512	752	68%	6	518	69%	3	515	68%
28R 19 <sup>th</sup> Avenue Rapid	126	378	33%	6	132	35%	15	141	37%
43 Masonic	229	441	52%	30	259	59%	36	265	60%
49 Van Ness/Mission	601	658	91%	3	604	92%	8	609	93%
K Ingleside	584	893	65%	14	598	67%	21	605	68%
<i>Direction Subtotal</i>	<i>2,052</i>	<i>3,122</i>	<i>66%</i>	<i>59</i>	<i>2,111</i>	<i>68%</i>	<i>83</i>	<i>2,135</i>	<i>68%</i>
<b>Eastbound</b>									
23 Monterey	87	189	46%	2	89	47%	5	92	49%
29 Sunset	356	441	81%	12	368	83%	10	366	83%
54 Felton	127	189	67%	6	133	70%	7	134	71%
<i>Direction Subtotal</i>	<i>570</i>	<i>819</i>	<i>70%</i>	<i>20</i>	<i>590</i>	<i>72%</i>	<i>22</i>	<i>592</i>	<i>72%</i>
<b>Westbound</b>									
23 Monterey	121	189	64%	0	121	64%	3	124	66%
29 Sunset	225	378	60%	2	227	60%	3	228	60%
54 Felton	112	189	59%	1	113	60%	3	115	61%
<i>Direction Subtotal</i>	<i>458</i>	<i>756</i>	<i>61%</i>	<i>3</i>	<i>461</i>	<i>61%</i>	<i>9</i>	<i>467</i>	<i>62%</i>
<i>Muni Local Lines Total</i>	<i>4,845</i>	<i>7,073</i>	<i>68%</i>	<i>114</i>	<i>4,959</i>	<i>70%</i>	<i>150</i>	<i>4,995</i>	<i>71%</i>

Source: San Francisco Planning Department, *Transit Data for Transportation Impact Studies*. May 2015; Kittelson & Associates, Inc. 2018.

Notes: “-” indicates value not applicable.

**Table 17: Directional Muni Analysis – Existing plus Project, Weekday p.m. Peak Hour**

Direction / Line	Weekday p.m. Peak Hour								
	Existing Conditions			Existing plus Developer's Proposed Option			Existing plus Additional Housing Option		
	Ridership	Capacity	Utilization	Ridership	Utilization	Ridership	Utilization	Project	Total
<b>Northbound</b>									
8 Bayshore	480	752	64%	3	483	64%	3	483	64%
28R 19 <sup>th</sup> Avenue Rapid	-	-	-	-	-	-	-	-	-
43 Masonic	149	378	39%	12	161	43%	20	169	45%
49 Van Ness/Mission	337	752	45%	10	347	46%	12	349	46%
K Ingleside	859	893	96%	10	869	97%	17	876	98%
<i>Direction Subtotal</i>	<i>1,825</i>	<i>2,775</i>	<i>66%</i>	<i>35</i>	<i>1,860</i>	<i>67%</i>	<i>52</i>	<i>1,877</i>	<i>68%</i>
<b>Southbound</b>									
8 Bayshore	-	-	-	-	-	-	-	-	-
28R 19 <sup>th</sup> Avenue Rapid	-	-	-	-	-	-	-	-	-
43 Masonic	249	378	66%	37	286	76%	42	291	77%
49 Van Ness/Mission	346	752	46%	16	362	48%	17	363	48%
K Ingleside	1,064	893	119%	24	1,088	122%	33	1,097	123%
<i>Direction Subtotal</i>	<i>1,659</i>	<i>2,023</i>	<i>82%</i>	<i>77</i>	<i>1,736</i>	<i>86%</i>	<i>92</i>	<i>1,751</i>	<i>87%</i>
<b>Eastbound</b>									
23 Monterey	90	189	48%	2	92	49%	7	97	51%
29 Sunset	260	378	69%	8	268	71%	12	272	72%
54 Felton	129	189	68%	6	135	71%	6	135	71%
<i>Direction Subtotal</i>	<i>479</i>	<i>756</i>	<i>63%</i>	<i>16</i>	<i>495</i>	<i>65%</i>	<i>25</i>	<i>505</i>	<i>67%</i>
<b>Westbound</b>									
23 Monterey	90	189	48%	2	92	49%	5	95	50%
29 Sunset	203	315	64%	7	210	67%	10	213	68%
54 Felton	112	189	59%	3	115	61%	3	115	61%
<i>Direction Subtotal</i>	<i>405</i>	<i>693</i>	<i>58%</i>	<i>12</i>	<i>417</i>	<i>60%</i>	<i>18</i>	<i>423</i>	<i>61%</i>
<i>Muni Local Lines Total</i>	<i>4,368</i>	<i>6,247</i>	<i>70%</i>	<i>140</i>	<i>4,508</i>	<i>72%</i>	<i>187</i>	<i>4,555</i>	<i>73%</i>

Source: San Francisco Planning Department, *Transit Data for Transportation Impact Studies*. May 2015; Kittelson & Associates, Inc. 2018.

Notes: “-” indicates value not applicable.

**Table 18: Regional Screenlines – Existing plus Project, Weekday a.m. Peak Hour**

Regional Screenline Transit Provider / Service	Weekday a.m. Peak Hour (Inbound)								
	Existing Conditions			Existing plus Developer's Proposed Option			Existing plus Additional Housing Option		
	Ridership	Capacity	Utilization	Ridership		Utilization	Ridership		Utilization
				Project	Total		Project	Total	
<b>East Bay</b>									
BART	25,399	23,256	109%	34	25,433	109%	45	25,444	109%
AC Transit	1,568	2,829	55%	0	1,568	55%	0	1,568	55%
Ferries	810	1,170	69%	0	810	69%	0	810	69%
<i>Screenline Total</i>	<i>27,777</i>	<i>27,255</i>	<i>102%</i>	<i>35</i>	<i>27,812</i>	<i>102%</i>	<i>44</i>	<i>27,821</i>	<i>102%</i>
<b>North Bay</b>									
GGT Bus	1,330	2,543	52%	0	1,330	52%	0	1,330	52%
Ferries	1,082	1,959	55%	0	1,082	55%	0	1,082	55%
<i>Screenline Total</i>	<i>2,412</i>	<i>4,502</i>	<i>54%</i>	<i>0</i>	<i>2,412</i>	<i>54%</i>	<i>0</i>	<i>2,412</i>	<i>54%</i>
<b>South Bay</b>									
BART	14,150	19,367	73%	5	14,155	73%	7	14,157	73%
Caltrain	2,171	3,100	70%	0	2,171	70%	0	2,171	70%
SamTrans	255	520	49%	0	255	49%	0	255	49%
Ferries	-	-	-	-	-	-	-	-	-
<i>Screenline Total</i>	<i>16,576</i>	<i>22,987</i>	<i>72%</i>	<i>5</i>	<i>16,581</i>	<i>72%</i>	<i>7</i>	<i>16,583</i>	<i>72%</i>
<i>Total All Screenlines</i>	<i>46,765</i>	<i>54,744</i>	<i>85%</i>	<i>39</i>	<i>46,804</i>	<i>85%</i>	<i>52</i>	<i>46,817</i>	<i>86%</i>

Source: San Francisco Planning Department, *Transit Data Memo for TIS (May 2015)* and *Updated BART Regional Screenlines – Revised (October 17, 2016)*; Kittelson & Associates, Inc. 2018.

Notes: The analysis evaluates inbound service (toward Downtown) during the weekday a.m. peak hour and outbound service (from Downtown) during the weekday p.m. peak hour.

**Table 19: Regional Screenlines – Existing plus Project, Weekday p.m. Peak Hour**

Regional Screenline Transit Provider / Service	Weekday p.m. Peak Hour (Outbound)								
	Existing Conditions			Existing plus Developer's Proposed Option			Existing plus Additional Housing Option		
	Ridership	Capacity	Utilization	Ridership		Utilization	Ridership		Utilization
				Project	Total		Project	Total	
<b>East Bay</b>									
BART	24,488	22,784	107%	48	24,536	108%	63	24,551	108%
AC Transit	2,256	3,926	57%	0	2,256	57%	0	2,256	57%
Ferries	805	1,615	50%	0	805	50%	0	805	50%
<i>Screenline Total</i>	<i>27,549</i>	<i>28,325</i>	<i>97%</i>	<i>45</i>	<i>27,594</i>	<i>97%</i>	<i>63</i>	<i>27,610</i>	<i>97%</i>
<b>North Bay</b>									
GGT Bus	1,384	2,817	49%	0	1,384	49%	0	1,384	49%
Ferries	968	1,959	49%	0	968	49%	0	968	49%
<i>Screenline Total</i>	<i>2,352</i>	<i>4,776</i>	<i>49%</i>	<i>0</i>	<i>2,352</i>	<i>49%</i>	<i>0</i>	<i>2,352</i>	<i>49%</i>
<b>South Bay</b>									
BART	13,500	18,900	71%	7	13,507	71%	9	13,509	71%
Caltrain	2,377	3,100	77%	0	2,377	77%	0	2,377	77%
SamTrans	141	320	44%	0	141	44%	0	141	44%
Ferries	-	-	-	-	-	-	-	-	-
<i>Screenline Total</i>	<i>16,018</i>	<i>22,320</i>	<i>72%</i>	<i>7</i>	<i>16,025</i>	<i>72%</i>	<i>9</i>	<i>16,027</i>	<i>72%</i>
<i>Total All Screenlines</i>	<i>46,765</i>	<i>45,919</i>	<i>55,421</i>	<i>55</i>	<i>45,970</i>	<i>83%</i>	<i>72</i>	<i>45,988</i>	<i>83%</i>

Source: San Francisco Planning Department, *Transit Data Memo for TIS (May 2015)* and *Updated BART Regional Screenlines – Revised (October 17, 2016)*; Kittelson & Associates, Inc. 2018.

Notes: The analysis evaluates inbound service (toward Downtown) during the weekday a.m. peak hour and outbound service (from Downtown) during the weekday p.m. peak hour.

**Table 20: Regional Screenlines – Cumulative Conditions**

Regional Screenline Transit Provider / Service	Cumulative Conditions									
	Weekday a.m. Peak Hour			Weekday p.m. Peak Hour			Project Contribution			
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization	Developer's Proposed Project		Additional Housing Option	
							a.m.	p.m.	a.m.	p.m.
<b>East Bay</b>										
BART	38,000	32,100	118%	36,000	32,100	112%	0.11%	0.15%	0.14%	0.20%
AC Transit	7,000	12,000	58%	7,000	12,000	58%	0.00%	0.00%	0.00%	0.00%
Ferries	4,682	5,940	79%	5,319	5,940	90%	0.00%	0.00%	0.00%	0.00%
<i>Screenline Total</i>	<i>49,682</i>	<i>50,040</i>	<i>99%</i>	<i>48,319</i>	<i>50,040</i>	<i>97%</i>	<i>0.07%</i>	<i>0.10%</i>	<i>0.09%</i>	<i>0.13%</i>
<b>North Bay</b>										
GGT Bus	1,990	2,543	78%	2,070	2,817	73%	0.00%	0.00%	0.00%	0.00%
Ferries	1,619	1,959	83%	1619	1,959	83%	0.00%	0.00%	0.00%	0.00%
<i>Screenline Total</i>	<i>3,609</i>	<i>4,502</i>	<i>80%</i>	<i>3,689</i>	<i>4,776</i>	<i>77%</i>	<i>0.00%</i>	<i>0.00%</i>	<i>0.00%</i>	<i>0.00%</i>
<b>South Bay</b>										
BART	21,000	28,808	73%	20,000	28,808	69%	0.02%	0.02%	0.02%	0.03%
Caltrain	2,310	3,600	64%	2,529	3,600	70%	0.00%	0.00%	0.00%	0.00%
SamTrans	271	520	52%	150	320	47%	0.00%	0.00%	0.00%	0.00%
Ferries	59	200	30%	59	200	30%	0.00%	0.00%	0.00%	0.00%
<i>Screenline Total</i>	<i>23,640</i>	<i>33,128</i>	<i>71%</i>	<i>22,738</i>	<i>32,928</i>	<i>69%</i>	<i>0.02%</i>	<i>0.02%</i>	<i>0.02%</i>	<i>0.02%</i>
<i>Total All Screenlines</i>	<i>76,931</i>	<i>87,670</i>	<i>88%</i>	<i>74,746</i>	<i>87,744</i>	<i>85%</i>	<i>0.04%</i>	<i>0.06%</i>	<i>0.06%</i>	<i>0.08%</i>

Source: San Francisco Planning Department, *Transit Data Memo for TIS (May 2015)* and *Updated BART Regional Screenlines – Revised (October 17, 2016)*; Kittelson & Associates, Inc. 2018.

Notes: The analysis evaluates inbound service (toward Downtown) during the weekday a.m. peak hour and outbound service (from Downtown) during the weekday p.m. peak hour.

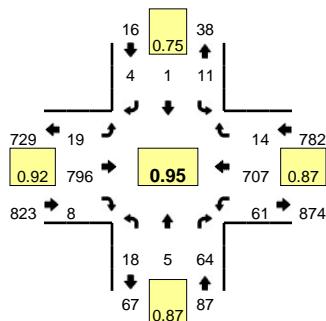
## **Attachment A – Intersection Turning Movement Volumes**

Type of peak hour being reported: Intersection Peak

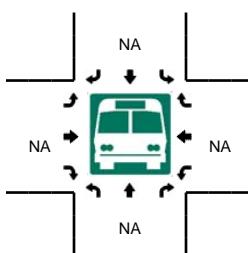
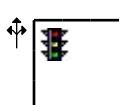
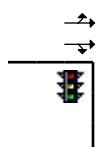
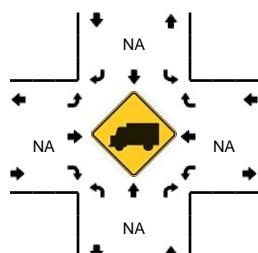
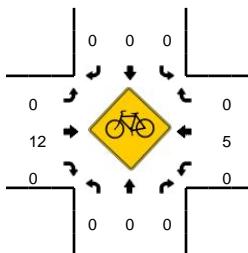
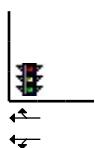
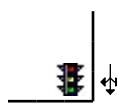
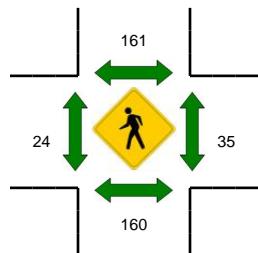
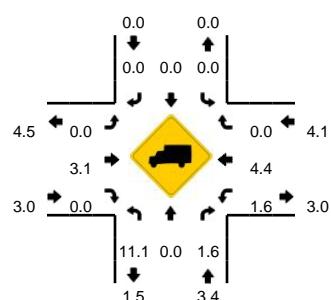
Method for determining peak hour: Total Entering Volume

**LOCATION:** Brighton Ave -- Ocean Ave  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14777401  
**DATE:** Tue, Aug 28 2018



**Peak-Hour: 7:30 AM -- 8:30 AM**  
**Peak 15-Min: 7:30 AM -- 7:45 AM**



15-Min Count Period Beginning At	Brighton Ave (Northbound)				Brighton Ave (Southbound)				Ocean Ave (Eastbound)				Ocean Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	0	20	0	4	0	0	0	1	136	2	0	9	126	1	0	302	
7:15 AM	4	0	13	0	2	0	1	0	0	144	2	0	21	171	2	0	360	
7:30 AM	3	1	16	0	1	1	2	0	1	200	1	0	13	209	2	0	450	
7:45 AM	2	0	12	0	6	0	0	0	6	193	3	0	13	164	4	0	403	1515
8:00 AM	7	2	18	0	4	0	1	0	9	212	3	0	10	136	5	2	409	1622
8:15 AM	6	2	18	0	0	0	1	0	3	191	1	0	22	198	3	1	446	1708
8:30 AM	6	7	11	0	3	1	1	0	6	178	2	0	21	177	4	0	417	1675
8:45 AM	5	3	8	1	2	0	0	0	8	205	2	0	25	141	3	1	404	1676

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	4	64	0	4	4	8	0	4	800	4	0	52	836	8	0	1800
Heavy Trucks	0	0	0	0	0	0	0	0	0	20	0	0	4	32	0	0	56
Pedestrians	84		100							12				28			224
Bicycles	0	0	0	0	0	0	0	0	0	4	0	0	0	2	0	0	6
Railroad																	
Stopped Buses																	

Comments:

Report generated on 9/7/2018 3:43 PM

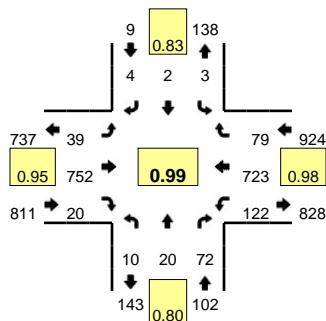
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

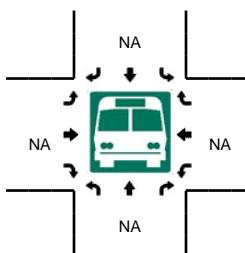
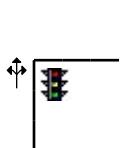
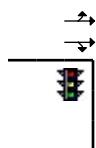
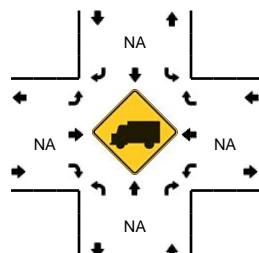
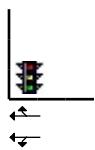
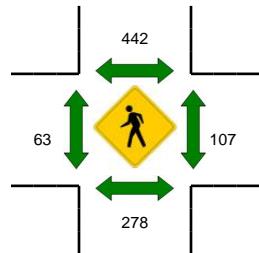
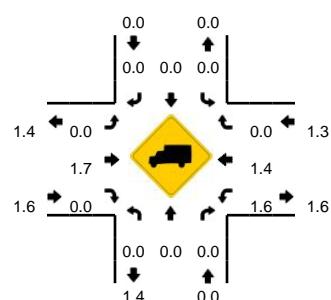
Method for determining peak hour: Total Entering Volume

**LOCATION:** Brighton Ave -- Ocean Ave  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14777402  
**DATE:** Tue, Aug 28 2018



**Peak-Hour: 5:00 PM -- 6:00 PM**  
**Peak 15-Min: 5:15 PM -- 5:30 PM**



15-Min Count Period Beginning At	Brighton Ave (Northbound)				Brighton Ave (Southbound)				Ocean Ave (Eastbound)				Ocean Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	5	4	12	0	3	0	0	0	10	186	10	0	22	173	20	0	445	
4:15 PM	5	6	10	0	2	0	1	0	8	174	10	0	20	192	25	0	453	
4:30 PM	6	5	23	0	0	1	1	0	9	152	4	0	23	187	20	0	431	
4:45 PM	3	5	15	0	1	0	1	0	11	177	6	1	28	178	15	0	441	1770
5:00 PM	3	7	16	0	0	0	1	0	9	186	7	0	30	188	17	0	464	1789
5:15 PM	0	7	19	0	2	1	0	0	13	187	7	0	27	182	22	1	468	1804
5:30 PM	4	4	19	0	0	0	2	0	11	176	2	0	39	173	24	0	454	1827
5:45 PM	3	2	18	0	1	1	1	0	6	203	4	0	25	180	16	0	460	1846

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	28	76	0	8	4	0	0	52	748	28	0	108	728	88	4	1872
Heavy Trucks	0	0	0	0	0	0	0	0	0	12	0	0	4	20	0	0	36
Pedestrians	280				392				44				108				824
Bicycles	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
Railroad																	
Stopped Buses																	

*Comments:*

Report generated on 9/7/2018 3:43 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

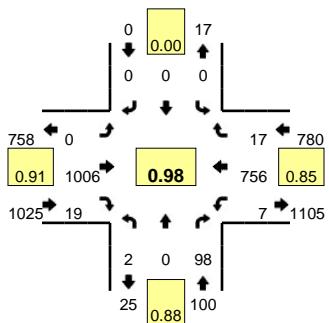
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

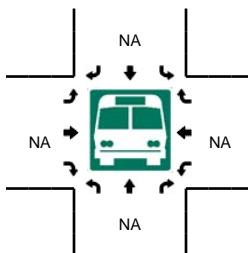
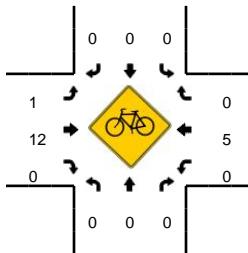
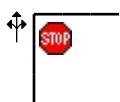
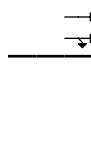
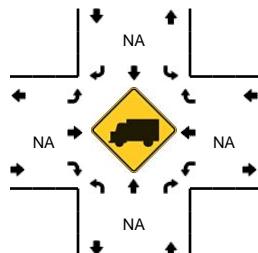
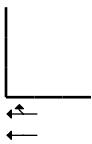
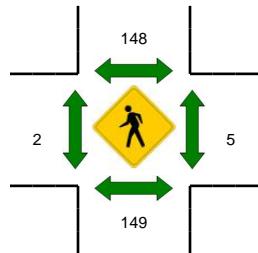
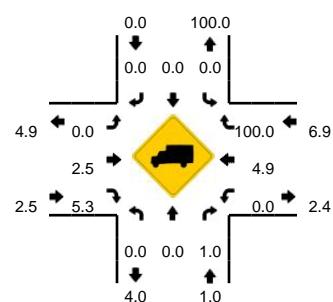
**LOCATION:** Harold Ave/Phelan Lp -- Ocean Ave  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14777403

**DATE:** Tue, Aug 28 2018



**Peak-Hour: 7:45 AM -- 8:45 AM**  
**Peak 15-Min: 8:15 AM -- 8:30 AM**



15-Min Count Period Beginning At	Harold Ave/Phelan Lp (Northbound)				Harold Ave/Phelan Lp (Southbound)				Ocean Ave (Eastbound)				Ocean Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	16	0	0	0	0	0	0	182	3	0	0	135	4	0	340	
7:15 AM	1	0	19	0	0	0	0	0	0	185	4	0	2	185	3	1	400	
7:30 AM	2	0	16	0	0	0	0	0	0	216	3	0	3	233	3	0	476	
7:45 AM	0	0	25	0	0	0	0	0	0	249	5	0	3	183	5	0	470	1686
8:00 AM	0	0	29	0	0	0	0	0	0	278	5	0	0	155	6	0	473	1819
8:15 AM	1	0	16	0	0	0	0	0	0	241	8	0	3	212	2	1	484	1903
8:30 AM	1	0	28	0	0	0	0	0	0	238	1	0	0	206	4	0	478	1905
8:45 AM	1	0	26	0	0	0	0	0	0	261	2	0	1	175	4	0	470	1905

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	0	64	0	0	0	0	0	0	964	32	0	12	848	8	4	1936
Heavy Trucks	0	0	0	0	0	0	0	0	0	32	0	0	0	36	8	0	76
Pedestrians	204				184				8				0				396
Bicycles	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0		2
Railroad																	
Stopped Buses																	

*Comments:*

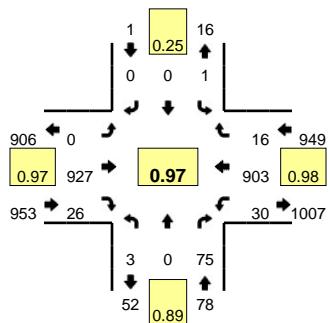
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

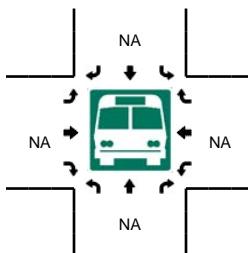
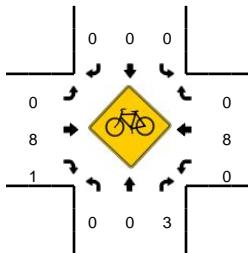
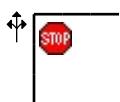
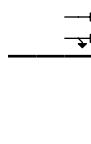
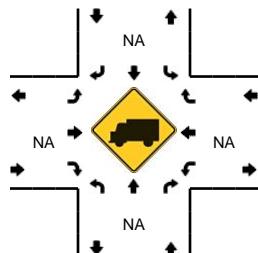
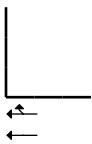
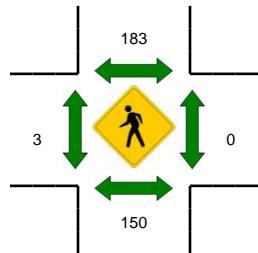
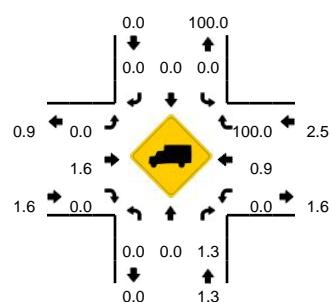
**LOCATION:** Harold Ave/Phelan Lp -- Ocean Ave  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14777404

**DATE:** Tue, Aug 28 2018



**Peak-Hour: 4:45 PM -- 5:45 PM**  
**Peak 15-Min: 5:15 PM -- 5:30 PM**



15-Min Count Period Beginning At	Harold Ave/Phelan Lp (Northbound)				Harold Ave/Phelan Lp (Southbound)				Ocean Ave (Eastbound)				Ocean Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	0	22	0	0	0	0	0	0	224	4	0	4	230	3	0	489	
4:15 PM	0	0	23	0	0	0	0	0	0	206	7	0	3	207	3	0	449	
4:30 PM	2	0	19	0	0	0	0	0	1	188	4	0	7	218	5	0	444	
4:45 PM	1	0	16	0	1	0	0	0	0	238	8	0	5	229	3	0	501	1883
5:00 PM	0	0	18	0	0	0	0	0	0	226	2	0	3	232	6	2	489	1883
5:15 PM	2	0	24	0	0	0	0	0	0	238	6	0	10	229	2	1	512	1946
5:30 PM	0	0	17	0	0	0	0	0	0	225	10	0	8	213	5	1	479	1981
5:45 PM	0	0	22	0	0	0	0	0	0	233	5	0	1	205	1	0	467	1947

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	0	96	0	0	0	0	0	0	952	24	0	40	916	8	4	2048
Heavy Trucks	0	0	0	0	0	0	0	0	0	16	0	0	0	16	8	0	40
Pedestrians	128				152				0				0				280
Bicycles	0	0	2		0	0	0		0	2	0		0	1	0		5
Railroad																	
Stopped Buses																	

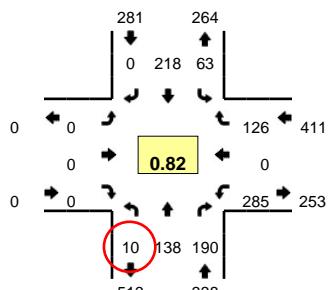
*Comments:*

Type of peak hour being reported: Intersection Peak

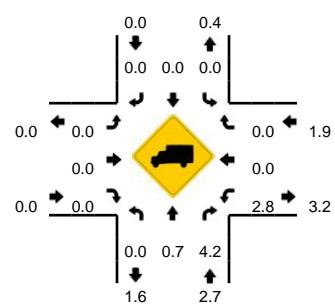
Method for determining peak hour: Total Entering Volume

**LOCATION:** Phelan Ave -- Judson Ave  
**CITY/STATE:** San Francisco, CA

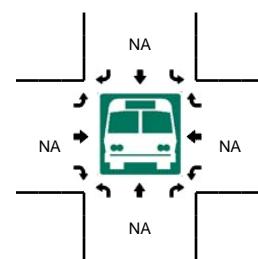
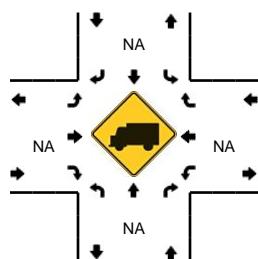
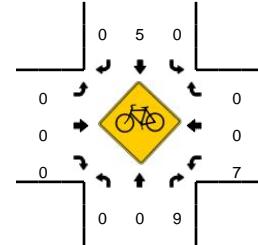
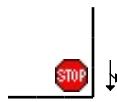
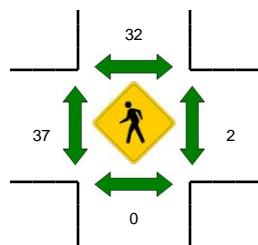
**QC JOB #:** 14612205  
**DATE:** Wed, Jan 31 2018



**Peak-Hour: 8:00 AM -- 9:00 AM**  
**Peak 15-Min: 8:45 AM -- 9:00 AM**



U-Turns?



5-Min Count Period Beginning At	Phelan Ave (Northbound)				Phelan Ave (Southbound)				Judson Ave (Eastbound)				Judson Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	8	1	0	0	4	0	0	0	0	0	0	4	0	1	1	19	
7:05 AM	0	7	4	3	0	6	0	0	0	0	0	0	5	0	3	0	28	
7:10 AM	0	7	12	1	4	7	0	0	0	0	0	0	11	0	1	0	43	
7:15 AM	0	13	9	0	1	8	0	0	0	0	0	0	6	0	2	0	39	
7:20 AM	0	16	8	3	0	6	0	0	0	0	0	0	7	0	4	0	44	
7:25 AM	0	20	16	0	1	2	0	0	0	0	0	0	14	0	11	0	64	
7:30 AM	0	21	22	2	1	7	0	0	0	0	0	0	14	0	9	0	76	
7:35 AM	0	25	18	2	0	6	0	0	0	0	0	0	16	0	10	2	79	
7:40 AM	0	24	37	1	0	12	0	0	0	0	0	0	16	0	8	0	98	
7:45 AM	0	17	30	2	1	11	0	0	0	0	0	0	16	0	10	0	87	
7:50 AM	0	10	17	1	6	11	0	0	0	0	0	0	15	0	7	0	67	
7:55 AM	0	17	7	0	3	17	0	0	0	0	0	0	16	0	8	1	69	713
8:00 AM	0	8	14	0	5	16	0	0	0	0	0	0	20	0	10	0	73	767
8:05 AM	0	12	16	2	9	16	0	0	0	0	0	0	24	0	12	0	91	830
8:10 AM	0	8	14	0	9	14	0	0	0	0	0	0	19	0	8	0	72	859
8:15 AM	0	14	15	0	5	18	0	0	0	0	0	0	19	0	11	0	82	902
8:20 AM	0	11	18	2	3	14	0	0	0	0	0	0	19	0	7	0	74	932
8:25 AM	0	12	17	0	5	18	0	0	0	0	0	0	21	0	15	0	88	956
8:30 AM	0	11	12	0	2	13	0	0	0	0	0	0	21	0	8	0	67	947
8:35 AM	0	11	13	2	5	20	0	0	0	0	0	0	18	0	12	0	81	949
8:40 AM	0	13	20	1	4	19	0	0	0	0	0	0	21	0	9	0	87	938
8:45 AM	0	11	16	1	4	25	0	0	0	0	0	0	32	0	7	0	96	947
8:50 AM	0	15	13	1	7	19	0	0	0	0	0	0	30	0	15	0	100	980
8:55 AM	0	12	22	1	5	26	0	0	0	0	0	0	41	0	12	0	119	1030

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	152	204	12	64	280	0	0	0	0	0	0	412	0	136	0	1260
Heavy Trucks	0	0	12	0	0	0	0	0	0	0	0	0	8	0	0	0	20
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	92	0	0	0	204
Bicycles	0	0	2	0	0	1	0	0	0	0	0	0	2	0	0	0	5
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Comments:

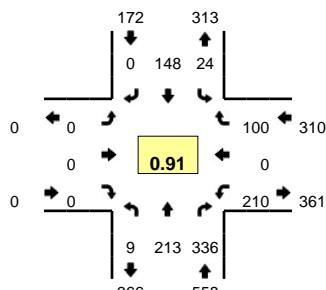
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

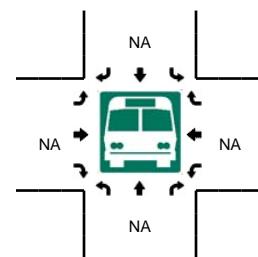
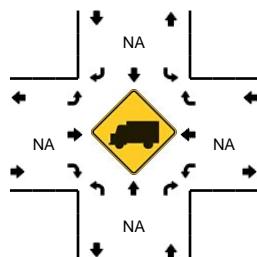
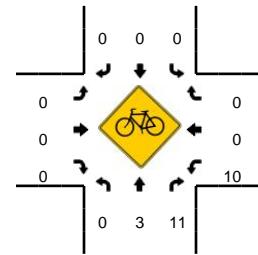
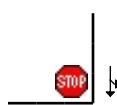
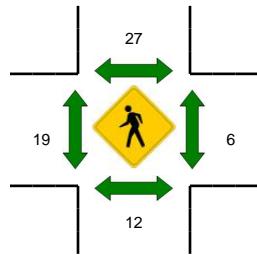
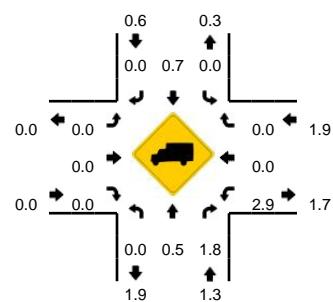
**LOCATION:** Phelan Ave -- Judson Ave  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14612206

**DATE:** Wed, Jan 31 2018



**Peak-Hour: 5:00 PM -- 6:00 PM**  
**Peak 15-Min: 5:45 PM -- 6:00 PM**



5-Min Count Period Beginning At	Phelan Ave (Northbound)				Phelan Ave (Southbound)				Judson Ave (Eastbound)				Judson Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	11	14	1	0	3	0	0	0	0	0	0	11	0	2	0	42	
4:05 PM	0	17	18	2	1	7	0	0	0	0	0	0	10	0	6	0	61	
4:10 PM	0	18	21	2	1	6	0	0	0	0	0	0	13	0	7	0	68	
4:15 PM	0	13	23	1	1	5	0	0	0	0	0	0	7	0	4	0	54	
4:20 PM	0	20	22	2	3	7	0	0	0	0	0	0	19	0	3	0	76	
4:25 PM	0	13	21	2	1	2	0	0	0	0	0	0	8	0	5	0	52	
4:30 PM	0	17	25	1	1	6	0	0	0	0	0	0	13	0	4	1	68	
4:35 PM	0	12	25	0	1	11	0	0	0	0	0	0	18	0	5	1	73	
4:40 PM	0	24	24	0	3	9	0	0	0	0	0	0	16	0	4	0	80	
4:45 PM	0	18	27	0	5	9	0	0	0	0	0	0	10	0	6	0	75	
4:50 PM	0	20	18	1	3	14	0	0	0	0	0	0	17	0	9	0	82	
4:55 PM	0	17	18	1	0	13	0	0	0	0	0	0	20	0	11	0	80	811
5:00 PM	0	20	30	0	3	13	0	0	0	0	0	0	14	0	8	0	88	857
5:05 PM	0	17	23	1	3	14	0	0	0	0	0	0	10	0	8	0	76	872
5:10 PM	0	20	30	1	3	9	0	0	0	0	0	0	15	0	5	0	83	887
5:15 PM	0	18	20	2	1	15	0	0	0	0	0	0	17	0	3	0	76	909
5:20 PM	0	19	26	1	1	7	0	0	0	0	0	0	22	0	7	0	83	916
5:25 PM	0	16	23	0	1	9	0	0	0	0	0	0	14	0	14	0	77	941
5:30 PM	0	18	36	0	3	15	0	0	0	0	0	0	14	0	9	0	95	968
5:35 PM	0	10	30	0	1	9	0	0	0	0	0	0	19	0	9	1	79	974
5:40 PM	0	19	35	1	1	14	0	0	0	0	0	0	22	0	6	0	98	992
5:45 PM	0	20	22	1	3	9	0	0	0	0	0	0	17	0	8	0	80	997
5:50 PM	0	19	34	0	2	17	0	0	0	0	0	0	17	0	9	0	98	1013
5:55 PM	0	17	27	2	2	17	0	0	0	0	0	0	28	0	14	0	107	1040

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	224	332	12	28	172	0	0	0	0	0	0	248	0	124	0	1140
Heavy Trucks	0	0	4	0	0	0	0	0	0	0	0	0	4	0	0	0	8
Pedestrians	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	84
Bicycles	0	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0	4
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Comments:

Report generated on 2/13/2018 3:04 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

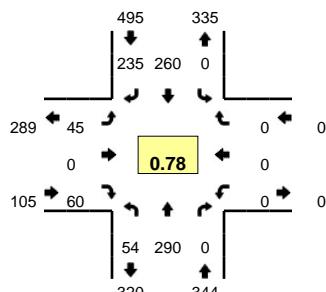
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

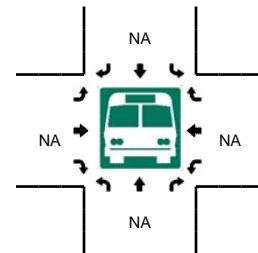
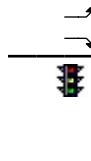
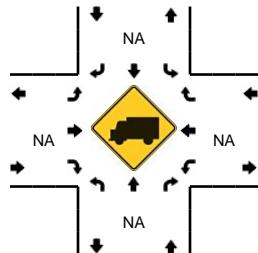
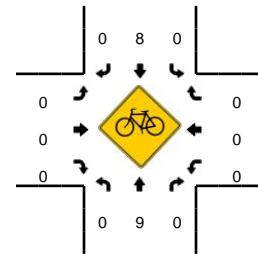
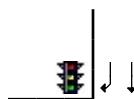
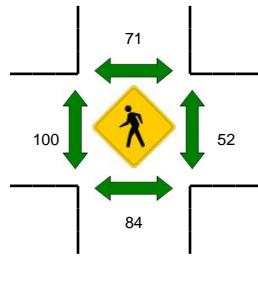
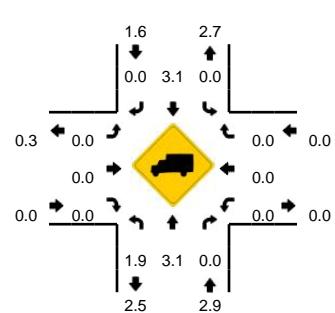
**LOCATION:** Phelan Ave -- CCSF Lot North Access  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14612207

**DATE:** Wed, Jan 31 2018



**Peak-Hour: 8:00 AM -- 9:00 AM**  
**Peak 15-Min: 8:45 AM -- 9:00 AM**



5-Min Count Period Beginning At	Phelan Ave (Northbound)				Phelan Ave (Southbound)				CCSF Lot North Access (Eastbound)				CCSF Lot North Access (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	12	0	0	0	10	1	0	0	0	1	0	0	0	0	0	24	
7:05 AM	2	14	0	0	0	11	1	0	2	0	2	0	0	0	0	0	32	
7:10 AM	2	25	0	0	0	17	2	0	0	0	1	0	0	0	0	0	47	
7:15 AM	1	18	0	0	0	15	0	0	2	0	4	0	0	0	0	0	40	
7:20 AM	1	22	0	0	0	14	1	0	6	0	5	0	0	0	0	0	49	
7:25 AM	2	25	0	0	0	10	1	0	11	0	13	0	0	0	0	0	62	
7:30 AM	4	35	0	0	0	19	5	0	11	0	10	0	0	0	0	0	84	
7:35 AM	0	41	0	0	0	19	4	0	8	0	17	0	0	0	0	0	89	
7:40 AM	1	40	0	0	0	18	6	0	17	0	13	0	0	0	0	0	95	
7:45 AM	3	32	0	0	0	18	9	0	5	0	3	0	0	0	0	0	70	
7:50 AM	1	24	0	0	0	21	8	0	3	0	3	0	0	0	0	0	60	
7:55 AM	1	22	0	0	0	19	16	0	1	0	1	0	0	0	0	0	60	712
8:00 AM	3	21	0	0	0	22	12	0	3	0	3	0	0	0	0	0	64	752
8:05 AM	2	24	0	0	0	27	13	0	3	0	3	0	0	0	0	0	72	792
8:10 AM	1	20	0	0	0	27	9	0	0	0	3	0	0	0	0	0	60	805
8:15 AM	4	26	0	0	0	25	11	0	4	0	7	0	0	0	0	0	77	842
8:20 AM	3	30	0	0	0	26	9	0	1	0	6	0	0	0	0	0	75	868
8:25 AM	3	25	0	0	0	19	18	0	1	0	3	0	0	0	0	0	69	875
8:30 AM	5	21	0	0	0	17	16	0	3	0	4	0	0	0	0	0	66	857
8:35 AM	4	27	0	0	0	21	21	0	3	0	7	0	0	0	0	0	83	851
8:40 AM	3	25	0	0	0	15	21	0	7	0	5	0	0	0	0	0	76	832
8:45 AM	11	18	0	0	0	25	32	0	11	0	7	0	0	0	0	0	104	866
8:50 AM	10	24	0	0	0	19	28	0	7	0	5	0	0	0	0	0	93	899
8:55 AM	5	29	0	0	0	17	45	0	2	0	7	0	0	0	0	0	105	944

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	104	284	0	0	0	244	420	0	80	0	76	0	0	0	0	0	1208
Heavy Trucks	0	12	0	0	0	8	0	0	0	0	0	0	0	0	0	0	20
Pedestrians	192				132				172				84				580
Bicycles	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	6
Railroad																	
Stopped Buses																	

*Comments:*

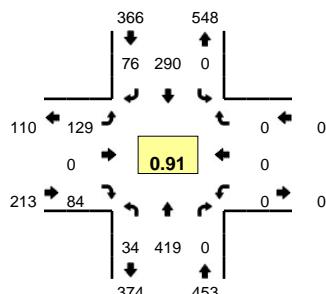
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

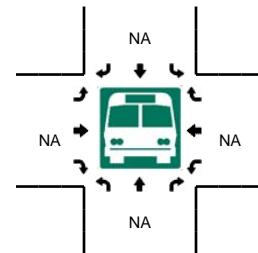
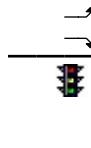
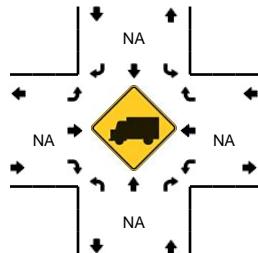
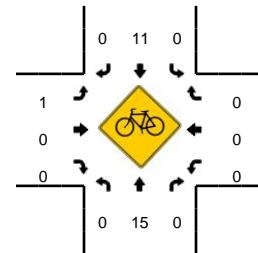
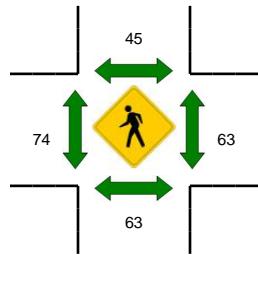
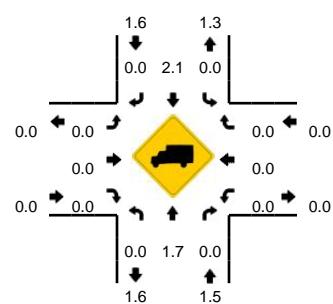
**LOCATION:** Phelan Ave -- CCSF Lot North Access  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14612208

**DATE:** Wed, Jan 31 2018



**Peak-Hour: 5:00 PM -- 6:00 PM**  
**Peak 15-Min: 5:45 PM -- 6:00 PM**



5-Min Count Period Beginning At	Phelan Ave (Northbound)				Phelan Ave (Southbound)				CCSF Lot North Access (Eastbound)				CCSF Lot North Access (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	21	0	0	0	16	0	0	6	0	9	0	0	0	0	0	52	
4:05 PM	2	34	0	0	0	18	0	0	11	0	8	0	0	0	0	0	73	
4:10 PM	1	25	0	0	0	20	1	0	13	0	7	0	0	0	0	0	67	
4:15 PM	0	25	0	0	0	13	1	0	9	0	3	0	0	0	0	0	51	
4:20 PM	4	37	0	0	0	28	1	0	10	0	1	0	0	0	0	0	81	
4:25 PM	3	24	0	0	0	11	2	0	10	0	5	0	0	0	0	0	55	
4:30 PM	3	42	0	0	0	18	3	0	2	0	5	0	0	0	0	0	73	
4:35 PM	1	26	0	0	0	26	2	0	9	0	7	0	0	0	0	0	71	
4:40 PM	0	34	0	0	0	23	1	0	10	0	11	0	0	0	0	0	79	
4:45 PM	1	41	0	0	0	13	6	0	6	0	3	0	0	0	0	0	70	
4:50 PM	4	31	0	0	0	27	8	0	5	0	4	0	0	0	0	0	79	
4:55 PM	1	31	0	0	0	27	5	0	5	0	3	0	0	0	0	0	72	823
5:00 PM	3	41	0	0	0	24	5	0	8	0	5	0	0	0	0	0	86	857
5:05 PM	1	31	0	0	0	22	3	0	16	0	7	0	0	0	0	0	80	864
5:10 PM	5	34	0	0	0	21	4	0	13	0	3	0	0	0	0	0	80	877
5:15 PM	1	22	0	0	0	30	3	0	13	0	7	0	0	0	0	0	76	902
5:20 PM	4	33	0	0	0	27	1	0	7	0	7	0	0	0	0	0	79	900
5:25 PM	2	27	0	0	0	23	5	0	11	0	16	0	0	0	0	0	84	929
5:30 PM	0	44	0	0	0	22	5	0	11	0	4	0	0	0	0	0	86	942
5:35 PM	1	32	0	0	0	23	8	0	7	0	5	0	0	0	0	0	76	947
5:40 PM	4	43	0	0	0	28	9	0	10	0	8	0	0	0	0	0	102	970
5:45 PM	2	32	0	0	0	15	8	0	15	0	10	0	0	0	0	0	82	982
5:50 PM	6	38	0	0	0	28	9	0	10	0	7	0	0	0	0	0	98	1001
5:55 PM	5	42	0	0	0	27	16	0	8	0	5	0	0	0	0	0	103	1032

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	52	448	0	0	0	280	132	0	132	0	88	0	0	0	0	0	1132
Heavy Trucks	0	4	0	0	0	8	0	0	0	0	0	0	0	0	0	0	12
Pedestrians	120	0	0	0	52	0	0	0	76	0	0	0	52	0	0	0	300
Bicycles	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	6
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Comments:

Report generated on 2/13/2018 3:04 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

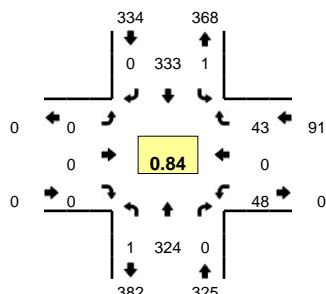
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

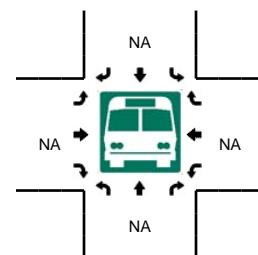
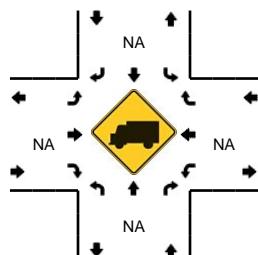
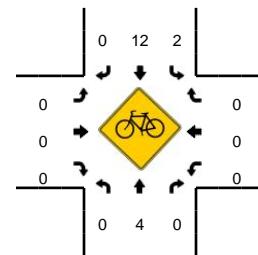
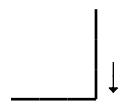
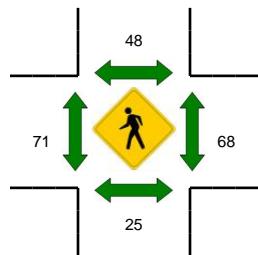
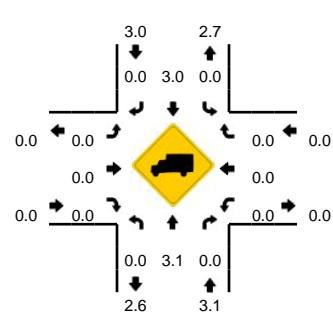
**LOCATION:** Phelan Ave -- Cloud Circle (North)  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14612209

**DATE:** Wed, Jan 31 2018



**Peak-Hour: 7:30 AM -- 8:30 AM**  
**Peak 15-Min: 7:30 AM -- 7:45 AM**



5-Min Count Period Beginning At	Phelan Ave (Northbound)				Phelan Ave (Southbound)				Cloud Circle (North) (Eastbound)				Cloud Circle (North) (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	9	0	0	0	14	0	0	0	0	0	0	2	0	1	0	26	
7:05 AM	0	15	0	0	0	8	0	0	0	0	0	0	3	0	1	0	27	
7:10 AM	0	22	0	0	0	17	0	0	0	0	0	0	0	0	0	0	39	
7:15 AM	0	23	0	0	0	18	0	0	0	0	0	0	0	0	0	0	41	
7:20 AM	0	24	0	0	0	25	0	0	0	0	0	0	2	0	0	0	51	
7:25 AM	0	25	0	0	0	17	0	0	0	0	0	0	3	0	2	0	47	
7:30 AM	0	37	0	0	0	29	0	0	0	0	0	0	2	0	2	0	70	
7:35 AM	0	36	0	0	0	37	0	0	0	0	0	0	8	0	0	0	81	
7:40 AM	0	37	0	0	0	34	0	0	0	0	0	0	1	0	1	0	73	
7:45 AM	0	37	0	1	0	14	0	0	0	0	0	0	3	0	3	0	58	
7:50 AM	0	23	0	0	0	25	0	0	0	0	0	0	4	0	4	0	56	
7:55 AM	0	18	0	0	0	27	0	0	0	0	0	0	4	0	5	0	54	623
8:00 AM	0	19	0	0	0	26	0	0	0	0	0	0	5	0	6	0	56	653
8:05 AM	0	21	0	0	0	22	0	0	0	0	0	0	9	0	4	0	682	
8:10 AM	0	18	0	0	0	30	0	0	0	0	0	0	3	0	5	0	56	699
8:15 AM	0	22	0	0	0	36	0	0	0	0	0	0	2	0	5	0	65	723
8:20 AM	0	29	0	0	0	28	0	0	0	0	0	0	4	0	5	0	66	738
8:25 AM	0	27	0	0	0	25	0	1	0	0	0	0	3	0	3	0	59	750
8:30 AM	0	21	0	1	0	21	0	0	0	0	0	0	4	0	4	0	51	731
8:35 AM	0	26	0	0	0	27	0	0	0	0	0	0	3	0	3	0	59	709
8:40 AM	0	30	0	0	0	22	0	0	0	0	0	0	7	0	3	0	62	698
8:45 AM	0	21	0	0	0	28	0	1	0	0	0	0	5	0	5	0	60	700
8:50 AM	0	22	0	0	0	25	0	0	0	0	0	0	6	0	7	0	60	704
8:55 AM	0	22	0	0	0	25	0	0	0	0	0	0	4	0	11	0	62	712
<b>Peak 15-Min Flowrates</b>	Northbound				Southbound				Eastbound				Westbound				<b>Total</b>	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	440	0	0	0	400	0	0	0	0	0	0	44	0	12	0	896	
Heavy Trucks	0	12	0		0	8	0	0	0	0	0	0	0	0	0	0	20	
Pedestrians	4				4				72				40				120	
Bicycles	0	0	0		1	0	0		0	0	0	0	0	0	0	0	1	
Railroad																		
Stopped Buses																		

*Comments:*

Report generated on 2/13/2018 3:04 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

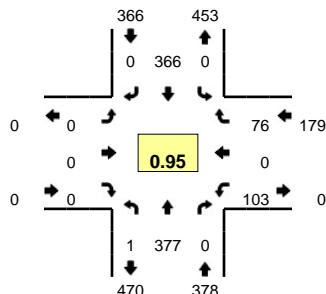
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

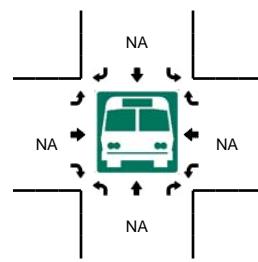
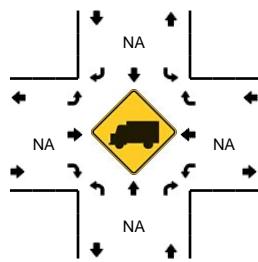
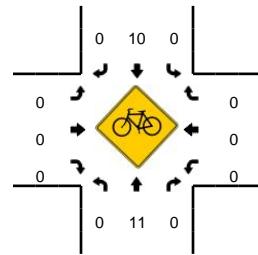
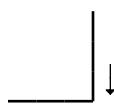
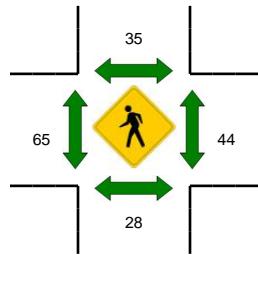
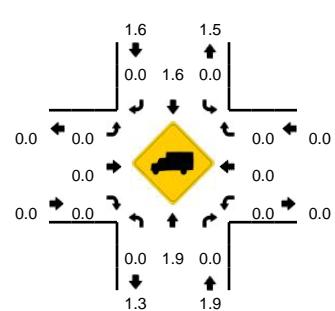
**LOCATION:** Phelan Ave -- Cloud Circle (North)  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14612210

**DATE:** Wed, Jan 31 2018



**Peak-Hour: 5:00 PM -- 6:00 PM**  
**Peak 15-Min: 5:45 PM -- 6:00 PM**



5-Min Count Period Beginning At	Phelan Ave (Northbound)				Phelan Ave (Southbound)				Cloud Circle (North) (Eastbound)				Cloud Circle (North) (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	16	0	0	0	31	0	0	0	0	0	0	6	0	4	0	57	
4:05 PM	0	24	0	0	0	28	0	0	0	0	0	0	12	0	10	0	74	
4:10 PM	0	26	0	1	0	24	0	0	0	0	0	0	5	0	5	0	61	
4:15 PM	0	18	0	0	0	20	0	1	0	0	0	0	3	0	5	0	47	
4:20 PM	0	32	0	0	0	22	0	0	0	0	0	0	5	0	3	0	62	
4:25 PM	0	22	0	0	0	24	0	0	0	0	0	0	6	0	8	0	60	
4:30 PM	0	35	0	0	0	19	0	0	0	0	0	0	7	0	8	0	69	
4:35 PM	0	29	0	0	0	25	0	0	0	0	0	0	10	0	4	0	68	
4:40 PM	0	28	0	0	0	35	0	0	0	0	0	0	14	0	3	0	80	
4:45 PM	0	35	0	0	0	23	0	0	0	0	0	0	5	0	6	0	69	
4:50 PM	0	30	0	1	0	20	0	0	0	0	0	0	5	0	0	0	56	
4:55 PM	0	27	0	0	0	32	0	0	0	0	0	0	5	0	7	0	71	774
5:00 PM	0	37	0	0	0	24	0	0	0	0	0	0	13	0	8	0	82	799
5:05 PM	0	24	0	0	0	33	0	0	0	0	0	0	11	0	2	0	70	795
5:10 PM	0	22	0	0	0	18	0	0	0	0	0	0	18	0	11	0	69	803
5:15 PM	0	30	0	1	0	39	0	0	0	0	0	0	2	0	2	0	74	830
5:20 PM	0	34	0	0	0	33	0	0	0	0	0	0	13	0	7	0	87	855
5:25 PM	0	23	0	0	0	35	0	0	0	0	0	0	7	0	4	0	69	864
5:30 PM	0	36	0	0	0	30	0	0	0	0	0	0	6	0	6	0	78	873
5:35 PM	0	29	0	0	0	29	0	0	0	0	0	0	8	0	8	0	74	879
5:40 PM	0	38	0	0	0	29	0	0	0	0	0	0	6	0	5	0	78	877
5:45 PM	0	31	0	0	0	32	0	0	0	0	0	0	6	0	6	0	75	883
5:50 PM	0	38	0	0	0	32	0	0	0	0	0	0	7	0	4	0	81	908
5:55 PM	0	35	0	0	0	32	0	0	0	0	0	0	6	0	13	0	86	923

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	416	0	0	0	384	0	0	0	0	0	0	76	0	92	0	968
Heavy Trucks	0	4	0	0	0	12	0	0	0	0	0	0	0	0	0	0	16
Pedestrians	36				32				72				36				176
Bicycles	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4
Railroad																	
Stopped Buses																	

*Comments:*

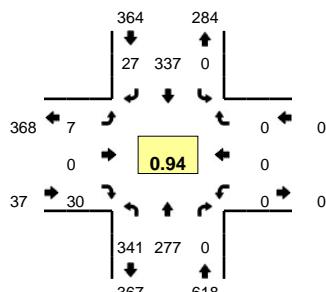
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

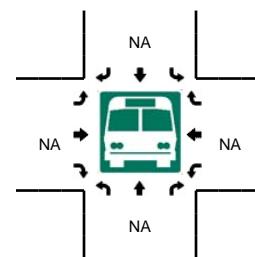
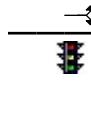
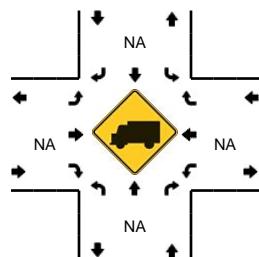
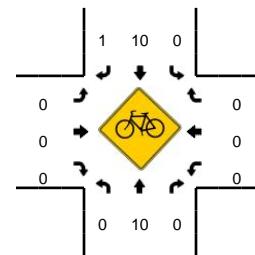
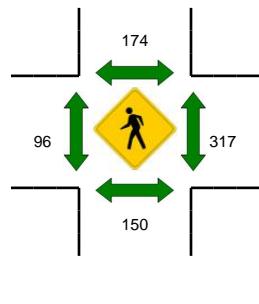
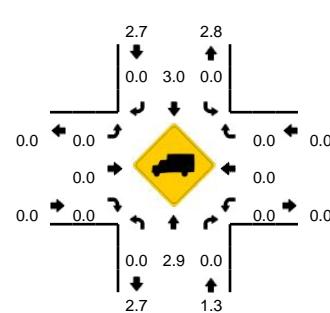
**LOCATION:** Phelan Ave -- CCSF Lot Central  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14612211

**DATE:** Wed, Jan 31 2018



**Peak-Hour: 8:00 AM -- 9:00 AM**  
**Peak 15-Min: 8:40 AM -- 8:55 AM**



5-Min Count Period Beginning At	Phelan Ave (Northbound)				Phelan Ave (Southbound)				CCSF Lot Central (Eastbound)				CCSF Lot Central (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	11	10	0	0	0	19	1	0	0	0	2	0	0	0	0	0	0	43
7:05 AM	3	15	0	0	0	10	2	0	0	0	0	0	0	0	0	0	0	30
7:10 AM	6	24	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	46
7:15 AM	7	18	0	0	0	19	0	0	2	0	1	0	0	0	0	0	0	47
7:20 AM	5	28	0	0	0	22	0	0	0	0	0	0	0	0	0	0	0	55
7:25 AM	8	23	0	0	0	23	0	0	1	0	1	0	0	0	0	0	0	56
7:30 AM	8	38	0	0	0	27	0	0	0	0	3	0	0	0	0	0	0	76
7:35 AM	8	34	0	0	0	47	0	0	0	0	3	0	0	0	0	0	0	92
7:40 AM	18	41	0	0	0	30	1	0	0	0	4	0	0	0	0	0	0	94
7:45 AM	18	36	0	0	0	25	0	0	1	0	1	0	0	0	0	0	0	81
7:50 AM	30	22	0	0	0	22	0	0	1	0	0	0	0	0	0	0	0	75
7:55 AM	20	16	0	0	0	29	2	0	1	0	0	0	0	0	0	0	0	68
																	763	
8:00 AM	37	16	0	0	0	31	1	0	0	0	3	0	0	0	0	0	0	88
8:05 AM	21	25	0	0	0	34	1	0	0	0	5	0	0	0	0	0	0	86
8:10 AM	19	16	0	0	0	26	2	0	1	0	2	0	0	0	0	0	0	66
8:15 AM	21	21	0	0	0	36	5	0	0	0	3	0	0	0	0	0	0	86
8:20 AM	23	27	0	0	0	28	2	0	0	0	1	0	0	0	0	0	0	923
8:25 AM	30	29	0	0	0	30	2	0	0	0	1	0	0	0	0	0	0	949
8:30 AM	27	25	0	0	0	20	5	0	0	0	2	0	0	0	0	0	0	79
8:35 AM	29	23	0	0	0	25	4	0	1	0	1	0	0	0	0	0	0	83
																	979	
8:40 AM	30	28	0	0	0	28	2	0	0	0	3	0	0	0	0	0	0	91
8:45 AM	33	22	0	0	0	27	1	0	1	0	2	0	0	0	0	0	0	86
8:50 AM	41	23	0	0	0	22	1	0	2	0	4	0	0	0	0	0	0	93
8:55 AM	30	22	0	0	0	30	1	0	2	0	3	0	0	0	0	0	0	88
																	1019	

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	416	292	0	0	0	308	16	0	12	0	36	0	0	0	0	0	1080
Heavy Trucks	0	16	0	0	0	8	0	0	0	0	0	0	0	0	0	0	24
Pedestrians	188				240				100				420				948
Bicycles	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5
Railroad																	
Stopped Buses																	

Comments:

Report generated on 2/13/2018 3:04 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

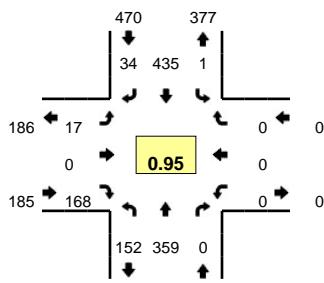
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

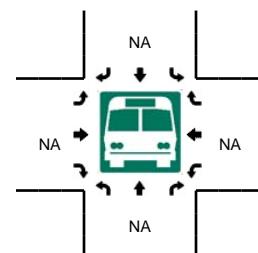
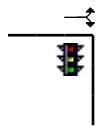
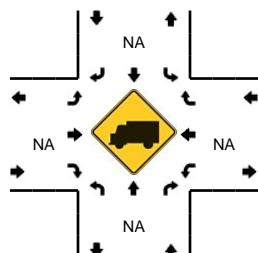
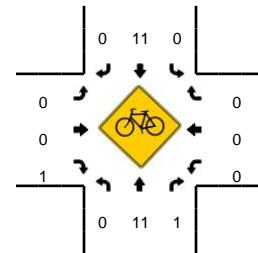
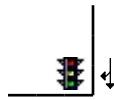
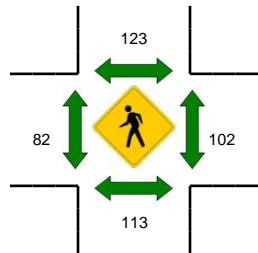
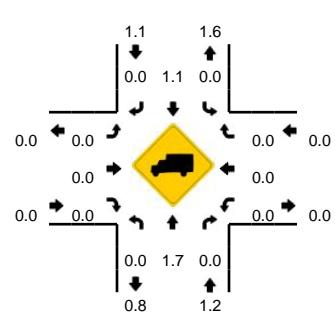
**LOCATION:** Phelan Ave -- CCSF Lot Central  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14612212

**DATE:** Wed, Jan 31 2018



**Peak-Hour: 5:00 PM -- 6:00 PM**  
**Peak 15-Min: 5:00 PM -- 5:15 PM**



5-Min Count Period Beginning At	Phelan Ave (Northbound)				Phelan Ave (Southbound)				CCSF Lot Central (Eastbound)				CCSF Lot Central (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	6	13	0	0	0	33	1	0	2	0	8	0	0	0	0	0	63	
4:05 PM	5	28	0	0	0	36	2	0	0	0	13	0	0	0	0	0	84	
4:10 PM	9	18	0	0	0	31	0	0	2	0	10	0	0	0	0	0	70	
4:15 PM	7	17	0	0	0	25	1	0	2	0	10	0	0	0	0	0	62	
4:20 PM	6	31	0	0	0	24	0	0	2	0	8	0	0	0	0	0	71	
4:25 PM	5	22	0	0	0	30	1	0	0	0	7	0	0	0	0	0	65	
4:30 PM	6	35	0	0	0	26	0	0	1	0	9	0	0	0	0	0	77	
4:35 PM	5	25	0	0	0	34	1	0	0	0	8	0	0	0	0	0	73	
4:40 PM	12	26	0	0	0	44	0	0	1	0	8	0	0	0	0	0	91	
4:45 PM	9	37	0	0	0	31	3	0	1	0	14	0	0	0	0	0	95	
4:50 PM	6	35	0	0	0	17	1	0	1	0	8	0	0	0	0	0	68	
4:55 PM	8	22	0	0	0	42	3	0	3	0	8	0	0	0	0	0	86	905
5:00 PM	13	33	0	0	0	33	1	0	0	0	18	0	0	0	0	0	98	940
5:05 PM	7	28	0	0	0	46	5	0	1	0	22	0	0	0	0	0	109	965
5:10 PM	11	22	0	0	0	33	5	0	2	0	28	0	0	0	0	0	101	996
5:15 PM	6	25	0	0	0	40	1	0	0	0	10	0	0	0	0	0	82	1016
5:20 PM	10	34	0	0	0	44	1	0	2	0	15	0	0	0	0	0	106	1051
5:25 PM	16	20	0	0	0	34	1	0	1	0	15	0	0	0	0	0	87	1073
5:30 PM	9	39	0	0	0	43	1	0	0	0	12	0	0	0	0	0	104	1100
5:35 PM	9	25	0	0	0	31	4	0	1	0	10	0	0	0	0	0	80	1107
5:40 PM	17	36	0	0	0	29	4	0	3	0	12	0	0	0	0	0	101	1117
5:45 PM	15	31	0	0	0	41	2	0	0	0	7	0	0	0	0	0	96	1118
5:50 PM	16	37	0	0	0	36	2	1	2	0	10	0	0	0	0	0	104	1154
5:55 PM	23	29	0	0	0	25	7	0	5	0	9	0	0	0	0	0	98	1166

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	124	332	0	0	0	448	44	0	12	0	272	0	0	0	0	0	1232
Heavy Trucks	0	8	0	0	0	4	0	0	0	0	0	0	0	0	0	0	12
Pedestrians	184	0	0	0	192	0	0	0	92	0	0	0	148	0	0	0	616
Bicycles	0	3	0	0	0	2	0	0	0	0	1	0	0	0	0	0	6
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Comments:

Report generated on 2/13/2018 3:04 PM

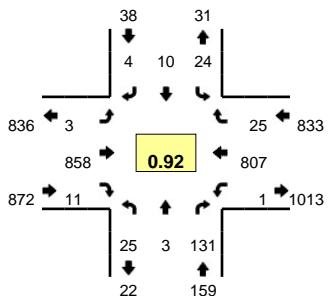
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

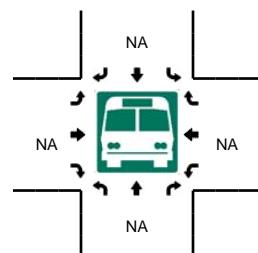
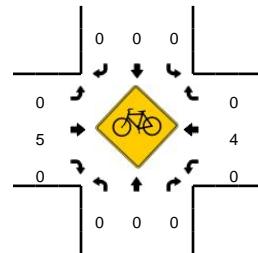
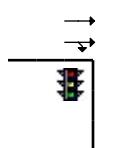
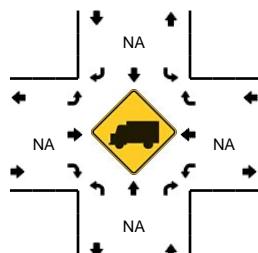
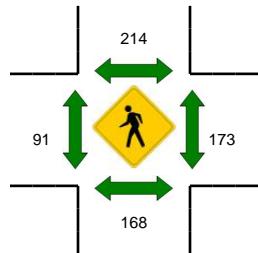
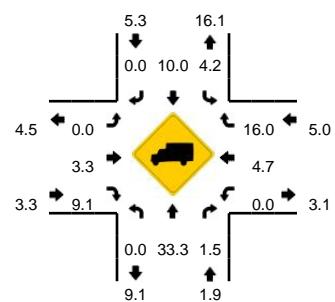
Method for determining peak hour: Total Entering Volume

**LOCATION:** Lee Ave -- Ocean Ave  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14612223  
**DATE:** Wed, Jan 31 2018



**Peak-Hour: 7:30 AM -- 8:30 AM**  
**Peak 15-Min: 7:30 AM -- 7:45 AM**



5-Min Count Period Beginning At	Lee Ave (Northbound)				Lee Ave (Southbound)				Ocean Ave (Eastbound)				Ocean Ave (Westbound)				Total	Hourly Totals	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
7:00 AM	0	0	9	0	1	0	0	0	0	48	0	0	0	31	3	0	92		
7:05 AM	2	0	2	0	0	0	0	0	0	48	2	0	0	61	0	0	115		
7:10 AM	1	0	15	0	1	1	0	0	0	59	0	0	0	61	3	0	141		
7:15 AM	1	0	10	0	1	0	2	0	0	57	0	0	0	69	2	0	142		
7:20 AM	2	0	12	0	2	2	2	0	0	44	0	0	0	53	4	0	121		
7:25 AM	0	0	8	0	1	0	0	0	0	68	1	0	1	61	0	0	140		
7:30 AM	2	1	10	0	0	1	1	0	0	73	0	0	0	79	1	0	168		
7:35 AM	2	0	15	0	1	2	0	0	0	95	0	0	0	73	3	0	191		
7:40 AM	3	0	8	0	2	1	0	0	0	73	0	0	0	71	2	0	160		
7:45 AM	0	0	14	0	2	0	0	0	0	76	1	0	0	52	2	0	147		
7:50 AM	1	1	8	0	2	0	0	0	0	76	1	0	0	72	1	0	162		
7:55 AM	4	0	10	0	2	0	0	0	0	41	3	0	0	71	2	0	133	1712	
8:00 AM	3	0	8	0	1	0	0	0	1	63	1	0	0	57	6	0	140	1760	
8:05 AM	1	1	9	0	0	1	0	0	1	59	1	0	0	75	0	0	148	1793	
8:10 AM	3	0	7	0	3	0	1	0	0	74	1	0	0	65	3	0	157	1809	
8:15 AM	2	0	10	0	2	1	0	0	0	71	2	0	0	84	2	0	174	1841	
8:20 AM	1	0	14	0	5	1	1	0	0	71	0	0	0	51	3	0	147	1867	
8:25 AM	3	0	18	0	4	3	1	0	1	86	1	0	1	57	0	0	175	1902	
8:30 AM	1	0	6	0	2	1	4	0	1	75	3	0	0	62	1	0	156	1890	
8:35 AM	1	1	8	0	6	2	5	0	0	89	2	0	0	58	2	0	174	1873	
8:40 AM	4	0	10	0	2	0	2	0	0	78	1	0	0	49	1	0	147	1860	
8:45 AM	0	0	16	0	3	0	0	0	1	62	1	0	0	52	2	0	137	1850	
8:50 AM	1	0	5	0	2	0	3	0	1	65	2	0	0	48	1	0	128	1816	
8:55 AM	5	0	9	0	4	1	4	0	0	62	0	0	0	26	0	0	111	1794	
<b>Peak 15-Min Flowrates</b>		<b>Northbound</b>				<b>Southbound</b>				<b>Eastbound</b>				<b>Westbound</b>					
		Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Total	
All Vehicles		28	4	132	0	12	16	4	0	964	0	0	0	892	24	0	2076		
Heavy Trucks		0	0	0	0	0	4	0	0	44	0	0	0	40	4	0	92		
Pedestrians		108				176				100				132			516		
Bicycles		0	0	0	0	0	0	0	0	1	0	0	0	1	0		2		
Railroad																			
Stopped Buses																			

*Comments:*

Report generated on 2/13/2018 3:04 PM

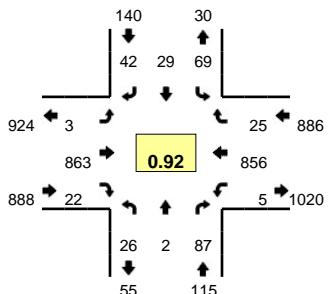
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

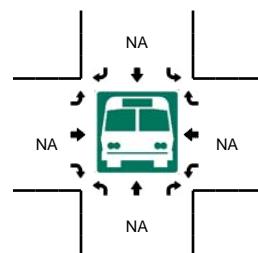
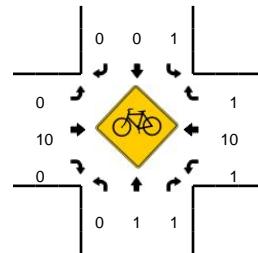
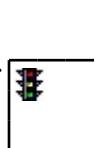
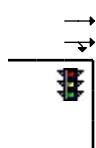
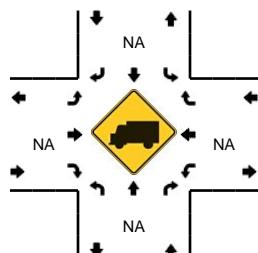
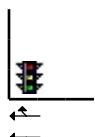
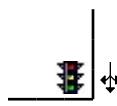
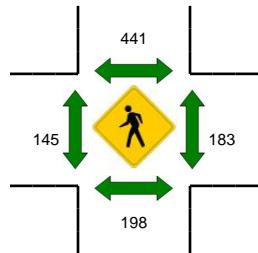
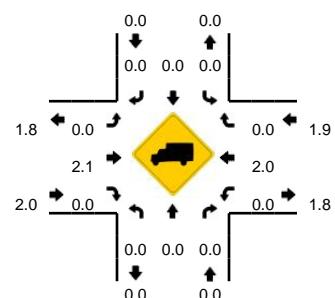
Method for determining peak hour: Total Entering Volume

**LOCATION:** Lee Ave -- Ocean Ave  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14612224  
**DATE:** Wed, Jan 31 2018



**Peak-Hour: 4:55 PM -- 5:55 PM**  
**Peak 15-Min: 5:25 PM -- 5:40 PM**



5-Min Count Period Beginning At	Lee Ave (Northbound)				Lee Ave (Southbound)				Ocean Ave (Eastbound)				Ocean Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	1	9	0	4	3	3	0	0	56	2	0	0	61	0	0	140	
4:05 PM	0	1	8	0	11	5	3	0	0	75	1	0	0	69	2	0	175	
4:10 PM	0	0	4	0	2	3	1	0	0	65	1	0	1	82	2	0	161	
4:15 PM	1	0	4	0	6	4	2	0	0	65	4	0	0	74	6	0	166	
4:20 PM	1	0	2	0	6	4	3	0	0	60	1	0	0	63	3	0	143	
4:25 PM	1	1	8	0	2	2	4	0	0	63	3	0	0	63	0	0	147	
4:30 PM	2	0	6	0	3	3	1	0	1	59	2	0	0	62	1	1	141	
4:35 PM	2	0	8	0	8	2	3	0	0	76	1	1	0	68	3	0	172	
4:40 PM	2	0	8	0	7	2	7	0	0	58	2	0	0	79	1	0	166	
4:45 PM	3	1	10	0	8	1	3	0	0	54	1	0	0	65	2	0	148	
4:50 PM	1	0	5	0	3	4	3	0	1	78	4	0	1	70	2	0	172	
4:55 PM	2	0	9	0	3	0	3	0	0	61	1	0	0	69	0	0	148	1879
5:00 PM	1	0	5	0	5	4	3	0	1	65	1	0	1	80	2	0	168	1907
5:05 PM	2	0	11	0	5	3	5	0	0	78	0	0	0	64	3	0	171	1903
5:10 PM	2	1	4	0	5	2	3	0	0	69	5	0	1	83	2	0	177	1919
5:15 PM	1	0	11	0	7	5	4	0	0	84	1	0	0	72	1	0	186	1939
5:20 PM	0	0	3	0	6	0	6	0	1	45	3	0	0	69	5	0	138	1934
5:25 PM	1	1	10	0	6	3	2	0	1	73	4	0	0	78	3	0	182	1969
5:30 PM	3	0	4	0	7	2	4	0	0	82	4	0	0	79	3	0	188	2016
5:35 PM	3	0	6	0	12	4	2	0	0	76	2	0	0	73	1	0	179	2023
5:40 PM	5	0	9	0	7	1	5	0	0	70	1	0	1	63	3	1	166	2023
5:45 PM	4	0	7	0	3	2	0	0	0	79	0	0	0	56	1	0	152	2027
5:50 PM	2	0	8	0	3	3	5	0	0	81	0	0	1	70	1	0	174	2029
5:55 PM	1	0	7	0	2	1	2	0	0	69	1	0	0	63	1	0	147	2028
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound					
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Total	
All Vehicles	28	4	80	0	100	36	32	0	4	924	40	0	0	920	28	0	2196	
Heavy Trucks	0	0	0		0	0	0		0	28	0		0	16	0		44	
Pedestrians	180				440				168				184				972	
Bicycles	0	0	0		0	0	0		0	3	0		0	3	1		7	
Railroad																		
Stopped Buses																		

*Comments:*

Report generated on 2/13/2018 3:04 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

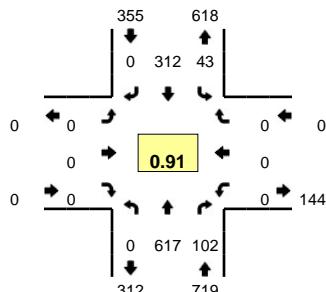
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

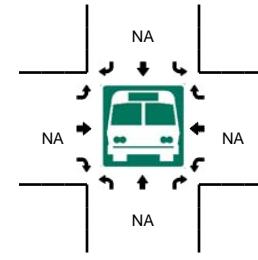
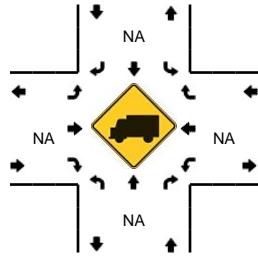
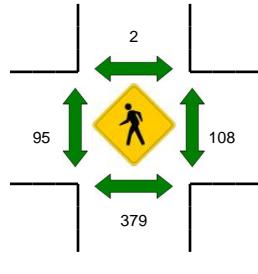
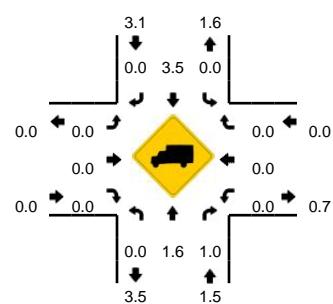
**LOCATION:** Phelan Ave -- Cloud Circle (South)  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14612213

**DATE:** Wed, Jan 31 2018



**Peak-Hour: 8:00 AM -- 9:00 AM**  
**Peak 15-Min: 8:45 AM -- 9:00 AM**



5-Min Count Period Beginning At	Phelan Ave (Northbound)				Phelan Ave (Southbound)				Cloud Circle (South) (Eastbound)				Cloud Circle (South) (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	18	2	0	2	19	0	0	0	0	0	0	0	0	0	0	41	
7:05 AM	0	20	3	0	1	8	0	0	0	0	0	0	0	0	0	0	32	
7:10 AM	0	32	1	0	0	17	0	0	0	0	0	0	0	0	0	0	50	
7:15 AM	0	25	6	0	0	15	0	0	0	0	0	0	0	0	0	0	46	
7:20 AM	0	29	8	0	2	20	0	0	0	0	0	0	0	0	0	0	59	
7:25 AM	0	33	2	0	3	16	0	0	0	0	0	0	0	0	0	0	54	
7:30 AM	0	50	7	0	3	32	0	0	0	0	0	0	0	0	0	0	92	
7:35 AM	0	40	6	0	4	40	0	1	0	0	0	0	0	0	0	0	91	
7:40 AM	0	63	5	0	3	34	0	0	0	0	0	0	0	0	0	0	105	
7:45 AM	0	50	5	0	5	25	0	0	0	0	0	0	0	0	0	0	85	
7:50 AM	0	47	6	0	1	22	0	1	0	0	0	0	0	0	0	0	77	
7:55 AM	0	44	12	0	5	27	0	0	0	0	0	0	0	0	0	0	88	820
8:00 AM	0	45	12	0	2	23	0	0	0	0	0	0	0	0	0	0	82	861
8:05 AM	0	42	8	0	1	36	0	0	0	0	0	0	0	0	0	0	87	916
8:10 AM	0	44	3	0	5	29	0	0	0	0	0	0	0	0	0	0	81	947
8:15 AM	0	44	12	0	6	29	0	0	0	0	0	0	0	0	0	0	91	992
8:20 AM	0	41	7	0	5	19	0	0	0	0	0	0	0	0	0	0	72	1005
8:25 AM	0	63	8	0	4	26	0	0	0	0	0	0	0	0	0	0	101	1052
8:30 AM	0	48	5	0	3	25	0	0	0	0	0	0	0	0	0	0	81	1041
8:35 AM	0	54	9	0	3	24	0	0	0	0	0	0	0	0	0	0	90	1040
8:40 AM	0	58	7	0	2	26	0	0	0	0	0	0	0	0	0	0	93	1028
8:45 AM	0	64	7	0	5	24	0	1	0	0	0	0	0	0	0	0	101	1044
8:50 AM	0	58	12	0	4	26	0	0	0	0	0	0	0	0	0	0	100	1067
8:55 AM	0	56	12	0	2	25	0	0	0	0	0	0	0	0	0	0	95	1074

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	712	124	0	44	300	0	4	0	0	0	0	0	0	0	0	1184
Heavy Trucks	0	8	4	0	0	8	0	0	0	0	0	0	0	0	0	0	20
Pedestrians	592				4				164				220				980
Bicycles	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	6
Railroad																	
Stopped Buses																	

*Comments:*

Report generated on 2/13/2018 3:04 PM

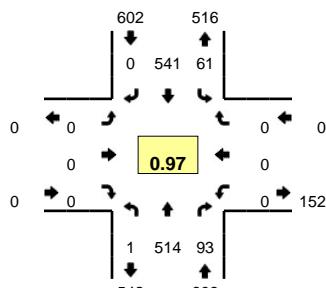
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

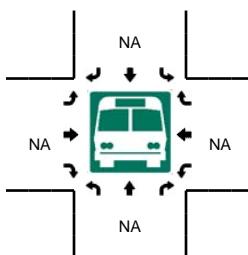
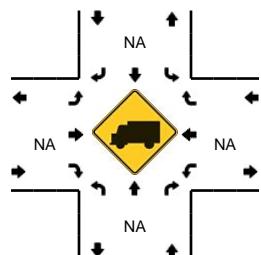
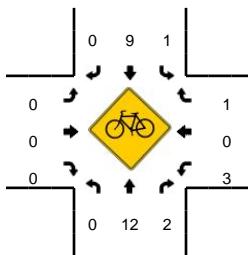
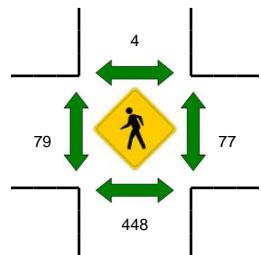
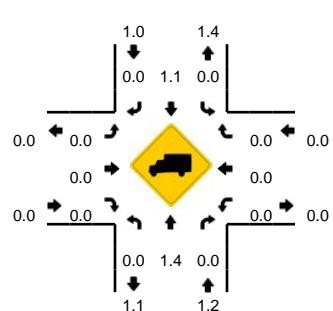
Method for determining peak hour: Total Entering Volume

**LOCATION:** Phelan Ave -- Cloud Circle (South)  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14612214  
**DATE:** Wed, Jan 31 2018



**Peak-Hour: 5:00 PM -- 6:00 PM**  
**Peak 15-Min: 5:00 PM -- 5:15 PM**



5-Min Count Period	Phelan Ave (Northbound)				Phelan Ave (Southbound)				Cloud Circle (South) (Eastbound)				Cloud Circle (South) (Westbound)				Total	Hourly Totals	
	Beginning At	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	21	12	1		7	33	0	0	0	0	0	0	0	0	0	0	74	
4:05 PM	0	37	8	0		4	41	0	0	0	0	0	0	0	0	0	0	90	
4:10 PM	0	26	5	0		2	44	0	0	0	0	0	0	0	0	0	0	77	
4:15 PM	0	27	6	0		5	34	0	0	0	0	0	0	0	0	0	0	72	
4:20 PM	0	35	6	0		1	30	0	1	0	0	0	0	0	0	0	0	73	
4:25 PM	0	24	10	0		6	29	0	0	0	0	0	0	0	0	0	0	69	
4:30 PM	0	42	3	0		5	35	0	0	0	0	0	0	0	0	0	0	85	
4:35 PM	0	38	7	0		2	38	0	0	0	0	0	0	0	0	0	0	85	
4:40 PM	0	34	8	0		1	45	0	0	0	0	0	0	0	0	0	0	88	
4:45 PM	0	45	8	0		2	46	0	0	0	0	0	0	0	0	0	0	101	
4:50 PM	0	36	5	0		2	23	0	1	0	0	0	0	0	0	0	0	67	
4:55 PM	0	38	7	0		7	40	0	0	0	0	0	0	0	0	0	0	92	973
5:00 PM	0	45	6	0		8	41	0	0	0	0	0	0	0	0	0	0	100	999
5:05 PM	0	33	7	0		4	54	0	0	0	0	0	0	0	0	0	0	98	1007
5:10 PM	0	38	9	0		5	62	0	0	0	0	0	0	0	0	0	0	114	1044
5:15 PM	0	35	6	0		3	50	0	0	0	0	0	0	0	0	0	0	94	1066
5:20 PM	0	38	9	0		4	47	0	0	0	0	0	0	0	0	0	0	98	1091
5:25 PM	0	39	5	1		3	55	0	0	0	0	0	0	0	0	0	0	103	1125
5:30 PM	0	47	8	0		5	48	0	0	0	0	0	0	0	0	0	0	108	1148
5:35 PM	0	39	7	0		5	40	0	0	0	0	0	0	0	0	0	0	91	1154
5:40 PM	0	51	9	0		2	34	0	0	0	0	0	0	0	0	0	0	96	1162
5:45 PM	0	42	9	0		4	37	0	1	0	0	0	0	0	0	0	0	93	1154
5:50 PM	0	57	11	0		10	43	0	0	0	0	0	0	0	0	0	0	121	1208
5:55 PM	0	50	7	0		6	30	0	1	0	0	0	0	0	0	0	0	94	1210
Peak 15-Min	Northbound				Southbound				Eastbound				Westbound						

### *Comments:*

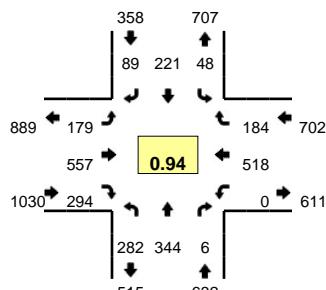
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

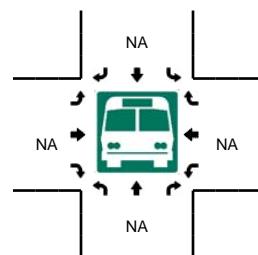
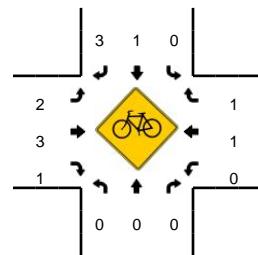
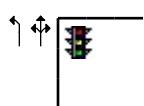
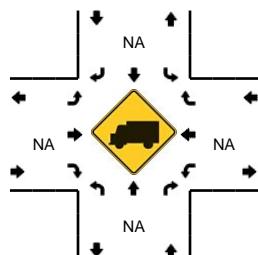
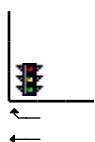
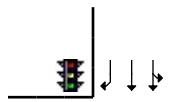
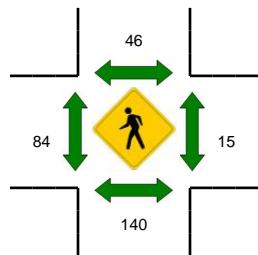
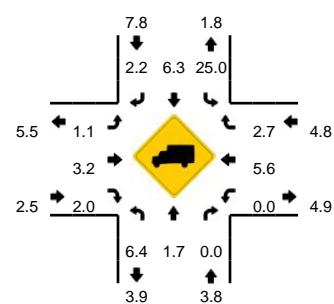
**LOCATION:** Phelan Ave/Geneva Ave -- Ocean Ave  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14612215

**DATE:** Wed, Jan 31 2018



**Peak-Hour: 7:30 AM -- 8:30 AM**  
**Peak 15-Min: 7:30 AM -- 7:45 AM**



5-Min Count Period Beginning At	Phelan Ave/Geneva Ave (Northbound)				Phelan Ave/Geneva Ave (Southbound)				Ocean Ave (Eastbound)				Ocean Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	11	7	0	0	6	12	2	0	4	43	9	0	0	20	12	0	126	
7:05 AM	15	17	0	0	2	6	2	0	3	47	15	0	0	43	5	0	155	
7:10 AM	14	18	2	0	5	8	1	0	7	48	20	0	0	49	11	0	183	
7:15 AM	14	16	0	0	2	17	4	0	4	39	11	0	0	60	13	0	180	
7:20 AM	18	22	0	0	2	14	3	0	4	48	17	0	0	34	13	0	175	
7:25 AM	24	21	2	0	1	13	2	0	9	59	14	0	0	37	8	0	190	
7:30 AM	22	33	1	0	4	23	12	0	8	60	20	0	0	47	9	0	239	
7:35 AM	18	30	0	0	5	22	9	0	10	65	20	0	0	53	15	0	247	
7:40 AM	18	31	0	0	5	19	11	0	17	47	26	0	0	48	13	0	235	
7:45 AM	20	31	1	0	2	19	5	0	18	44	26	0	0	37	15	0	218	
7:50 AM	20	27	0	0	3	14	8	0	17	36	30	0	0	50	13	0	218	
7:55 AM	32	25	2	0	1	21	5	0	13	27	15	0	0	40	28	0	209	2375
8:00 AM	28	24	2	0	1	14	10	0	11	49	20	0	0	24	29	0	212	2461
8:05 AM	28	20	0	0	5	14	9	0	16	33	20	0	0	55	20	0	220	2526
8:10 AM	25	27	0	0	7	22	9	0	18	48	24	0	0	41	8	0	229	2572
8:15 AM	24	30	0	0	6	17	3	0	19	38	27	0	0	53	12	0	229	2621
8:20 AM	24	26	0	0	3	19	3	0	14	47	36	0	0	37	6	0	215	2661
8:25 AM	23	40	0	0	6	17	5	0	18	63	30	0	0	33	16	0	251	2722
8:30 AM	29	27	1	0	3	16	6	0	19	51	26	0	0	28	14	0	220	2703
8:35 AM	27	33	1	0	7	10	4	0	26	43	24	0	0	28	17	0	220	2676
8:40 AM	22	20	2	0	6	11	10	0	16	42	27	0	0	25	23	0	204	2645
8:45 AM	31	36	0	0	3	11	5	0	20	50	25	0	0	26	18	0	225	2652
8:50 AM	22	32	0	0	6	17	4	0	21	33	24	0	0	21	18	0	198	2632
8:55 AM	16	29	1	0	7	18	3	0	21	32	17	0	0	8	19	0	171	2594
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	232	376	4	0	56	256	128	0	140	688	264	0	0	592	148	0	2884	
Heavy Trucks	24	8	0		12	16	0		8	28	0		0	28	0		124	
Pedestrians		104				20				56				12			192	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

*Comments:*

Report generated on 2/13/2018 3:04 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

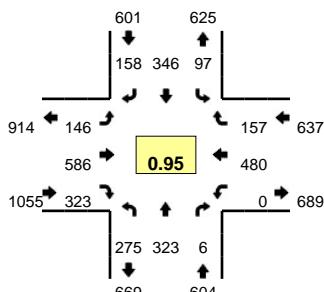
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

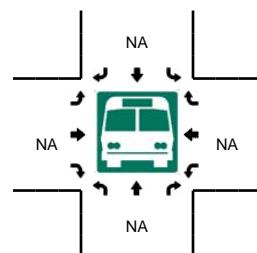
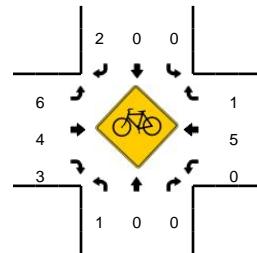
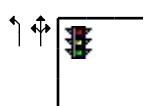
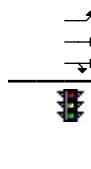
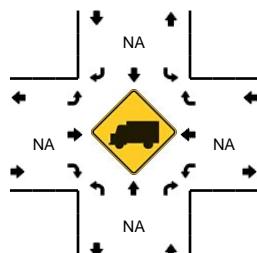
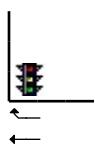
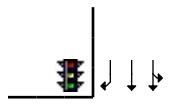
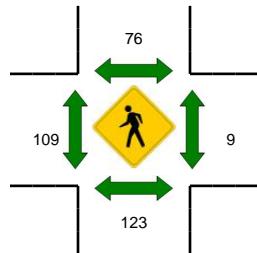
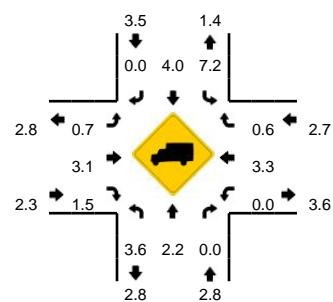
**LOCATION:** Phelan Ave/Geneva Ave -- Ocean Ave  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14612216

**DATE:** Wed, Jan 31 2018



**Peak-Hour: 5:00 PM -- 6:00 PM**  
**Peak 15-Min: 5:05 PM -- 5:20 PM**



5-Min Count Period Beginning At	Phelan Ave/Geneva Ave (Northbound)				Phelan Ave/Geneva Ave (Southbound)				Ocean Ave (Eastbound)				Ocean Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	17	18	0	0	6	18	4	0	7	55	31	0	1	51	6	0	214	
4:05 PM	15	19	2	0	4	32	10	0	11	57	40	0	0	42	12	0	244	
4:10 PM	17	13	0	0	9	32	10	0	7	46	25	0	0	62	12	0	233	
4:15 PM	16	19	1	0	7	15	14	0	5	51	25	0	0	44	9	0	206	
4:20 PM	15	25	1	0	6	20	4	0	6	42	27	0	0	43	12	0	201	
4:25 PM	18	22	1	0	9	19	8	0	9	39	30	0	0	37	6	0	198	
4:30 PM	14	19	0	0	6	25	8	0	6	41	28	0	0	44	23	0	214	
4:35 PM	27	21	0	0	10	17	11	0	10	40	24	0	0	38	10	0	208	
4:40 PM	15	22	0	0	8	26	16	0	5	50	23	0	0	49	17	0	231	
4:45 PM	22	20	4	0	6	34	14	0	15	40	29	0	0	32	18	0	234	
4:50 PM	20	31	2	0	8	11	11	0	5	59	27	0	0	52	8	0	234	
4:55 PM	21	22	2	0	2	24	6	0	10	44	16	0	0	49	14	0	210	2627
5:00 PM	19	22	1	0	6	30	14	0	7	38	27	0	0	59	22	0	245	2658
5:05 PM	18	26	0	0	6	28	18	0	13	58	35	0	0	35	7	0	244	2658
5:10 PM	28	22	0	0	20	36	17	0	6	49	27	0	0	44	20	0	269	2694
5:15 PM	25	29	0	0	6	35	11	0	11	58	25	1	0	39	12	0	252	2740
5:20 PM	19	17	1	0	9	27	15	0	3	41	19	0	0	42	25	0	218	2757
5:25 PM	24	19	1	0	18	32	19	0	13	47	31	0	0	33	12	0	249	2808
5:30 PM	24	33	0	0	8	27	14	0	21	52	28	0	0	39	7	0	253	2847
5:35 PM	28	32	1	0	6	27	19	0	13	54	24	0	0	38	7	0	249	2888
5:40 PM	19	26	0	0	4	15	8	0	14	47	31	0	0	48	12	0	224	2881
5:45 PM	21	30	0	0	7	33	8	0	12	60	27	0	0	26	7	0	231	2878
5:50 PM	22	36	1	0	6	27	7	0	17	36	32	0	0	47	19	0	250	2894
5:55 PM	28	31	1	0	1	29	8	0	15	46	17	0	0	30	7	0	213	2897

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	284	308	0	0	128	396	184	0	120	660	348	4	0	472	156	0	3060
Heavy Trucks	8	8	0	0	8	12	0	0	0	16	4	0	0	16	4	0	76
Pedestrians																	284
Bicycles																	12
Railroad																	
Stopped Buses																	

*Comments:*

Report generated on 2/13/2018 3:04 PM

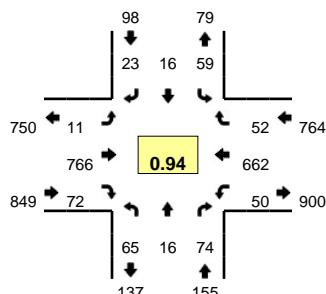
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

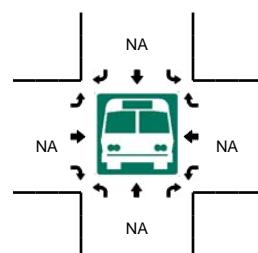
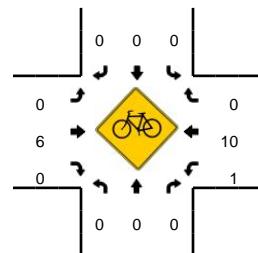
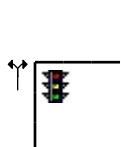
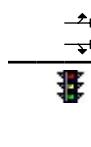
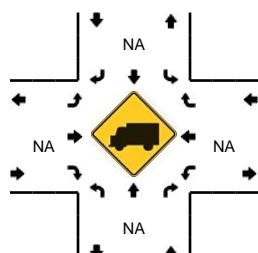
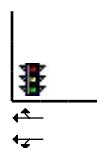
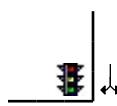
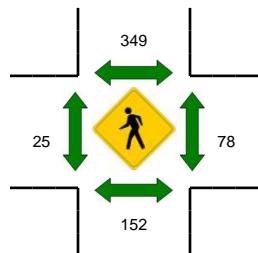
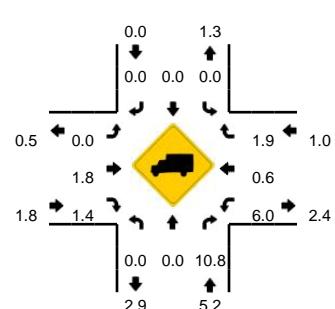
Method for determining peak hour: Total Entering Volume

**LOCATION:** Plymouth Ave -- Ocean Ave  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14612226  
**DATE:** Wed, Jan 31 2018



**Peak-Hour: 5:00 PM -- 6:00 PM**  
**Peak 15-Min: 5:00 PM -- 5:15 PM**



5-Min Count Period Beginning At	Plymouth Ave (Northbound)				Plymouth Ave (Southbound)				Ocean Ave (Eastbound)				Ocean Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	5	0	7	0	1	1	2	0	0	63	6	0	3	48	4	0	140	
4:05 PM	3	0	2	0	3	3	1	0	1	74	1	0	5	61	2	0	156	
4:10 PM	4	5	5	0	1	1	0	0	2	51	4	0	5	49	4	0	131	
4:15 PM	2	0	1	0	5	2	2	0	0	58	5	0	3	53	4	0	135	
4:20 PM	3	1	6	0	0	1	1	0	1	60	11	0	4	56	3	0	147	
4:25 PM	2	2	8	0	0	2	1	0	0	58	10	0	7	52	6	0	148	
4:30 PM	4	1	4	0	3	4	1	0	0	49	9	0	7	37	1	0	120	
4:35 PM	3	3	4	0	6	1	0	0	1	59	4	0	4	52	4	0	141	
4:40 PM	4	2	4	0	2	0	2	0	2	69	6	0	6	65	4	0	166	
4:45 PM	3	5	6	0	2	2	0	0	2	59	7	0	1	68	2	0	157	
4:50 PM	4	4	2	0	8	3	2	0	1	52	5	0	3	53	6	0	143	
4:55 PM	1	0	6	0	4	2	3	0	0	51	7	0	4	38	5	0	121	1705
5:00 PM	3	0	5	0	5	2	2	0	1	68	8	0	5	63	1	0	163	1728
5:05 PM	5	1	5	0	9	1	2	0	0	68	6	0	5	56	7	0	165	1737
5:10 PM	6	1	6	0	8	1	2	0	1	64	10	0	2	63	4	0	168	1774
5:15 PM	6	2	6	0	5	3	3	0	2	57	8	0	4	48	3	0	147	1786
5:20 PM	5	0	3	0	4	1	1	0	0	58	4	0	2	54	4	0	136	1775
5:25 PM	10	0	7	0	5	3	4	0	0	73	7	0	5	64	4	0	182	1809
5:30 PM	6	1	8	0	2	3	0	0	0	63	2	0	3	48	4	0	140	1829
5:35 PM	4	2	10	0	7	0	2	0	1	56	6	0	10	58	4	0	160	1848
5:40 PM	7	3	7	0	2	1	3	0	1	63	5	0	6	63	4	0	165	1847
5:45 PM	6	0	4	0	5	0	2	0	2	69	2	0	1	48	6	0	145	1835
5:50 PM	6	4	7	0	4	0	1	0	3	66	7	0	3	51	4	0	156	1848
5:55 PM	1	2	6	0	3	1	1	0	0	61	7	0	3	46	7	1	139	1866

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	56	8	64	0	88	16	24	0	8	800	96	0	48	728	48	0	1984
Heavy Trucks	0	0	8	0	0	0	0	0	0	8	0	0	4	8	0	0	28
Pedestrians	104				464				56				40				664
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0		1
Railroad																	
Stopped Buses																	

*Comments:*

Report generated on 2/13/2018 3:04 PM

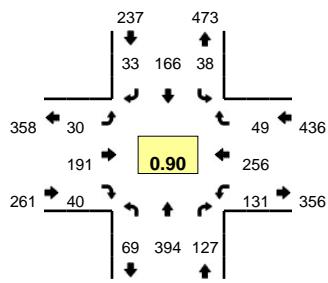
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

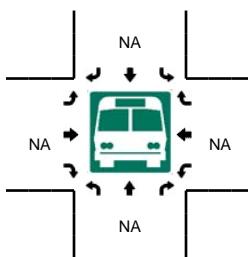
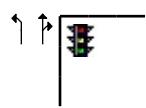
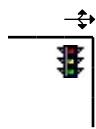
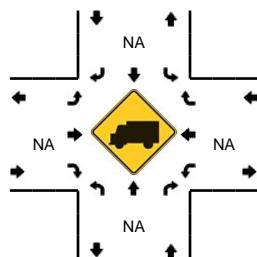
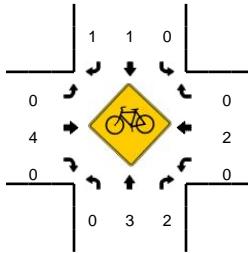
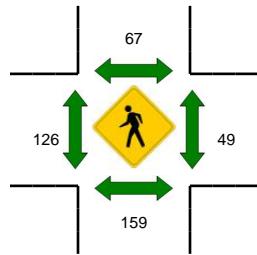
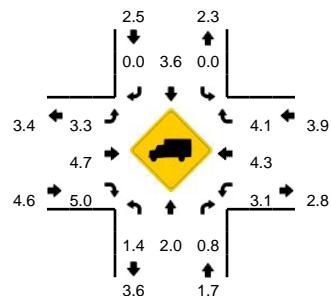
Method for determining peak hour: Total Entering Volume

**LOCATION:** San Jose Ave -- Ocean Ave  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14612217  
**DATE:** Wed, Jan 31 2018



**Peak-Hour: 7:50 AM -- 8:50 AM**  
**Peak 15-Min: 8:05 AM -- 8:20 AM**



5-Min Count Period Beginning At	San Jose Ave (Northbound)				San Jose Ave (Southbound)				Ocean Ave (Eastbound)				Ocean Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	13	9	0	0	6	3	0	0	1	0	0	6	12	1	0	54	
7:05 AM	3	14	4	0	1	5	7	0	2	4	2	0	8	20	1	0	71	
7:10 AM	9	11	8	0	3	5	4	0	0	4	3	0	4	11	0	0	62	
7:15 AM	5	16	7	0	0	7	3	0	3	7	3	0	9	22	3	0	85	
7:20 AM	3	28	6	0	1	9	3	0	1	10	3	0	6	22	2	0	94	
7:25 AM	7	18	3	0	2	12	1	0	2	9	1	0	9	13	2	0	79	
7:30 AM	9	33	14	0	3	9	4	0	2	13	3	0	8	27	1	0	126	
7:35 AM	4	34	10	0	1	8	4	0	2	16	3	0	8	19	1	0	110	
7:40 AM	6	30	13	0	3	15	1	0	4	11	1	0	10	16	3	0	113	
7:45 AM	7	28	15	0	0	13	3	0	2	6	0	0	6	18	4	0	102	
7:50 AM	5	39	10	0	5	13	0	0	2	32	1	0	8	17	4	0	136	
7:55 AM	5	35	6	0	4	19	0	0	0	10	4	0	8	24	4	0	119	1151
8:00 AM	4	29	12	0	5	18	4	0	2	15	3	0	9	21	2	0	124	1221
8:05 AM	8	34	14	0	4	11	4	0	3	16	2	0	13	23	5	0	137	1287
8:10 AM	5	32	15	0	2	9	5	0	3	10	5	0	12	21	5	0	124	1349
8:15 AM	4	39	8	0	4	23	4	0	3	17	1	0	18	30	9	0	160	1424
8:20 AM	4	32	13	0	3	13	1	0	5	14	5	0	10	21	3	0	124	1454
8:25 AM	7	32	17	0	3	11	4	0	4	21	2	0	11	21	3	0	136	1511
8:30 AM	6	27	8	0	4	17	2	0	0	15	6	0	12	28	3	0	128	1513
8:35 AM	3	32	11	0	2	11	4	0	3	11	5	0	6	14	1	0	103	1506
8:40 AM	13	28	5	0	1	14	1	0	1	17	4	0	10	18	5	0	117	1510
8:45 AM	5	35	8	0	1	7	4	0	4	13	2	0	14	18	5	0	116	1524
8:50 AM	9	15	7	0	5	22	3	0	2	19	5	0	9	21	3	0	120	1508
8:55 AM	6	16	7	0	2	20	3	0	3	11	5	0	8	23	6	0	110	1499
<b>Peak 15-Min Flowrates</b>		<b>Northbound</b>				<b>Southbound</b>				<b>Eastbound</b>				<b>Westbound</b>				
		Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	<b>Total</b>
All Vehicles		68	420	148	0	40	172	52	0	36	172	32	0	172	296	76	0	1684
Heavy Trucks		0	16	4		0	4	0		0	8	0		0	12	0		44
Pedestrians		156				68				128				92				444
Bicycles		0	1	1		0	1	0		0	2	0		0	0	0		5
Railroad																		
Stopped Buses																		

Comments:

Report generated on 2/13/2018 3:04 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

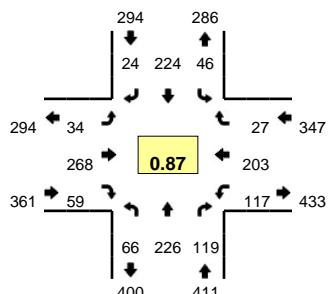
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

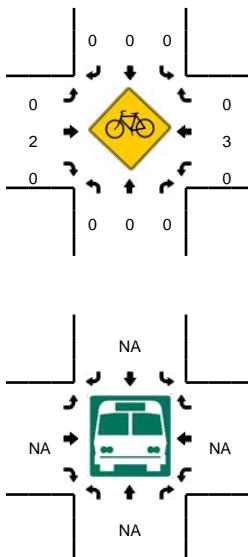
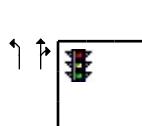
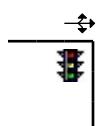
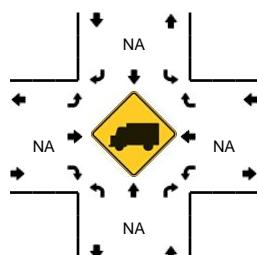
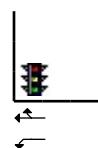
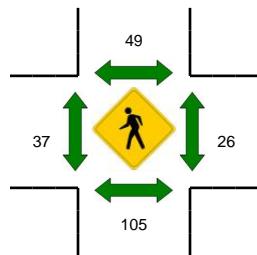
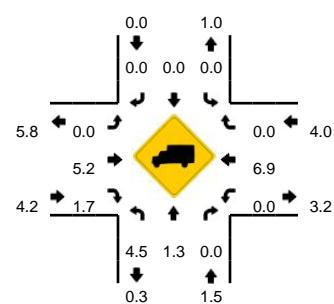
**LOCATION:** San Jose Ave -- Ocean Ave  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14612218

**DATE:** Wed, Jan 31 2018



**Peak-Hour: 4:55 PM -- 5:55 PM**  
**Peak 15-Min: 5:40 PM -- 5:55 PM**



5-Min Count Period Beginning At	San Jose Ave (Northbound)				San Jose Ave (Southbound)				Ocean Ave (Eastbound)				Ocean Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	5	13	12	0	4	9	3	0	3	18	6	0	10	14	2	0	99	
4:05 PM	4	14	9	0	3	18	1	0	2	21	6	0	11	13	4	0	106	
4:10 PM	1	15	8	0	4	11	2	0	2	17	2	0	14	11	2	0	89	
4:15 PM	5	22	10	0	4	13	4	0	4	22	7	1	16	16	2	0	126	
4:20 PM	2	16	13	0	2	16	0	0	2	14	2	0	4	12	1	0	84	
4:25 PM	3	9	6	0	4	10	6	0	1	15	3	0	5	18	1	0	81	
4:30 PM	7	14	15	0	4	9	3	0	2	31	5	0	11	16	1	0	118	
4:35 PM	2	15	12	0	2	9	2	0	5	12	2	0	8	4	4	0	77	
4:40 PM	13	24	10	0	4	15	6	0	2	18	7	0	20	22	6	0	147	
4:45 PM	5	13	9	0	6	19	4	0	5	15	7	0	9	11	1	0	104	
4:50 PM	6	12	7	0	2	15	2	0	4	21	9	0	7	16	4	0	105	
4:55 PM	3	20	8	0	5	14	1	0	3	23	7	0	10	18	2	0	114	1250
5:00 PM	6	23	11	0	2	17	3	0	2	24	4	0	7	15	1	0	115	1266
5:05 PM	8	13	19	0	2	24	1	0	1	22	3	0	11	16	2	0	122	1282
5:10 PM	6	21	10	0	3	23	0	0	4	25	8	0	11	14	3	0	128	1321
5:15 PM	8	14	10	0	3	14	3	0	3	24	4	0	12	11	0	0	106	1301
5:20 PM	6	7	7	0	0	13	0	0	2	19	3	0	8	16	3	0	84	1301
5:25 PM	9	17	6	0	5	20	3	0	2	23	7	0	3	21	1	0	117	1337
5:30 PM	6	19	7	0	2	15	0	0	1	11	3	0	6	18	2	0	90	1309
5:35 PM	2	17	12	0	9	22	0	0	4	35	6	0	9	14	3	0	133	1365
5:40 PM	2	23	13	0	7	25	7	0	6	18	4	0	13	26	1	0	145	1363
5:45 PM	4	28	7	0	1	23	2	0	4	20	5	0	9	14	3	0	120	1379
5:50 PM	6	24	9	0	7	14	4	0	1	24	5	1	18	20	6	0	139	1413
5:55 PM	4	19	5	0	4	15	4	0	3	13	3	0	4	24	3	0	101	1400
<b>Peak 15-Min Flowrates</b>	Northbound				Southbound				Eastbound				Westbound				<b>Total</b>	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	48	300	116	0	60	248	52	0	44	248	56	4	160	240	40	0	1616	
Heavy Trucks	0	0	0	0	0	0	0	0	0	12	0	0	0	16	0	0	28	
Pedestrians	120				36				4				8				168	
Bicycles	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	
Railroad																		
Stopped Buses																		

*Comments:*

Report generated on 2/13/2018 3:04 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

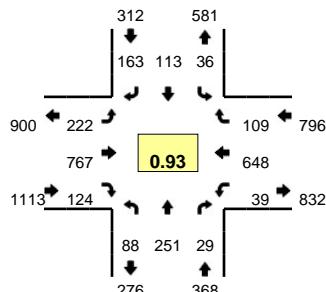
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

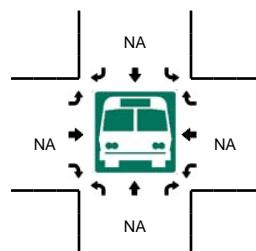
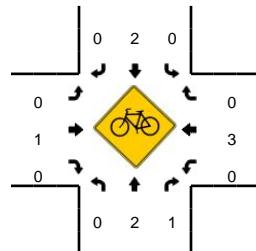
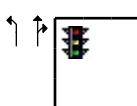
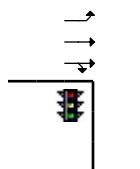
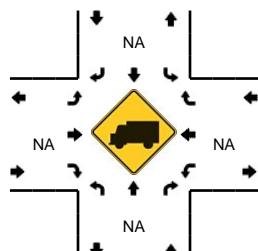
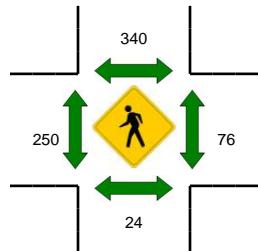
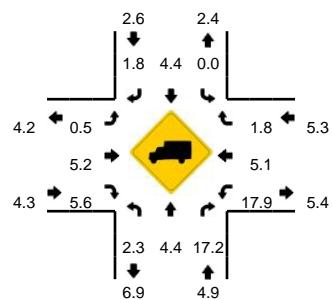
**LOCATION:** San Jose Ave -- Geneva Ave  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14612219

**DATE:** Wed, Jan 31 2018



**Peak-Hour: 7:40 AM -- 8:40 AM**  
**Peak 15-Min: 8:00 AM -- 8:15 AM**



5-Min Count Period Beginning At	San Jose Ave (Northbound)				San Jose Ave (Southbound)				Geneva Ave (Eastbound)				Geneva Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	11	8	1	0	1	3	11	0	13	29	3	1	4	43	3	0	131	
7:05 AM	12	10	0	0	0	2	11	0	13	55	5	1	1	56	5	0	171	
7:10 AM	8	11	2	0	0	3	11	0	11	36	11	0	4	70	4	0	171	
7:15 AM	9	12	1	0	1	5	7	0	16	38	7	0	3	48	4	0	151	
7:20 AM	13	13	3	0	1	5	12	0	17	30	6	1	2	51	6	0	160	
7:25 AM	6	17	1	0	1	6	18	0	18	39	7	0	2	45	4	0	164	
7:30 AM	12	22	1	0	1	10	11	0	14	39	11	0	3	73	13	0	210	
7:35 AM	6	22	1	0	1	7	13	0	9	52	4	1	2	51	5	0	174	
7:40 AM	9	26	1	0	2	6	14	0	18	59	15	0	3	49	9	0	211	
7:45 AM	11	28	4	0	2	11	12	0	10	53	8	0	1	58	9	0	207	
7:50 AM	6	24	1	0	3	7	9	0	27	63	10	0	4	49	11	0	214	
7:55 AM	4	20	1	0	4	8	14	0	19	51	11	0	3	48	8	0	191	2155
8:00 AM	6	20	4	0	0	9	9	0	18	84	10	0	3	59	8	0	230	2254
8:05 AM	4	22	1	0	7	7	9	0	26	72	9	0	2	64	8	0	231	2314
8:10 AM	8	22	2	0	5	11	14	0	20	82	6	0	1	59	8	0	238	2381
8:15 AM	12	25	2	0	0	15	18	0	17	60	13	0	5	46	9	0	222	2452
8:20 AM	10	19	4	0	4	7	17	0	8	51	10	0	5	48	15	0	198	2490
8:25 AM	5	9	2	0	0	7	12	0	22	78	5	0	5	55	13	0	213	2539
8:30 AM	10	15	6	0	3	16	18	0	21	46	15	0	5	45	5	0	205	2534
8:35 AM	3	21	1	0	6	9	17	0	15	68	12	1	2	68	6	0	229	2589
8:40 AM	3	13	1	0	3	5	7	0	22	38	9	0	5	74	10	0	190	2568
8:45 AM	8	33	2	0	3	13	16	0	18	44	11	0	2	46	9	0	205	2566
8:50 AM	1	23	2	0	1	5	3	0	12	46	10	0	4	42	9	0	158	2510
8:55 AM	9	11	1	0	5	22	15	0	16	47	7	0	1	32	3	0	169	2488
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound					
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	72	256	28	0	48	108	128	0	256	952	100	0	24	728	96	0	2796	
Heavy Trucks	0	20	8		0	4	0		0	44	8		4	28	4		120	
Pedestrians		28				384				264				116			792	
Bicycles	0	0	0		0	0	0		0	0	0		0	2	0		2	
Railroad																		
Stopped Buses																		

*Comments:*

Report generated on 2/13/2018 3:04 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

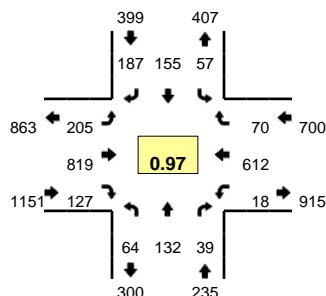
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

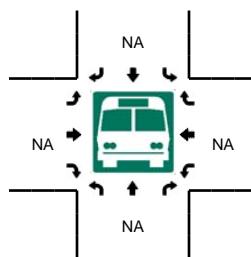
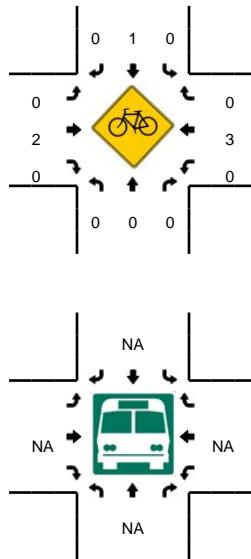
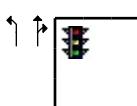
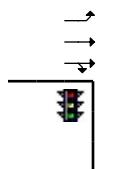
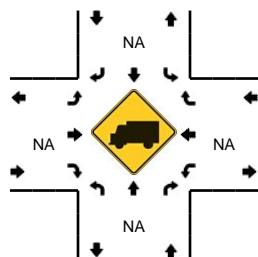
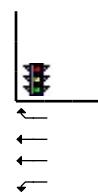
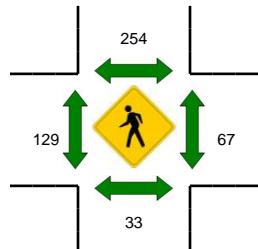
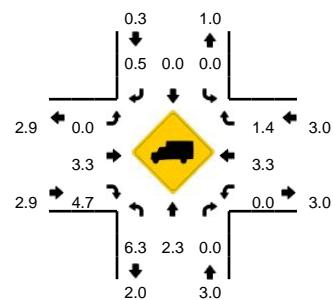
**LOCATION:** San Jose Ave -- Geneva Ave  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14612220

**DATE:** Wed, Jan 31 2018



**Peak-Hour: 4:55 PM -- 5:55 PM**  
**Peak 15-Min: 5:00 PM -- 5:15 PM**



5-Min Count Period Beginning At	San Jose Ave (Northbound)				San Jose Ave (Southbound)				Geneva Ave (Eastbound)				Geneva Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	9	4	2	0	3	10	12	0	11	69	5	0	3	64	5	0	197	
4:05 PM	4	12	1	0	5	8	19	0	27	72	4	0	2	36	6	0	196	
4:10 PM	4	13	3	0	1	7	17	0	8	62	8	0	3	41	4	0	171	
4:15 PM	6	8	0	0	2	8	15	0	20	75	8	0	2	56	10	0	210	
4:20 PM	12	11	3	0	4	7	19	0	22	72	10	0	2	38	4	0	204	
4:25 PM	5	4	2	0	3	7	16	0	17	53	11	0	2	51	7	0	178	
4:30 PM	4	11	0	0	2	6	14	0	16	79	4	0	3	60	5	0	204	
4:35 PM	4	6	2	0	1	12	12	0	22	71	9	0	4	51	4	0	198	
4:40 PM	9	8	2	0	2	14	14	0	6	67	14	0	2	54	6	0	198	
4:45 PM	7	6	1	0	3	7	14	0	19	78	4	0	3	53	5	0	200	
4:50 PM	8	9	5	0	2	14	17	0	22	60	11	0	4	38	4	0	194	
4:55 PM	6	15	3	0	4	9	18	0	8	66	12	0	2	50	3	0	196	2346
5:00 PM	4	11	2	0	3	8	14	0	22	75	8	0	2	54	4	0	207	2356
5:05 PM	4	14	4	0	5	17	14	0	21	68	16	0	1	41	8	0	213	2373
5:10 PM	3	9	2	0	8	16	15	0	16	64	13	0	0	70	7	0	223	2425
5:15 PM	6	10	1	0	5	15	19	0	19	57	12	0	1	52	6	0	203	2418
5:20 PM	4	4	2	0	1	5	15	0	10	84	7	0	1	49	3	0	185	2399
5:25 PM	10	10	5	0	3	11	17	0	15	61	10	0	1	45	6	0	194	2415
5:30 PM	9	13	6	0	8	11	14	0	14	69	8	0	2	49	8	0	211	2422
5:35 PM	6	8	1	0	4	17	14	0	23	69	12	0	1	51	4	0	210	2434
5:40 PM	3	11	7	0	3	16	16	0	21	64	10	0	2	59	5	0	217	2453
5:45 PM	4	10	3	0	8	17	18	0	20	65	12	0	2	43	5	0	207	2460
5:50 PM	5	17	3	0	5	13	13	0	16	77	7	0	3	49	11	0	219	2485
5:55 PM	8	8	3	0	1	10	16	0	15	68	15	0	2	38	4	0	188	2477
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound					
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Total	
All Vehicles	44	136	32	0	64	164	172	0	236	828	148	0	12	660	76	0	2572	
Heavy Trucks	0	8	0	0	0	0	0	0	0	32	4	0	0	28	0	0	72	
Pedestrians		52				284				132				68			536	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

*Comments:*

Report generated on 2/13/2018 3:04 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

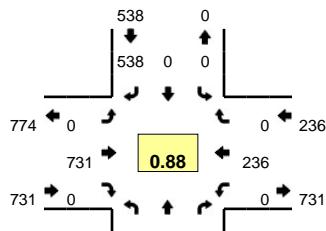
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

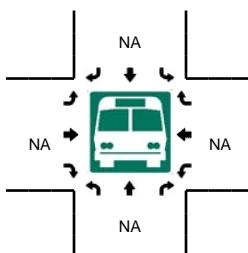
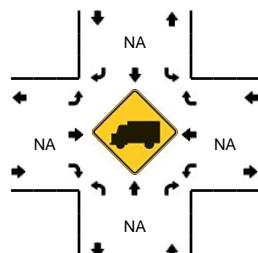
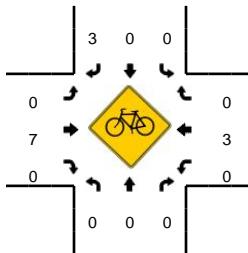
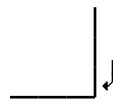
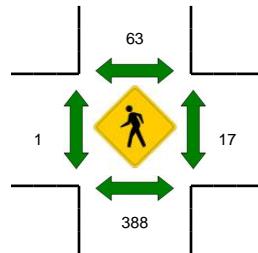
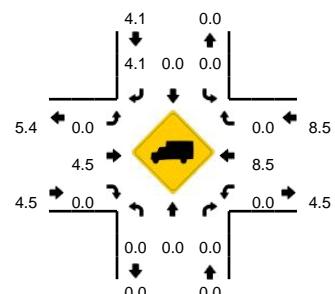
**LOCATION:** I-280 SB Off Ramp -- Ocean Ave  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14612231

**DATE:** Wed, Jan 31 2018



**Peak-Hour: 7:30 AM -- 8:30 AM**  
**Peak 15-Min: 8:10 AM -- 8:25 AM**



5-Min Count Period Beginning At	I-280 SB Off Ramp (Northbound)				I-280 SB Off Ramp (Southbound)				Ocean Ave (Eastbound)				Ocean Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	33	0	0	41	0	0	0	8	0	0	82	
7:05 AM	0	0	0	0	0	0	41	0	0	63	0	0	0	21	0	0	125	
7:10 AM	0	0	0	0	0	0	38	0	0	47	0	0	0	18	0	0	103	
7:15 AM	0	0	0	0	0	0	43	0	0	66	0	0	0	15	0	0	124	
7:20 AM	0	0	0	0	0	0	40	0	0	60	0	0	0	22	0	0	122	
7:25 AM	0	0	0	0	0	0	44	0	0	69	0	0	0	11	0	0	124	
7:30 AM	0	0	0	0	0	0	49	0	0	67	0	0	0	16	0	0	132	
7:35 AM	0	0	0	0	0	0	46	0	0	68	0	0	0	14	0	0	128	
7:40 AM	0	0	0	0	0	0	50	0	0	54	0	0	0	18	0	0	122	
7:45 AM	0	0	0	0	0	0	55	0	0	25	0	0	0	16	0	0	96	
7:50 AM	0	0	0	0	0	0	44	0	0	53	0	0	0	9	0	0	106	
7:55 AM	0	0	0	0	0	0	48	0	0	49	0	0	0	27	0	0	124	1388
8:00 AM	0	0	0	0	0	0	57	0	0	53	0	0	0	15	0	0	125	1431
8:05 AM	0	0	0	0	0	0	37	0	0	50	0	0	0	27	0	0	114	1420
8:10 AM	0	0	0	0	0	0	38	0	0	86	0	0	0	23	0	0	147	1464
8:15 AM	0	0	0	0	0	0	39	0	0	78	0	0	0	34	0	0	151	1491
8:20 AM	0	0	0	0	0	0	37	0	0	78	0	0	0	17	0	0	132	1501
8:25 AM	0	0	0	0	0	0	38	0	0	70	0	0	0	20	0	0	128	1505
8:30 AM	0	0	0	0	0	0	32	0	0	68	0	0	0	28	0	0	128	1501
8:35 AM	0	0	0	0	0	0	24	0	0	45	0	0	0	20	0	0	89	1462
8:40 AM	0	0	0	0	0	0	27	0	0	46	0	0	0	19	0	0	92	1432
8:45 AM	0	0	0	0	0	0	21	0	0	66	0	0	0	21	0	0	108	1444
8:50 AM	0	0	0	0	0	0	27	0	0	48	0	0	0	23	0	0	98	1436
8:55 AM	0	0	0	0	0	0	8	0	0	59	0	0	0	23	0	0	90	1402
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound					
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	0	0	456	0	0	968	0	0	0	296	0	0	1720	
Heavy Trucks	0	0	0		0	0	4		0	24	0		0	24	0		52	
Pedestrians	544				56				0				12				612	
Bicycles	0	0	0		0	0	0		0	1	0		0	2	0		3	
Railroad																		
Stopped Buses																		

*Comments:*

Report generated on 2/13/2018 3:04 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

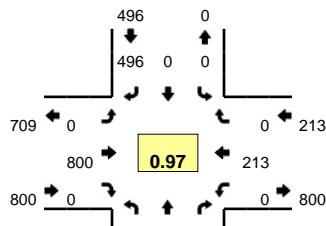
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

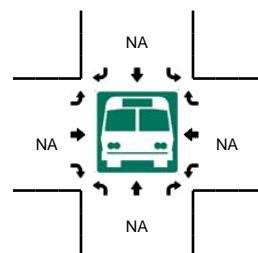
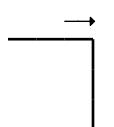
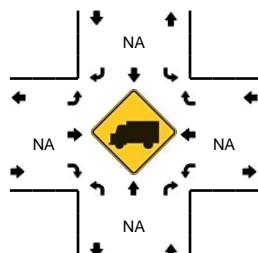
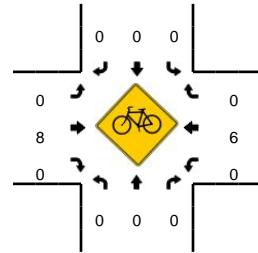
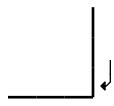
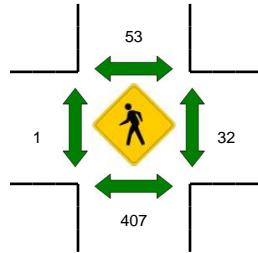
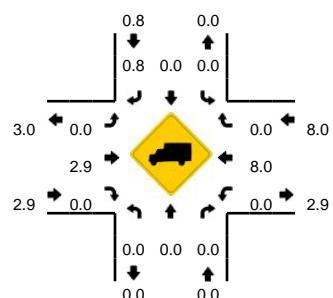
**LOCATION:** I-280 SB Off Ramp -- Ocean Ave  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14612232

**DATE:** Wed, Jan 31 2018



**Peak-Hour: 4:45 PM -- 5:45 PM**  
**Peak 15-Min: 4:45 PM -- 5:00 PM**



5-Min Count Period Beginning At	I-280 SB Off Ramp (Northbound)				I-280 SB Off Ramp (Southbound)				Ocean Ave (Eastbound)				Ocean Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	41	0	0	75	0	0	0	12	0	0	128	
4:05 PM	0	0	0	0	0	0	38	0	0	83	0	0	0	15	0	0	136	
4:10 PM	0	0	0	0	0	0	40	0	0	60	0	0	0	9	0	0	109	
4:15 PM	0	0	0	0	0	0	33	0	0	67	0	0	0	21	0	0	121	
4:20 PM	0	0	0	0	0	0	48	0	0	63	0	0	0	10	0	0	121	
4:25 PM	0	0	0	0	0	0	43	0	0	61	0	0	0	17	0	0	121	
4:30 PM	0	0	0	0	0	0	31	0	0	58	0	0	0	14	0	0	103	
4:35 PM	0	0	0	0	0	0	43	0	0	60	0	0	0	9	0	0	112	
4:40 PM	0	0	0	0	0	0	38	0	0	74	0	0	0	15	0	0	127	
4:45 PM	0	0	0	0	0	0	57	0	0	60	0	0	0	14	0	0	131	
4:50 PM	0	0	0	0	0	0	46	0	0	69	0	0	0	15	0	0	130	
4:55 PM	0	0	0	0	0	0	41	0	0	66	0	0	0	19	0	0	126	1465
5:00 PM	0	0	0	0	0	0	49	0	0	56	0	0	0	19	0	0	124	1461
5:05 PM	0	0	0	0	0	0	43	0	0	75	0	0	0	12	0	0	130	1455
5:10 PM	0	0	0	0	0	0	36	0	0	80	0	0	0	13	0	0	129	1475
5:15 PM	0	0	0	0	0	0	38	0	0	69	0	0	0	16	0	0	123	1477
5:20 PM	0	0	0	0	0	0	42	0	0	64	0	0	0	21	0	0	127	1483
5:25 PM	0	0	0	0	0	0	44	0	0	42	0	0	0	25	0	0	111	1473
5:30 PM	0	0	0	0	0	0	34	0	0	82	0	0	0	12	0	0	128	1498
5:35 PM	0	0	0	0	0	0	34	0	0	60	0	0	0	22	0	0	116	1502
5:40 PM	0	0	0	0	0	0	32	0	0	77	0	0	0	25	0	0	134	1509
5:45 PM	0	0	0	0	0	0	24	0	0	71	0	0	0	19	0	0	114	1492
5:50 PM	0	0	0	0	0	0	36	0	0	70	0	0	0	21	0	0	127	1489
5:55 PM	0	0	0	0	0	0	20	0	0	52	0	0	0	13	0	0	85	1448
<b>Peak 15-Min Flowrates</b>	Northbound				Southbound				Eastbound				Westbound				<b>Total</b>	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	0	0	576	0	0	780	0	0	0	192	0	0	1548	
Heavy Trucks	0	0	0		0	0	4		0	32	0		0	24	0		60	
Pedestrians	408				72				0				56				536	
Bicycles	0	0	0		0	0	0		0	2	0		0	2	0		4	
Railroad																		
Stopped Buses																		

**Comments:**

Report generated on 2/13/2018 3:04 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

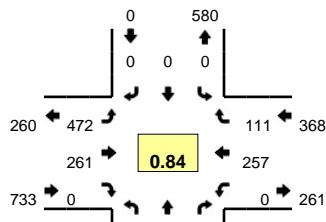
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

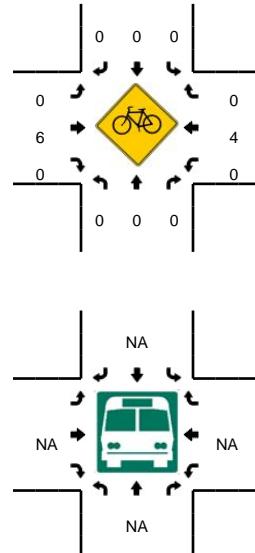
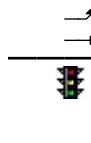
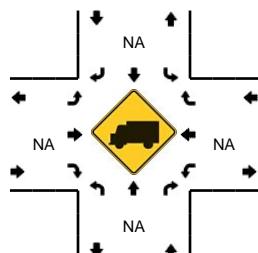
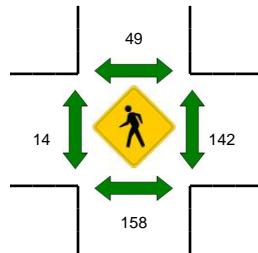
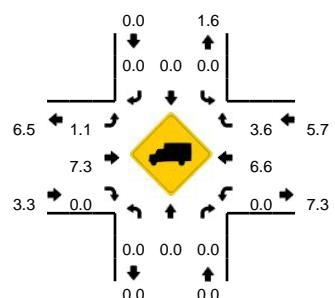
**LOCATION:** I-280 NB On Ramp -- Ocean Ave  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14612233

**DATE:** Wed, Jan 31 2018



**Peak-Hour: 8:00 AM -- 9:00 AM**  
**Peak 15-Min: 8:20 AM -- 8:35 AM**



5-Min Count Period Beginning At	I-280 NB On Ramp (Northbound)				I-280 NB On Ramp (Southbound)				Ocean Ave (Eastbound)				Ocean Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	21	1	0	0	0	8	7	0	37	
7:05 AM	0	0	0	0	0	0	0	0	65	11	0	0	0	13	11	0	100	
7:10 AM	0	0	0	0	0	0	0	0	28	3	0	1	0	15	10	0	57	
7:15 AM	0	0	0	0	0	0	0	0	37	10	0	2	0	20	10	0	79	
7:20 AM	0	0	0	0	0	0	0	0	50	25	0	0	0	14	7	0	96	
7:25 AM	0	0	0	0	0	0	0	0	46	13	0	0	0	18	12	0	89	
7:30 AM	0	0	0	0	0	0	0	0	37	25	0	0	0	21	17	0	100	
7:35 AM	0	0	0	0	0	0	0	0	46	14	0	0	0	15	4	0	79	
7:40 AM	0	0	0	0	0	0	0	0	41	30	0	2	0	21	11	0	105	
7:45 AM	0	0	0	0	0	0	0	0	19	13	0	0	0	20	8	0	60	
7:50 AM	0	0	0	0	0	0	0	0	36	25	0	0	0	14	8	0	83	
7:55 AM	0	0	0	0	0	0	0	0	20	19	0	0	0	20	7	0	66	951
8:00 AM	0	0	0	0	0	0	0	0	31	25	0	1	0	19	9	0	85	999
8:05 AM	0	0	0	0	0	0	0	0	34	24	0	0	0	21	8	0	87	986
8:10 AM	0	0	0	0	0	0	0	0	36	18	0	0	0	24	12	0	90	1019
8:15 AM	0	0	0	0	0	0	0	0	57	20	0	0	0	21	5	0	103	1043
8:20 AM	0	0	0	0	0	0	0	0	50	19	0	0	0	30	11	0	110	1057
8:25 AM	0	0	0	0	0	0	0	0	47	32	0	0	0	16	11	0	106	1074
8:30 AM	0	0	0	0	0	0	0	0	47	28	0	1	0	25	11	0	112	1086
8:35 AM	0	0	0	0	0	0	0	0	38	20	0	0	0	15	5	0	78	1085
8:40 AM	0	0	0	0	0	0	0	0	26	14	0	1	0	17	5	0	63	1043
8:45 AM	0	0	0	0	0	0	0	0	35	19	0	0	0	23	18	0	95	1078
8:50 AM	0	0	0	0	0	0	0	0	53	22	0	0	0	16	4	0	95	1090
8:55 AM	0	0	0	0	0	0	0	0	15	20	0	0	0	30	12	0	77	1101

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	0	0	576	316	0	4	0	284	132	0	1312
Heavy Trucks	0	0	0	0	0	0	0	0	0	20	0	0	0	16	4	0	40
Pedestrians	176				32				0				160				368
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0		1
Railroad																	
Stopped Buses																	

*Comments:*

Report generated on 2/13/2018 3:04 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

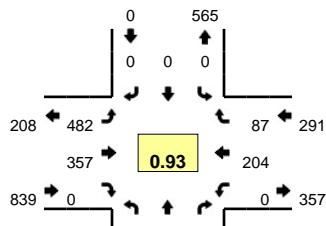
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

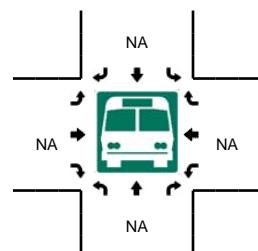
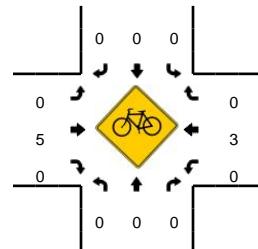
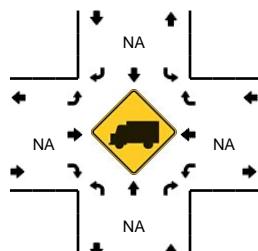
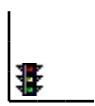
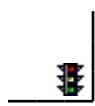
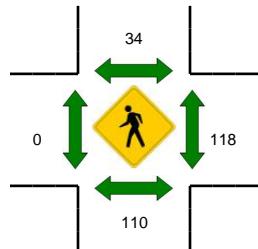
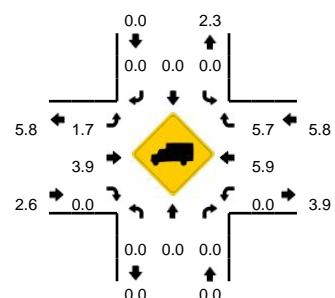
**LOCATION:** I-280 NB On Ramp -- Ocean Ave  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14612234

**DATE:** Wed, Jan 31 2018



**Peak-Hour: 4:55 PM -- 5:55 PM**  
**Peak 15-Min: 5:40 PM -- 5:55 PM**



5-Min Count Period Beginning At	I-280 NB On Ramp (Northbound)				I-280 NB On Ramp (Southbound)				Ocean Ave (Eastbound)				Ocean Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	49	33	0	0	0	12	9	0	103	
4:05 PM	0	0	0	0	0	0	0	0	55	32	0	0	0	18	6	0	111	
4:10 PM	0	0	0	0	0	0	0	0	36	26	0	0	0	10	5	0	77	
4:15 PM	0	0	0	0	0	0	0	0	30	22	0	0	0	16	5	0	73	
4:20 PM	0	0	0	0	0	0	0	0	45	22	0	0	0	17	7	0	91	
4:25 PM	0	0	0	0	0	0	0	0	28	23	0	0	0	14	11	0	76	
4:30 PM	0	0	0	0	0	0	0	0	33	31	0	1	0	14	9	0	88	
4:35 PM	0	0	0	0	0	0	0	0	46	20	0	0	0	11	7	0	84	
4:40 PM	0	0	0	0	0	0	0	0	38	23	0	1	0	13	6	0	81	
4:45 PM	0	0	0	0	0	0	0	0	26	24	0	1	0	17	10	0	78	
4:50 PM	0	0	0	0	0	0	0	0	25	34	0	0	0	17	6	0	82	
4:55 PM	0	0	0	0	0	0	0	0	41	32	0	1	0	10	5	0	89	1033
5:00 PM	0	0	0	0	0	0	0	0	35	27	0	1	0	20	6	0	89	1019
5:05 PM	0	0	0	0	0	0	0	0	37	27	0	0	0	13	11	0	88	996
5:10 PM	0	0	0	0	0	0	0	0	35	36	0	0	0	16	8	0	95	1014
5:15 PM	0	0	0	0	0	0	0	0	60	18	0	2	0	9	9	0	98	1039
5:20 PM	0	0	0	0	0	0	0	0	38	37	0	0	0	15	9	0	99	1047
5:25 PM	0	0	0	0	0	0	0	0	27	37	0	0	0	24	10	0	98	1069
5:30 PM	0	0	0	0	0	0	0	0	30	19	0	0	0	19	8	0	76	1057
5:35 PM	0	0	0	0	0	0	0	0	29	44	0	0	0	16	5	0	94	1067
5:40 PM	0	0	0	0	0	0	0	0	57	24	0	0	0	21	5	0	107	1093
5:45 PM	0	0	0	0	0	0	0	0	35	27	0	0	0	24	7	0	93	1108
5:50 PM	0	0	0	0	0	0	0	0	54	29	0	0	0	17	4	0	104	1130
5:55 PM	0	0	0	0	0	0	0	0	23	26	0	0	0	23	7	0	79	1120
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	0	0	0	0	584	320	0	0	0	248	64	0	1216	
Heavy Trucks	0	0	0	0	0	0	0	0	4	12	0	0	0	12	0	0	28	
Pedestrians	108	0	0	0	16	0	0	0	0	0	0	0	0	172	0	0	296	
Bicycles	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

Report generated on 2/13/2018 3:04 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

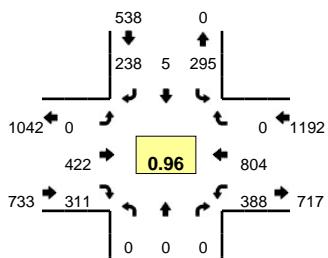
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

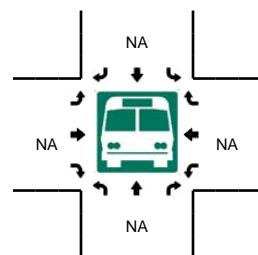
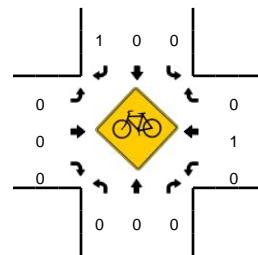
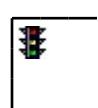
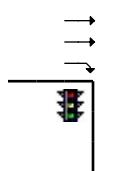
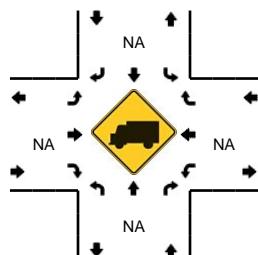
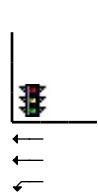
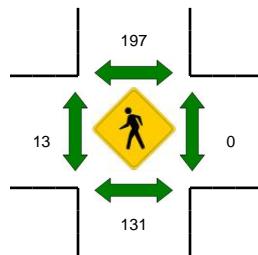
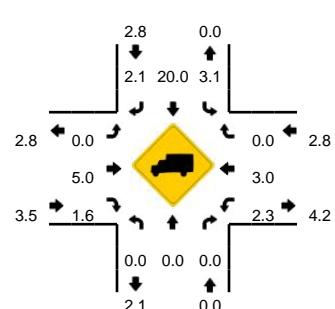
**LOCATION:** I-280 SB Ramps -- Geneva Ave  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14612235

**DATE:** Wed, Jan 31 2018



**Peak-Hour: 7:45 AM -- 8:45 AM**  
**Peak 15-Min: 8:25 AM -- 8:40 AM**



5-Min Count Period Beginning At	I-280 SB Ramps (Northbound)				I-280 SB Ramps (Southbound)				Geneva Ave (Eastbound)				Geneva Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	18	0	4	0	0	23	23	0	30	22	0	0	120	
7:05 AM	0	0	0	0	12	2	3	0	0	18	18	0	30	35	0	0	118	
7:10 AM	0	0	0	0	31	1	6	0	0	27	18	0	22	39	0	1	145	
7:15 AM	0	0	0	0	13	1	8	0	0	22	30	0	30	34	0	0	138	
7:20 AM	0	0	0	0	6	0	3	0	0	35	26	0	32	60	0	0	162	
7:25 AM	0	0	0	0	27	0	6	0	0	29	20	0	33	60	0	0	175	
7:30 AM	0	0	0	0	9	1	9	0	0	25	27	0	36	54	0	0	161	
7:35 AM	0	0	0	0	11	0	7	0	0	38	25	0	29	69	0	0	179	
7:40 AM	0	0	0	0	21	0	11	0	0	32	37	0	22	43	0	0	166	
7:45 AM	0	0	0	0	22	1	15	0	0	36	28	0	38	59	0	0	199	
7:50 AM	0	0	0	0	21	0	12	0	0	41	27	0	32	67	0	0	200	
7:55 AM	0	0	0	0	27	0	32	0	0	30	24	0	27	61	0	0	201	1964
8:00 AM	0	0	0	0	33	1	15	0	0	32	20	0	29	66	0	0	196	2040
8:05 AM	0	0	0	0	28	0	17	0	0	41	28	0	27	62	0	0	203	2125
8:10 AM	0	0	0	0	31	0	20	0	0	35	20	0	24	67	0	0	197	2177
8:15 AM	0	0	0	0	25	1	19	0	0	33	28	0	44	68	0	0	218	2257
8:20 AM	0	0	0	0	17	1	18	0	0	39	37	0	31	75	0	0	218	2313
8:25 AM	0	0	0	0	25	1	25	0	0	35	27	0	25	54	0	0	192	2330
8:30 AM	0	0	0	0	19	0	26	0	0	32	23	0	39	81	0	0	220	2389
8:35 AM	0	0	0	0	25	0	20	0	0	40	26	0	35	84	0	0	230	2440
8:40 AM	0	0	0	0	22	0	19	0	0	28	23	0	37	60	0	0	189	2463
8:45 AM	0	0	0	0	19	2	23	0	0	28	19	0	27	52	0	0	170	2434
8:50 AM	0	0	0	0	14	0	21	0	0	30	23	0	23	76	0	0	187	2421
8:55 AM	0	0	0	0	28	1	25	0	0	29	23	0	17	47	0	0	170	2390
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound					
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	276	4	284	0	0	428	304	0	396	876	0	0	2568	
Heavy Trucks	0	0	0	0	8	0	12	0	0	24	0	0	8	32	0	0	84	
Pedestrians	160				180				4				0				344	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0		1	
Railroad																		
Stopped Buses																		

*Comments:*

Report generated on 2/13/2018 3:04 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

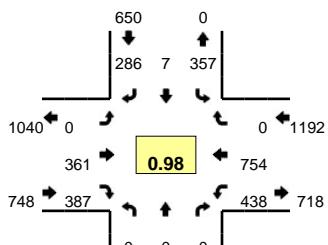
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

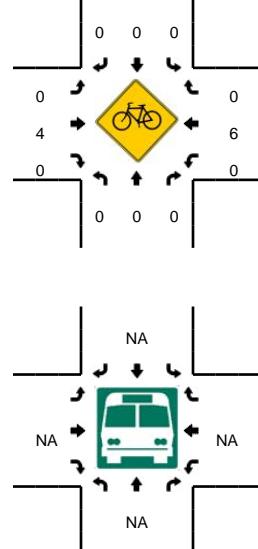
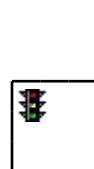
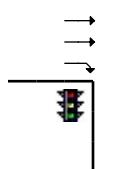
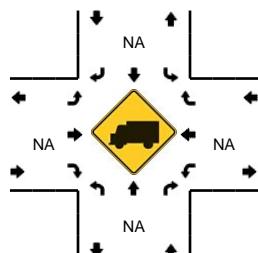
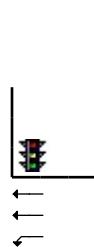
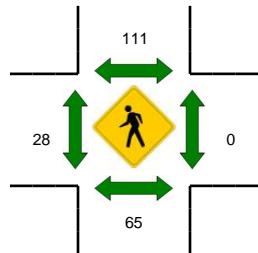
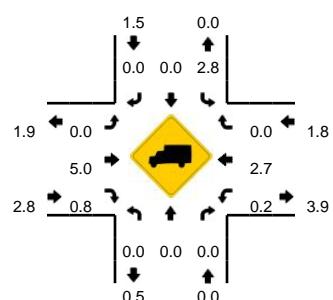
**LOCATION:** I-280 SB Ramps -- Geneva Ave  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14612236

**DATE:** Wed, Jan 31 2018



**Peak-Hour: 5:00 PM -- 6:00 PM**  
**Peak 15-Min: 5:10 PM -- 5:25 PM**



5-Min Count Period Beginning At	I-280 SB Ramps (Northbound)				I-280 SB Ramps (Southbound)				Geneva Ave (Eastbound)				Geneva Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	32	0	29	0	0	23	34	0	40	48	0	0	206	
4:05 PM	0	0	0	0	25	0	16	0	0	44	33	0	35	46	0	0	199	
4:10 PM	0	0	0	0	36	0	16	0	0	27	35	0	24	41	0	0	179	
4:15 PM	0	0	0	0	32	1	19	0	0	31	25	0	43	52	0	0	203	
4:20 PM	0	0	0	0	26	2	19	0	0	27	31	0	37	54	0	0	196	
4:25 PM	0	0	0	0	40	1	18	0	0	29	26	0	32	53	0	0	199	
4:30 PM	0	0	0	0	21	0	19	0	0	31	22	0	32	63	0	0	188	
4:35 PM	0	0	0	0	29	0	20	0	0	38	31	0	38	62	0	0	218	
4:40 PM	0	0	0	0	35	0	19	0	0	28	29	0	23	47	0	0	181	
4:45 PM	0	0	0	0	30	0	23	0	0	26	23	0	44	62	0	0	208	
4:50 PM	0	0	0	0	23	0	22	0	0	42	18	0	36	57	0	0	198	
4:55 PM	0	0	0	0	34	0	22	0	0	24	30	0	30	58	0	0	198	2373
5:00 PM	0	0	0	0	28	0	19	0	0	26	25	0	40	58	0	0	196	2363
5:05 PM	0	0	0	0	21	1	24	0	0	29	36	0	41	53	0	0	205	2369
5:10 PM	0	0	0	0	33	0	24	0	0	39	38	0	35	63	0	0	232	2422
5:15 PM	0	0	0	0	22	0	20	0	0	28	36	0	47	64	0	0	217	2436
5:20 PM	0	0	0	0	31	1	18	0	0	29	46	0	40	50	0	0	215	2455
5:25 PM	0	0	0	0	36	1	25	0	0	23	31	0	41	59	0	0	216	2472
5:30 PM	0	0	0	0	28	0	26	0	0	32	24	0	36	75	0	0	221	2505
5:35 PM	0	0	0	0	31	1	22	0	0	30	32	0	32	68	0	0	216	2503
5:40 PM	0	0	0	0	28	1	29	0	0	34	34	0	26	64	0	0	216	2538
5:45 PM	0	0	0	0	33	1	37	0	0	25	33	0	37	65	0	0	231	2561
5:50 PM	0	0	0	0	27	1	19	0	0	36	22	0	33	63	0	0	201	2564
5:55 PM	0	0	0	0	39	0	23	0	0	30	30	0	30	72	0	0	224	2590

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	344	4	248	0	0	384	480	0	488	708	0	0	2656
Heavy Trucks	0	0	0	0	12	0	0	0	0	20	0	0	0	20	0	0	52
Pedestrians	60				104				28				0				192
Bicycles	0	0	0	0	0	0	0	0	0	3	0	0	0	2	0	0	5
Railroad																	
Stopped Buses																	

Comments:

Report generated on 2/13/2018 3:04 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

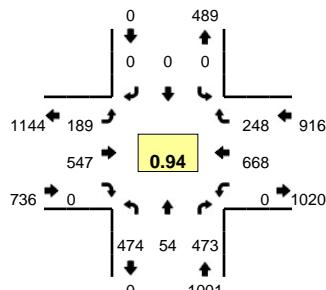
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

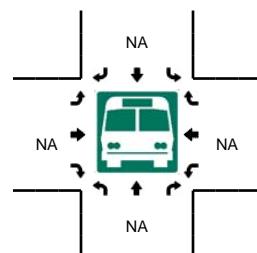
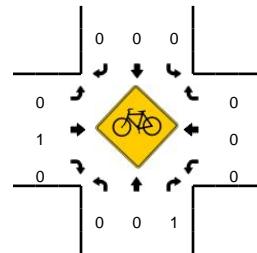
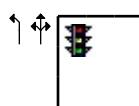
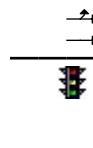
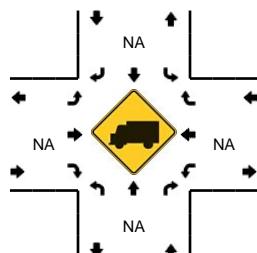
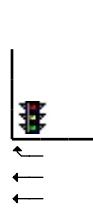
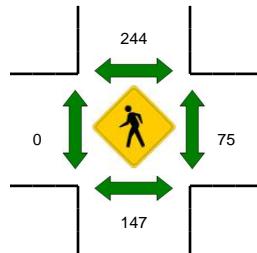
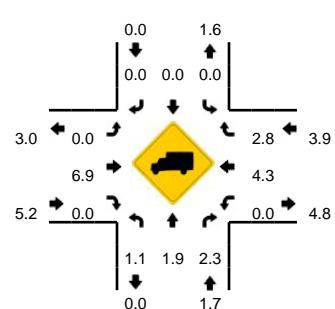
**LOCATION:** I-280 NB Ramps -- Geneva Ave  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14612237

**DATE:** Wed, Jan 31 2018



**Peak-Hour: 7:40 AM -- 8:40 AM**  
**Peak 15-Min: 8:05 AM -- 8:20 AM**



5-Min Count Period Beginning At	I-280 NB Ramps (Northbound)				I-280 NB Ramps (Southbound)				Geneva Ave (Eastbound)				Geneva Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	16	3	29	0	0	0	0	0	10	23	0	0	0	33	34	0	148	
7:05 AM	18	2	36	0	0	0	0	0	10	22	0	0	0	43	41	0	172	
7:10 AM	18	1	21	0	0	0	0	0	16	44	0	0	0	50	35	0	185	
7:15 AM	25	4	33	0	0	0	0	0	9	27	0	0	0	38	25	0	161	
7:20 AM	32	5	20	0	0	0	0	0	25	12	0	0	0	50	32	0	176	
7:25 AM	32	3	31	0	0	0	0	0	14	44	0	0	0	62	14	0	200	
7:30 AM	33	6	23	0	0	0	0	0	13	22	0	0	0	56	27	0	180	
7:35 AM	39	6	40	0	0	0	0	0	10	34	0	0	0	48	18	0	195	
7:40 AM	24	8	36	0	0	0	0	0	18	44	0	0	0	47	27	0	204	
7:45 AM	39	7	43	0	0	0	0	0	14	44	0	0	0	64	29	0	240	
7:50 AM	54	7	41	0	0	0	0	0	13	49	0	0	0	46	12	0	222	
7:55 AM	28	2	37	0	0	0	0	0	16	56	0	0	0	55	10	0	204	2287
8:00 AM	34	5	46	0	0	0	0	0	20	41	0	0	0	62	15	0	223	2362
8:05 AM	41	3	53	0	0	0	0	0	21	41	0	1	0	50	20	0	230	2420
8:10 AM	31	6	46	0	0	0	0	0	18	58	0	0	0	58	24	0	241	2476
8:15 AM	49	5	33	0	0	0	0	0	18	40	0	0	0	61	28	0	234	2549
8:20 AM	46	2	32	0	0	0	0	0	14	39	0	0	0	47	24	0	204	2577
8:25 AM	31	2	36	0	0	0	0	0	13	49	0	0	0	60	16	0	207	2584
8:30 AM	44	4	33	0	0	0	0	0	9	39	0	1	0	64	24	0	218	2622
8:35 AM	53	3	37	0	0	0	0	0	13	47	0	0	0	54	19	0	226	2653
8:40 AM	48	0	26	0	0	0	0	0	12	40	0	0	0	56	11	0	193	2642
8:45 AM	29	0	27	0	0	0	0	0	11	37	0	0	0	51	17	0	172	2574
8:50 AM	47	2	22	0	0	0	0	0	11	30	0	0	0	49	8	0	169	2521
8:55 AM	23	0	18	0	0	0	0	0	11	52	0	0	0	50	9	0	163	2480
<b>Peak 15-Min Flowrates</b>	Northbound				Southbound				Eastbound				Westbound				<b>Total</b>	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	484	56	528	0	0	0	0	0	228	556	0	4	0	676	288	0	2820	
Heavy Trucks	8	0	12		0	0	0	0	0	44	0		0	20	0		84	
Pedestrians		180				352								36			568	
Bicycles	0	0	0		0	0	0	0	0	1	0		0	0	0		1	
Railroad																		
Stopped Buses																		

*Comments:*

Report generated on 2/13/2018 3:04 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

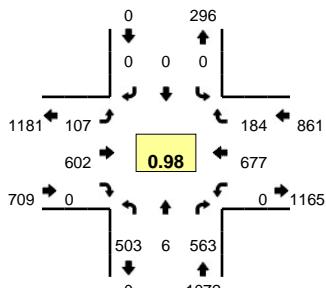
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

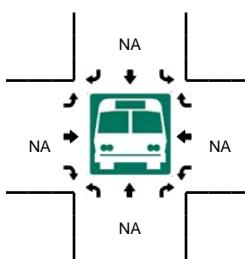
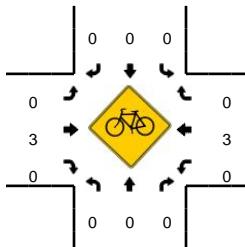
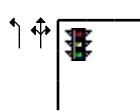
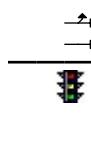
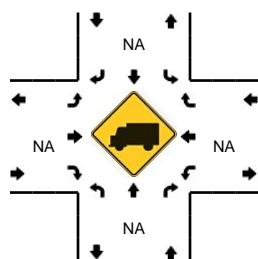
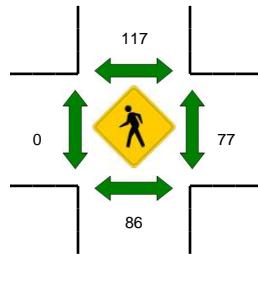
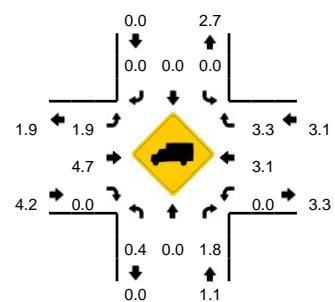
**LOCATION:** I-280 NB Ramps -- Geneva Ave  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14612238

**DATE:** Wed, Jan 31 2018



**Peak-Hour: 4:45 PM -- 5:45 PM**  
**Peak 15-Min: 5:25 PM -- 5:40 PM**



5-Min Count Period Beginning At	I-280 NB Ramps (Northbound)				I-280 NB Ramps (Southbound)				Geneva Ave (Eastbound)				Geneva Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	27	0	43	0	0	0	0	0	6	46	0	0	0	0	58	16	1	197
4:05 PM	29	0	36	0	0	0	0	0	9	56	0	0	0	0	47	14	0	191
4:10 PM	24	0	34	0	0	0	0	0	9	56	0	0	0	0	47	18	0	188
4:15 PM	38	0	45	0	0	0	0	0	6	56	0	0	0	0	61	21	0	227
4:20 PM	43	0	39	0	0	0	0	0	11	39	0	0	0	0	49	13	0	194
4:25 PM	35	1	34	0	0	0	0	0	7	62	0	0	0	0	51	20	0	210
4:30 PM	42	0	55	0	0	0	0	0	5	42	0	1	0	0	49	18	0	212
4:35 PM	47	0	45	0	0	0	0	0	9	50	0	0	0	0	57	19	0	227
4:40 PM	24	0	34	0	0	0	0	0	9	66	0	0	0	0	52	16	0	201
4:45 PM	42	1	45	0	0	0	0	0	14	43	0	0	0	0	63	17	0	225
4:50 PM	42	1	51	0	0	0	0	0	15	43	0	0	0	0	48	12	0	212
4:55 PM	43	0	47	0	0	0	0	0	6	63	0	0	0	0	53	19	0	231
5:00 PM	36	1	52	0	0	0	0	0	4	50	0	0	0	0	57	16	0	216
5:05 PM	42	1	56	0	0	0	0	0	9	37	0	0	0	0	50	15	0	210
5:10 PM	36	0	46	0	0	0	0	0	9	64	0	0	0	0	65	7	0	227
5:15 PM	46	1	44	0	0	0	0	0	5	42	0	0	0	0	63	21	0	2587
5:20 PM	37	0	50	0	0	0	0	0	9	44	0	0	0	0	50	12	0	202
5:25 PM	46	0	37	0	0	0	0	0	8	56	0	1	0	0	58	18	0	224
5:30 PM	46	1	49	0	0	0	0	0	8	53	0	0	0	0	67	13	0	237
5:35 PM	47	0	40	0	0	0	0	0	8	48	0	0	0	0	53	17	0	213
5:40 PM	40	0	46	0	0	0	0	0	11	59	0	0	0	0	50	17	0	223
5:45 PM	45	0	44	0	0	0	0	0	5	50	0	0	0	0	61	20	0	2642
5:50 PM	53	2	44	0	0	0	0	0	6	50	0	0	0	0	45	10	0	210
5:55 PM	48	0	34	0	0	0	0	0	11	57	0	1	0	0	50	12	0	213
<b>Peak 15-Min Flowrates</b>	<b>Northbound</b>				<b>Southbound</b>				<b>Eastbound</b>				<b>Westbound</b>					
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	556	4	504	0	0	0	0	0	96	628	0	4	0	712	192	0	2696	
Heavy Trucks	8	0	12		0	0	0	0	4	20	0		0	16	4		64	
Pedestrians		100				120				0				100			320	
Bicycles	0	0	0		0	0	0	0	0	0	0	0	0	0	0		0	
Railroad																		
Stopped Buses																		

*Comments:*

Report generated on 2/13/2018 3:04 PM

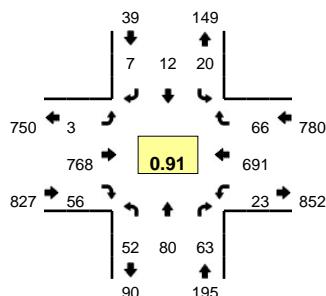
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

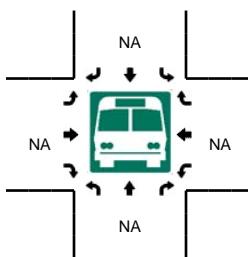
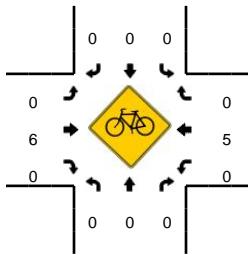
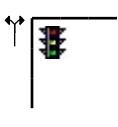
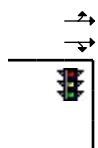
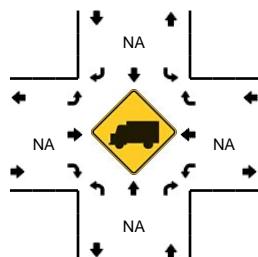
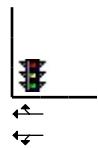
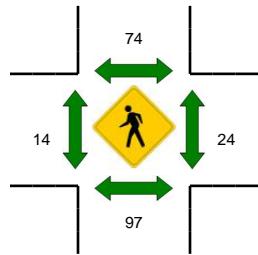
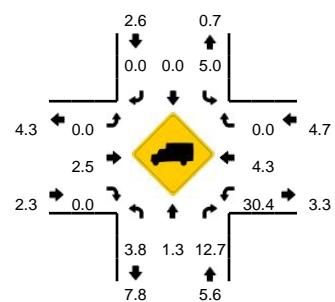
Method for determining peak hour: Total Entering Volume

**LOCATION:** Plymouth Ave -- Ocean Ave  
**CITY/STATE:** San Francisco, CA

**QC JOB #:** 14612225  
**DATE:** Wed, Jan 31 2018



**Peak-Hour: 7:35 AM -- 8:35 AM**  
**Peak 15-Min: 7:35 AM -- 7:50 AM**



5-Min Count Period Beginning At	Plymouth Ave (Northbound)				Plymouth Ave (Southbound)				Ocean Ave (Eastbound)				Ocean Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	3	0	2	1	0	0	0	38	1	0	2	30	1	0	78	
7:05 AM	3	2	7	0	1	1	0	0	0	44	2	0	2	58	1	0	121	
7:10 AM	5	4	17	0	1	1	1	0	1	38	1	1	1	37	4	0	112	
7:15 AM	2	4	6	0	1	1	0	0	0	47	4	0	3	68	3	0	139	
7:20 AM	5	6	3	0	2	0	0	0	1	44	7	0	4	63	1	0	136	
7:25 AM	3	7	3	0	2	1	0	0	0	63	1	0	2	55	4	0	141	
7:30 AM	5	3	9	0	2	1	0	0	0	63	3	0	3	41	7	0	137	
7:35 AM	1	10	3	0	0	1	0	0	0	76	2	0	0	64	5	0	162	
7:40 AM	6	8	6	0	1	0	1	0	0	70	6	0	3	75	3	0	179	
7:45 AM	6	11	7	0	3	1	0	0	0	74	2	0	0	53	8	0	165	
7:50 AM	4	7	9	0	1	1	0	0	1	61	4	0	2	46	4	0	140	
7:55 AM	2	6	4	0	2	0	0	0	1	57	5	0	3	53	6	0	139	1649
8:00 AM	5	1	2	0	2	2	0	0	0	57	6	0	2	54	8	0	139	1710
8:05 AM	3	4	4	0	6	4	3	0	0	53	5	0	3	54	5	0	144	1733
8:10 AM	5	8	4	0	0	1	1	0	0	50	4	0	1	65	6	0	145	1766
8:15 AM	4	3	4	0	1	0	1	0	0	70	6	0	3	66	5	0	163	1790
8:20 AM	8	8	5	0	2	1	0	0	0	65	5	0	1	58	6	0	159	1813
8:25 AM	4	6	7	0	1	1	0	0	0	80	6	0	3	57	3	0	168	1840
8:30 AM	4	8	8	0	1	0	1	0	1	55	5	0	1	46	7	1	138	1841
8:35 AM	4	2	8	0	2	0	0	0	0	72	2	0	1	58	2	0	151	1830
8:40 AM	1	12	5	0	2	0	0	0	1	69	7	0	1	57	11	0	166	1817
8:45 AM	1	9	5	0	1	1	0	0	1	61	2	0	1	44	7	0	133	1785
8:50 AM	4	9	9	0	3	0	0	0	0	64	5	0	4	42	4	0	144	1789
8:55 AM	4	7	9	0	2	0	0	0	1	52	3	0	2	24	8	0	112	1762
<b>Peak 15-Min Flowrates</b>	Northbound				Southbound				Eastbound				Westbound				<b>Total</b>	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	52	116	64	0	16	8	4	0	0	880	40	0	12	768	64	0	2024	
Heavy Trucks	4	4	12		0	0	0	0	0	36	0	0	4	28	0	0	88	
Pedestrians		72				60				32				20			184	
Bicycles	0	0	0		0	0	0		0	0	0		0	2	0		2	
Railroad																		
Stopped Buses																		

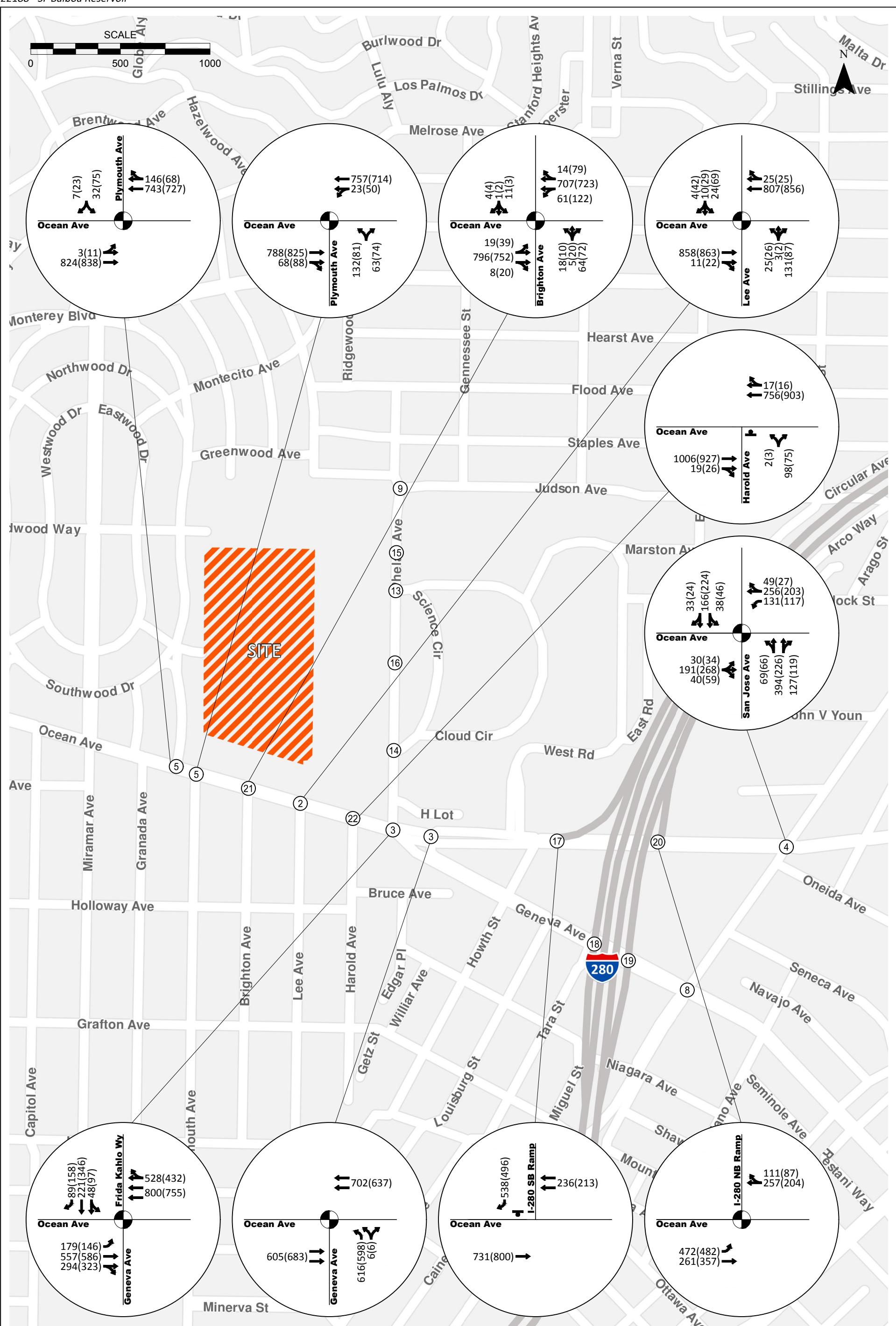
*Comments:*

Report generated on 2/13/2018 3:04 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

## **Attachment B – Intersection Volumes Figures**

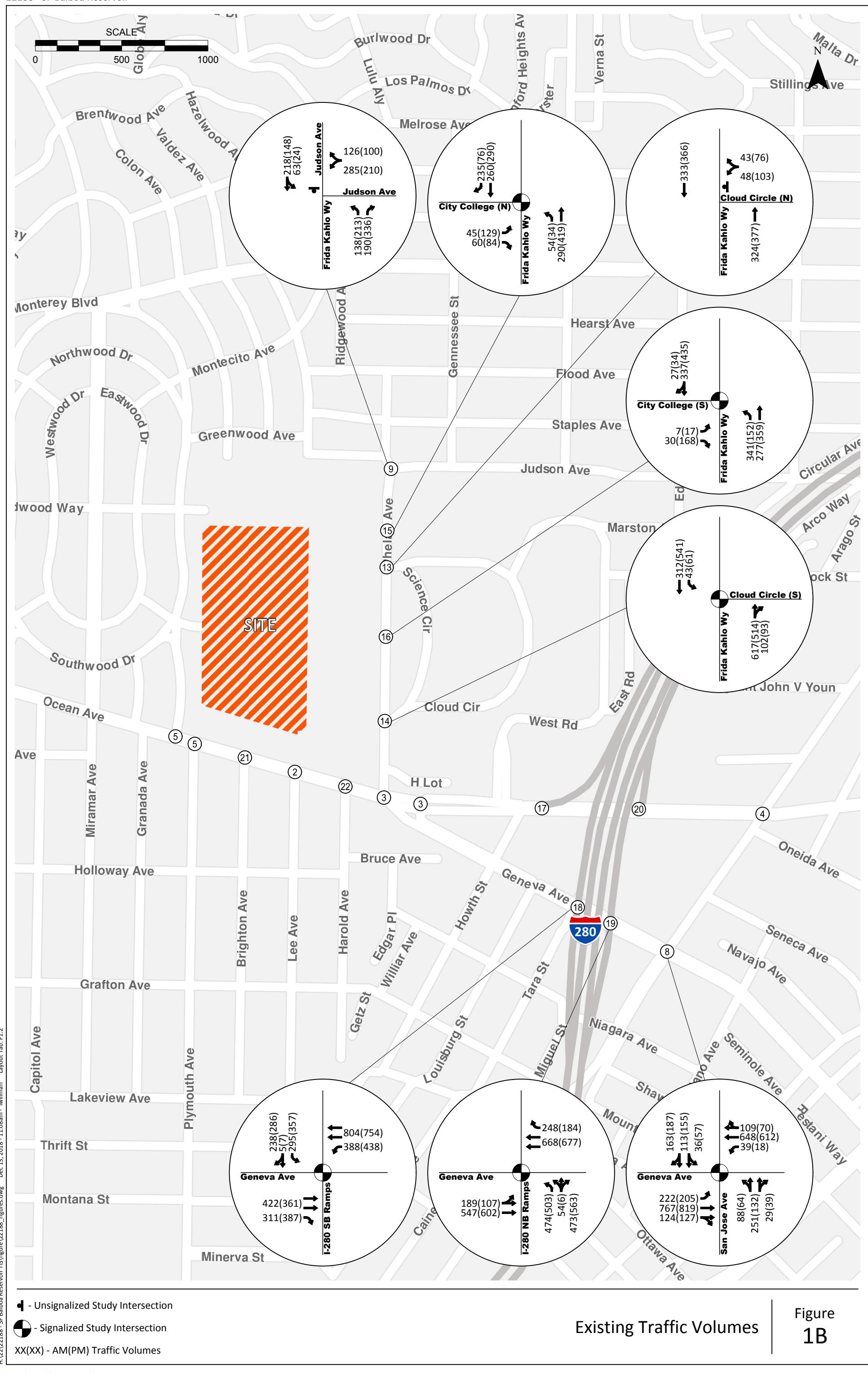
Layout 1.d富士通製品カタログ Vol.1

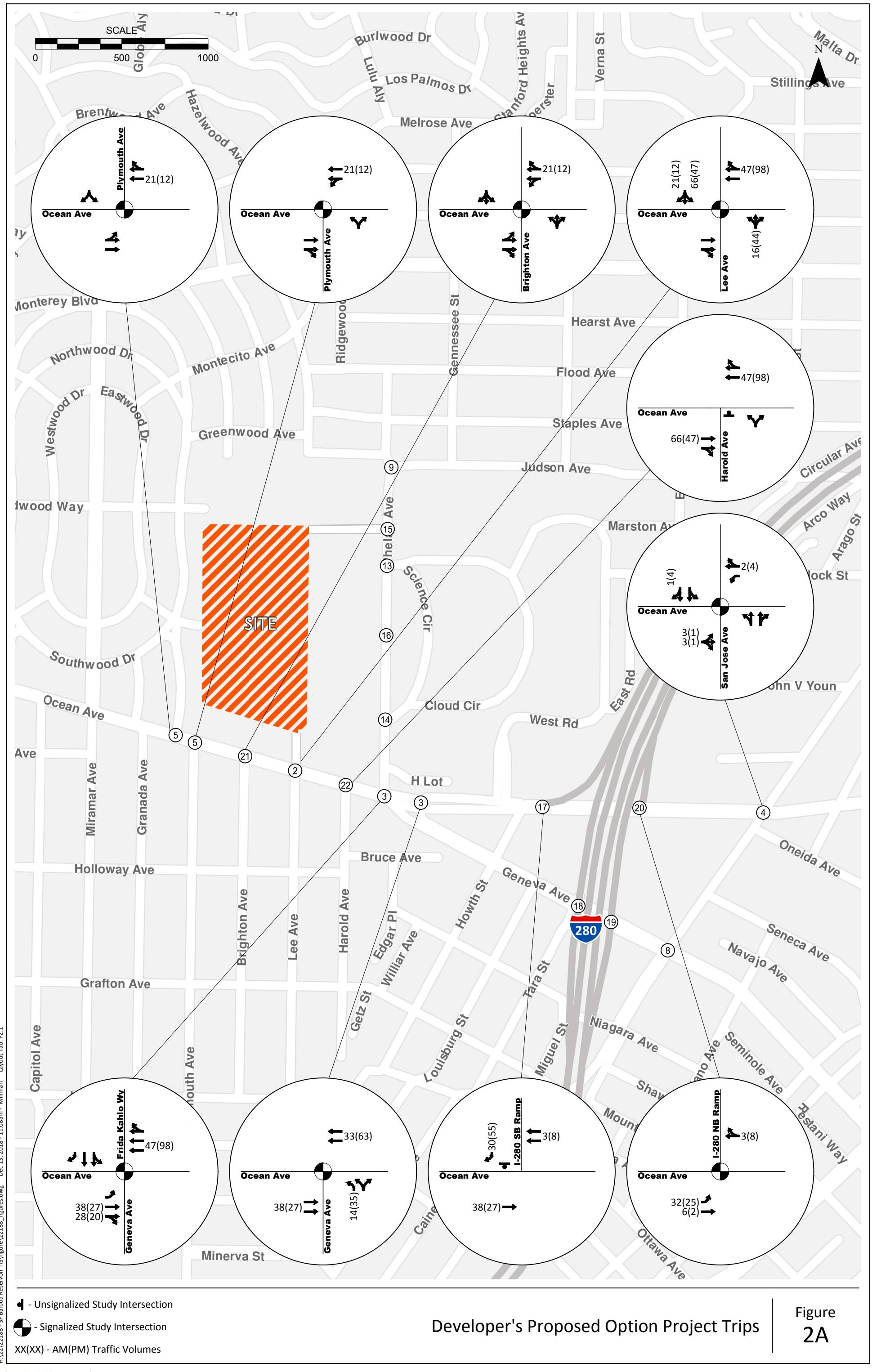


- - Unsigned Study Intersection
- - Signalized Study Intersection
- XX(XX) - AM(PM) Traffic Volumes

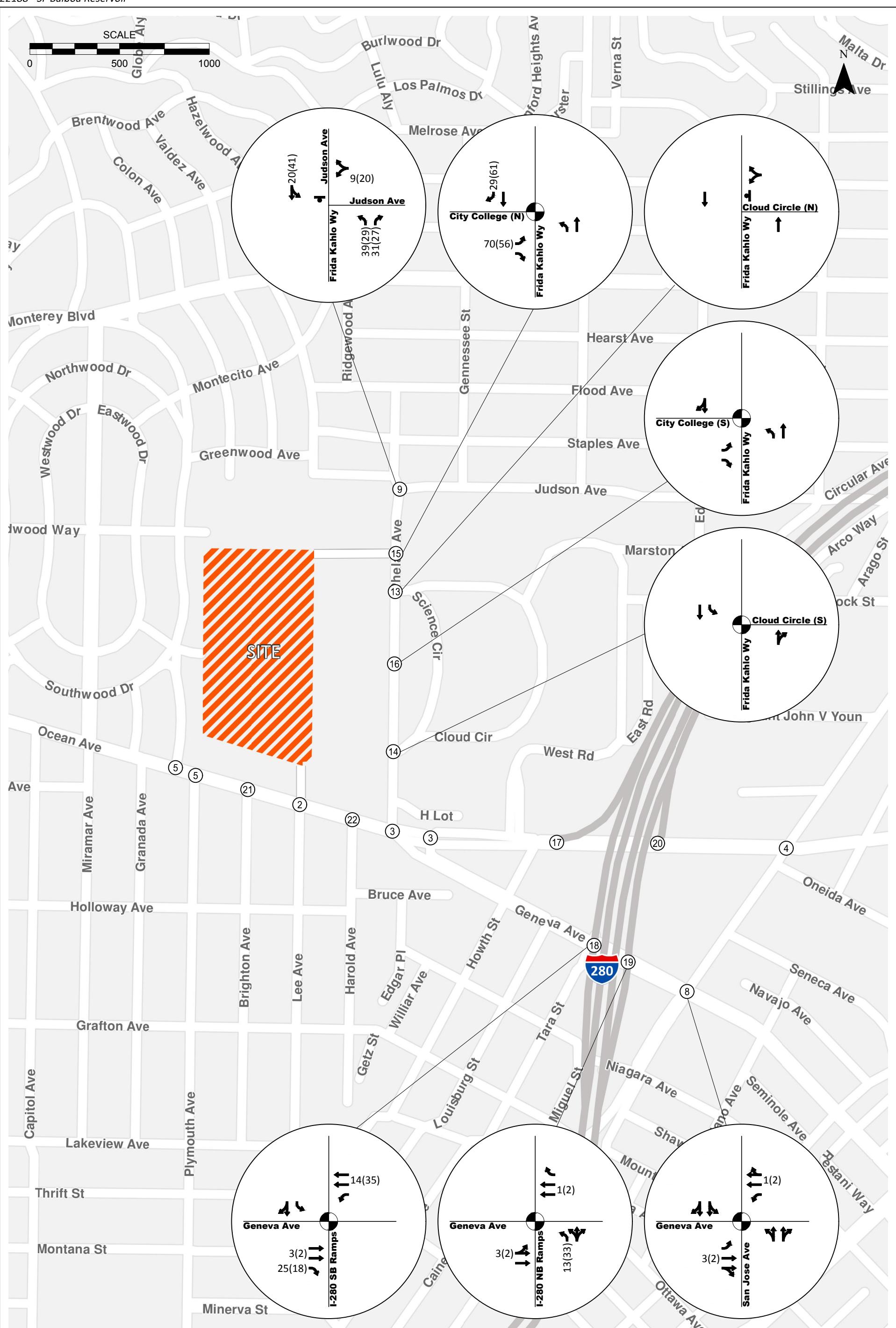
## Existing Traffic Volumes

# Figure 1A

Figure  
**1B**

Figure  
**2A**

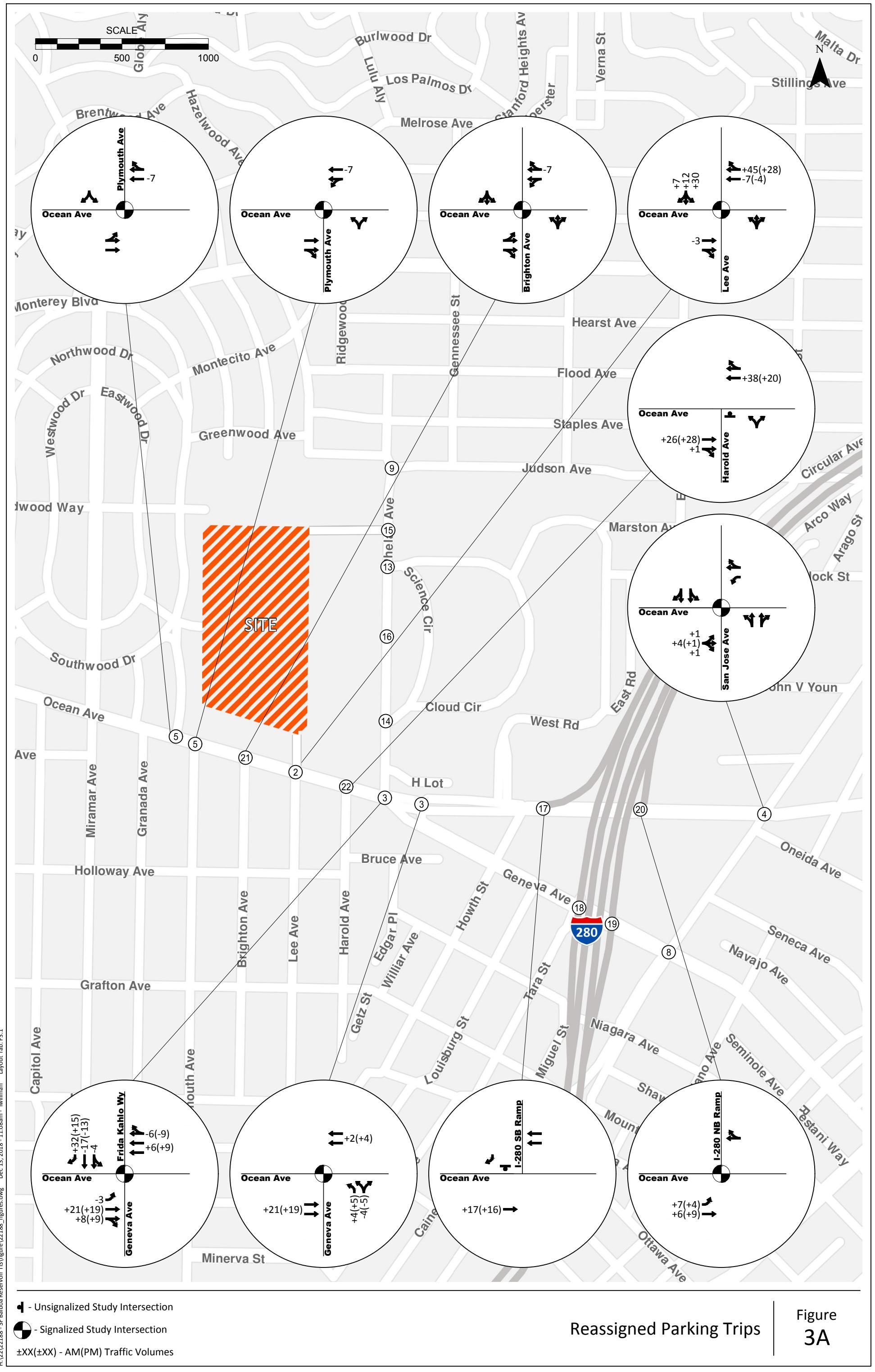
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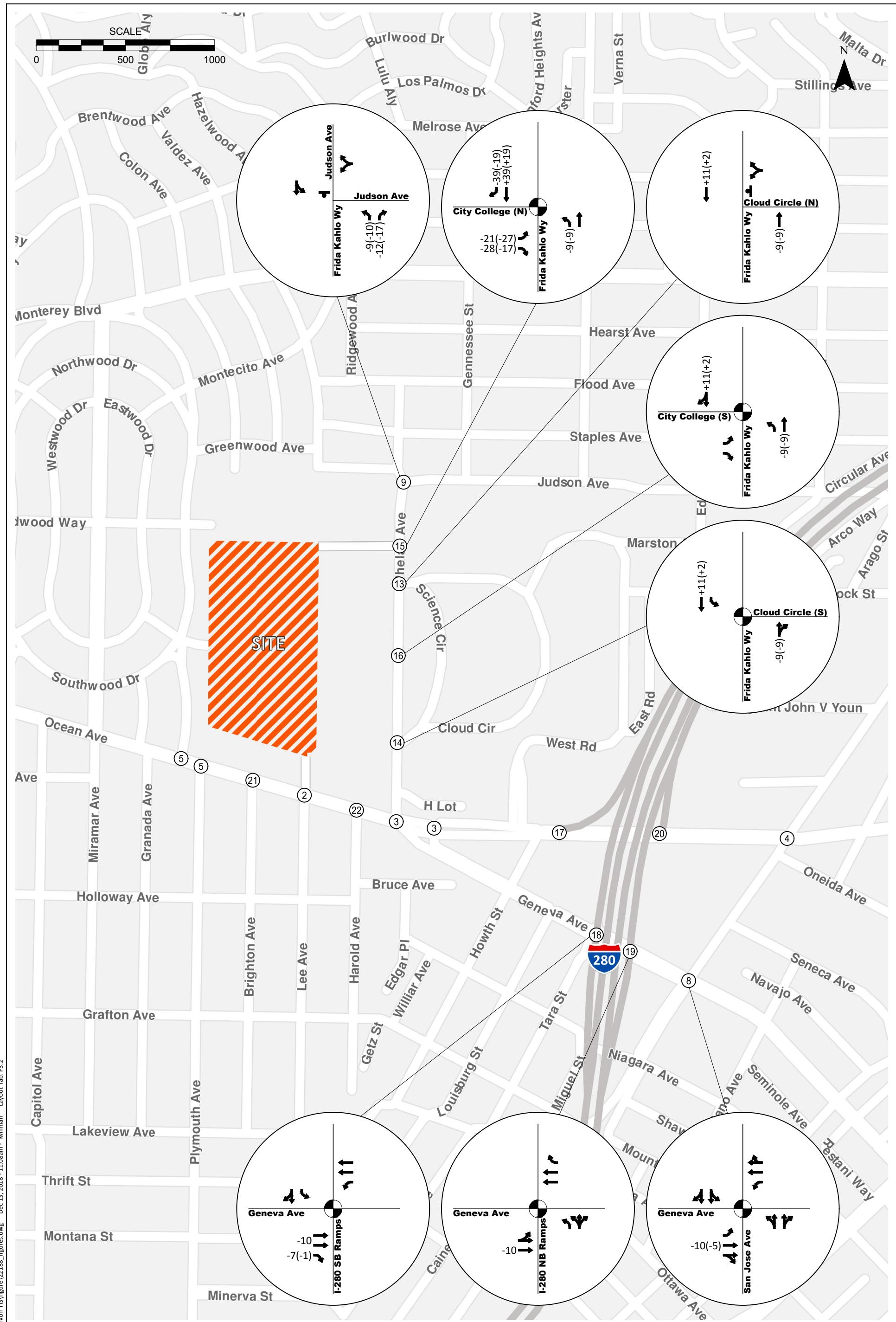


- Unsignalized Study Intersection
- Signalized Study Intersection
- XX(XX) - AM(PM) Traffic Volumes

## Developer's Proposed Option Project Trips

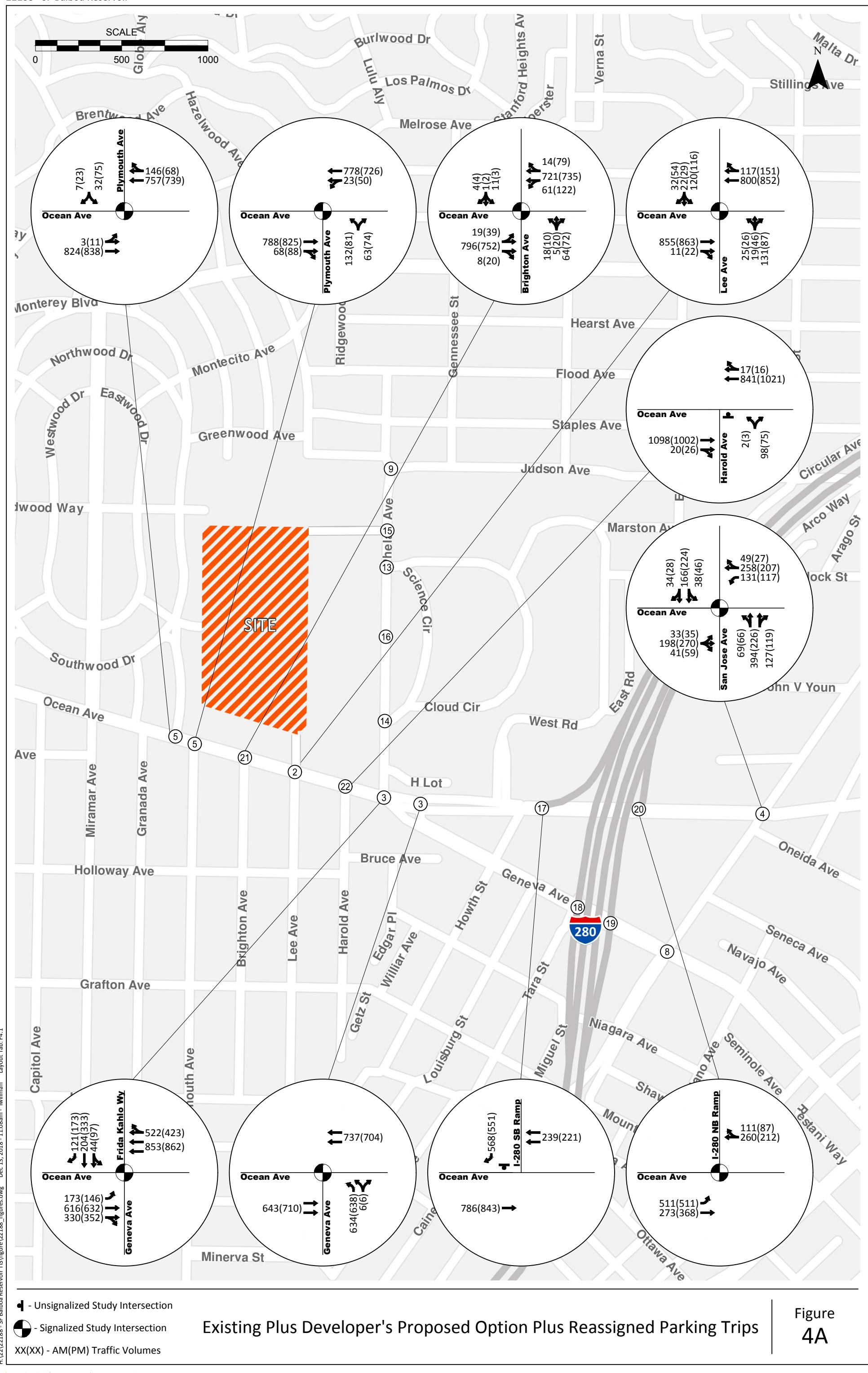
# Figure 2B

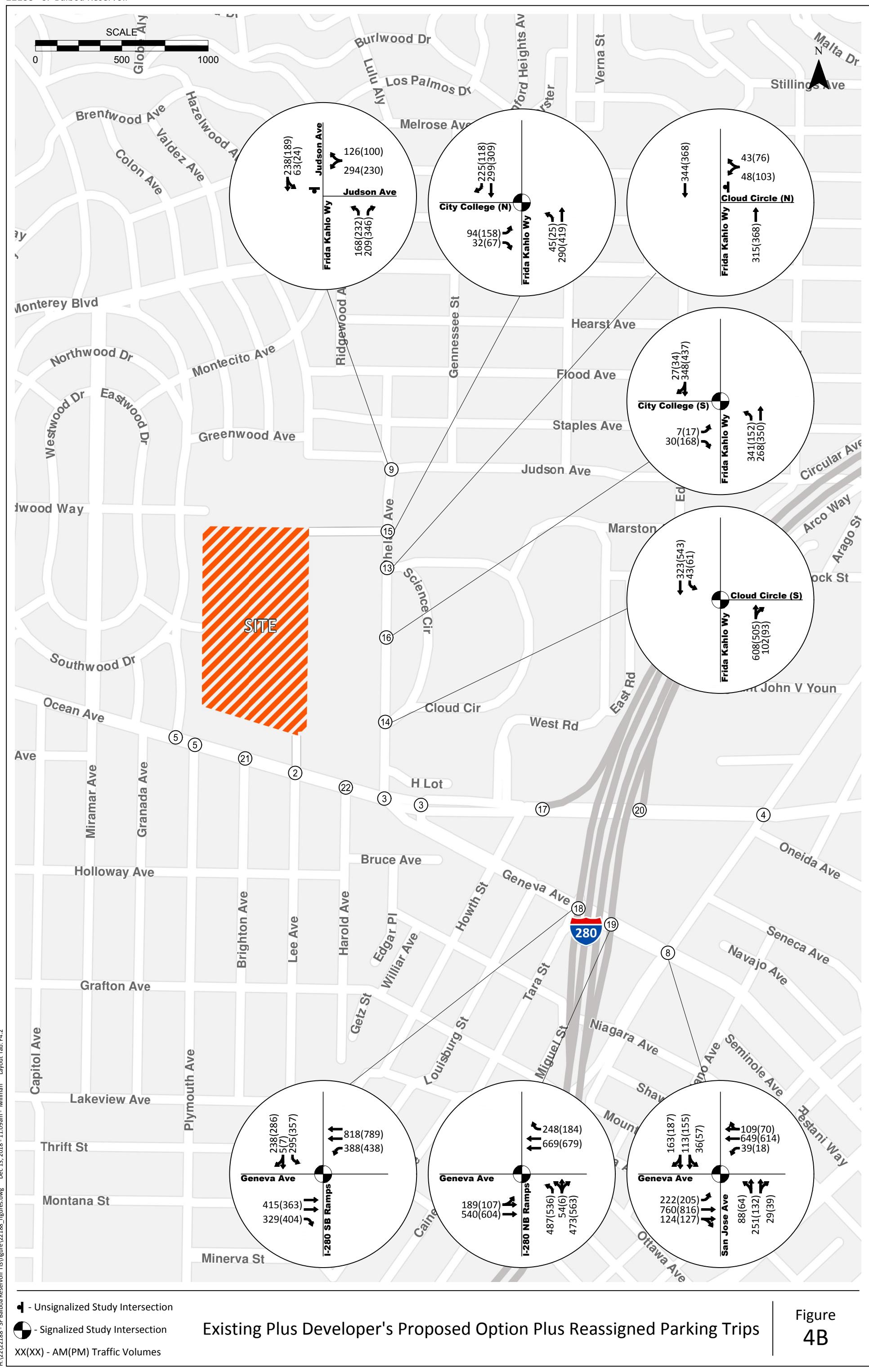


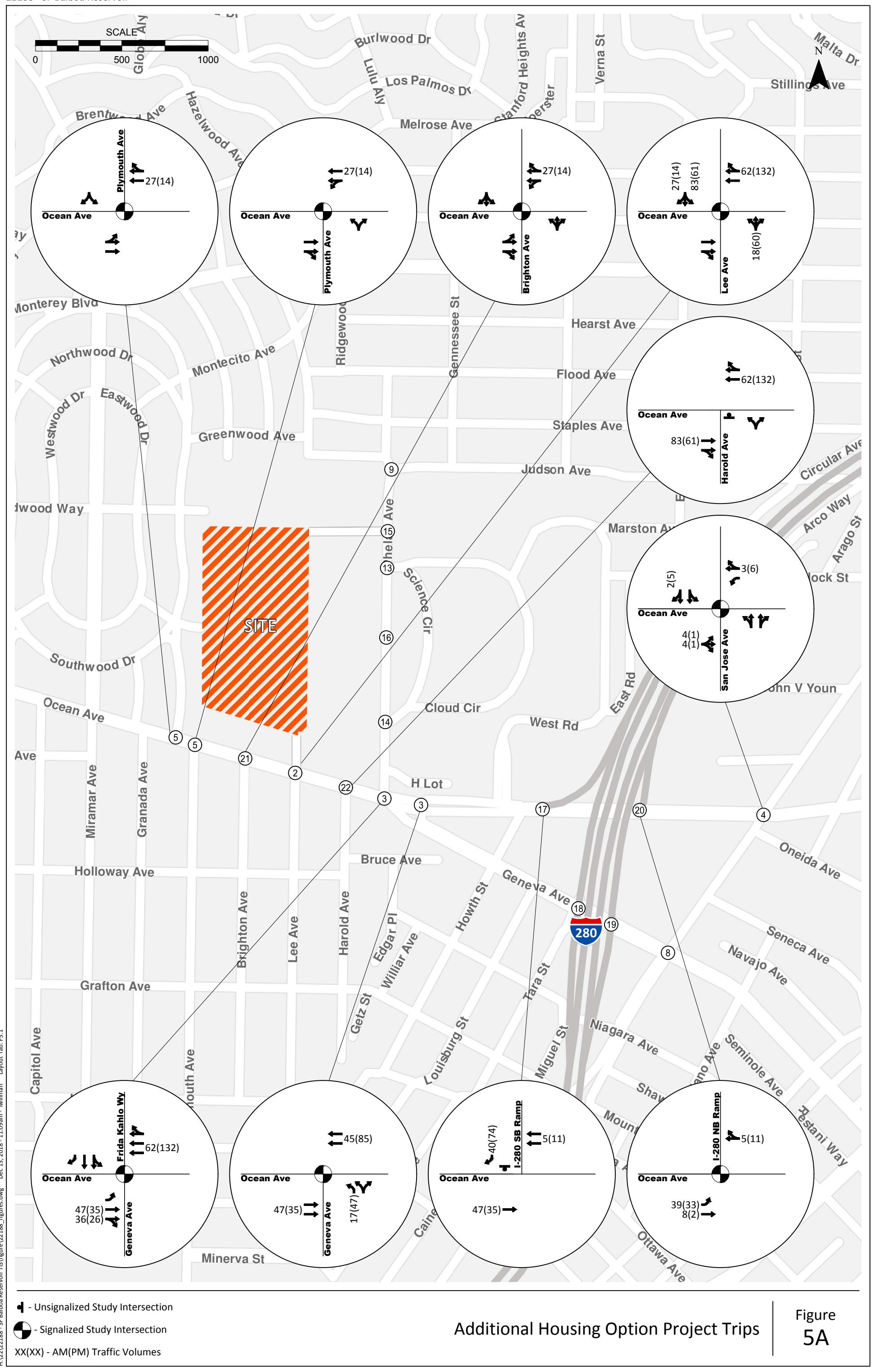


Reassigned Parking Trips

Figure  
3B

Figure  
4A





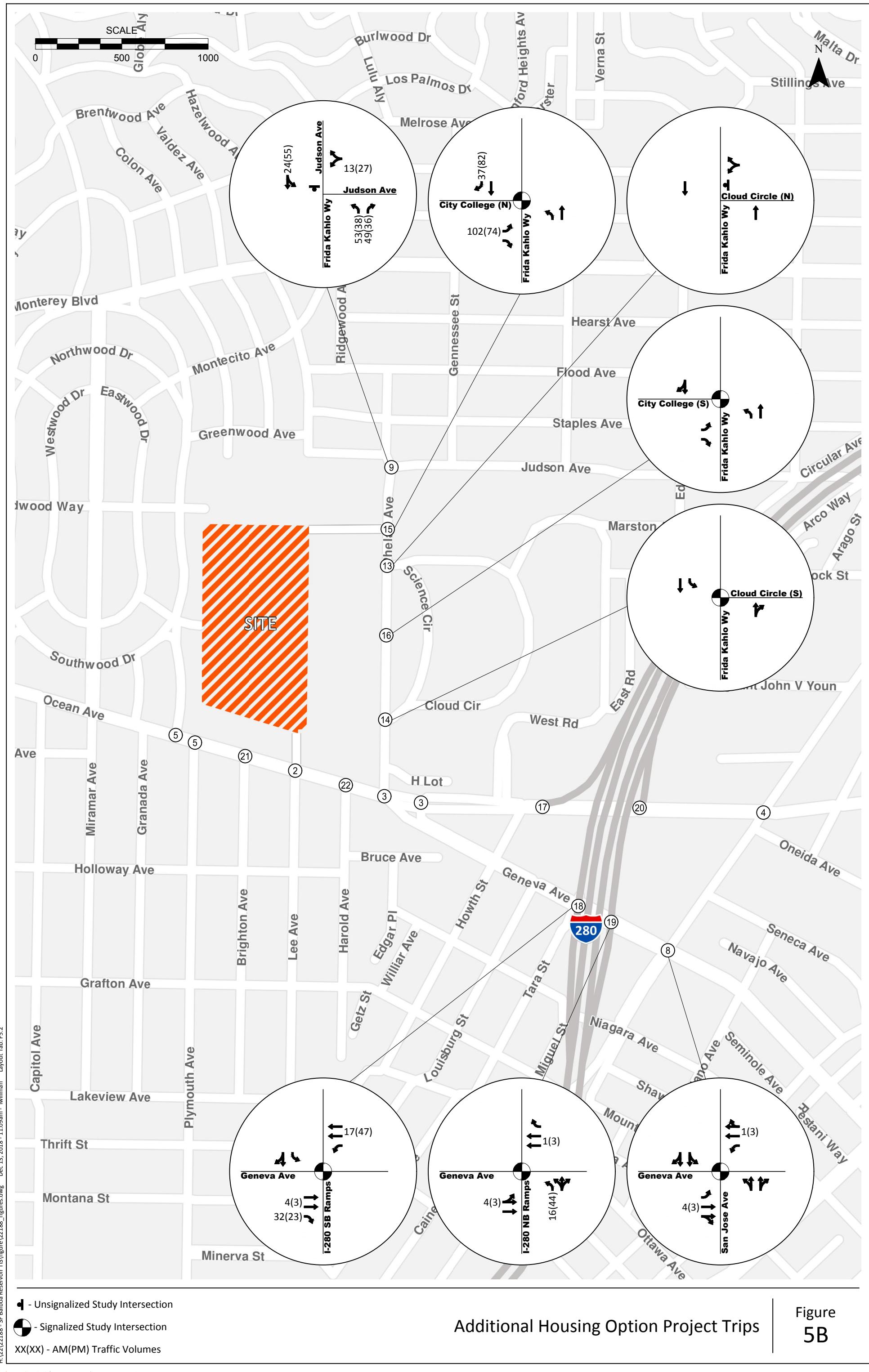
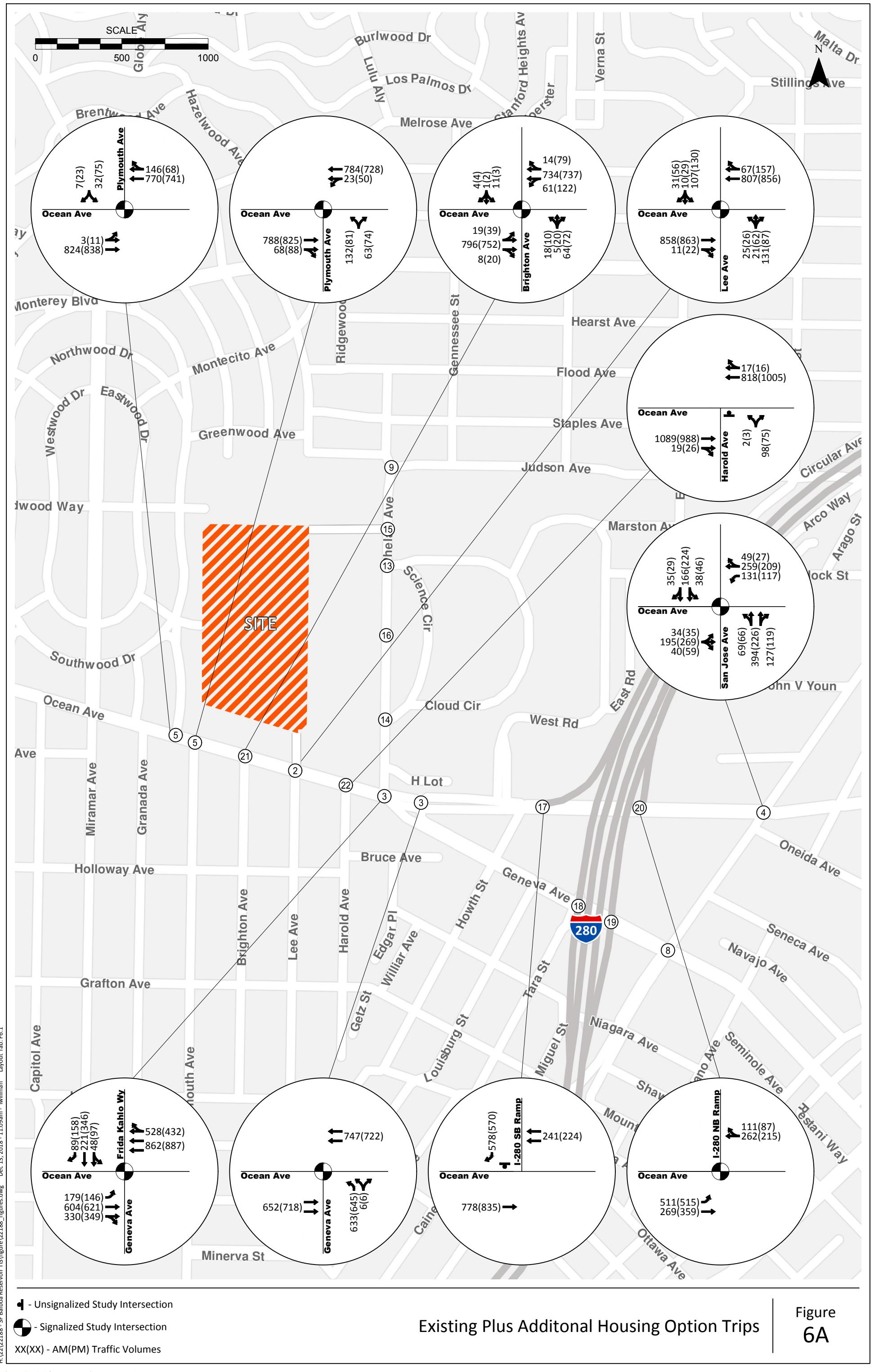


Figure 5B



Existing Plus Additional Housing Option Trips

Figure 6A

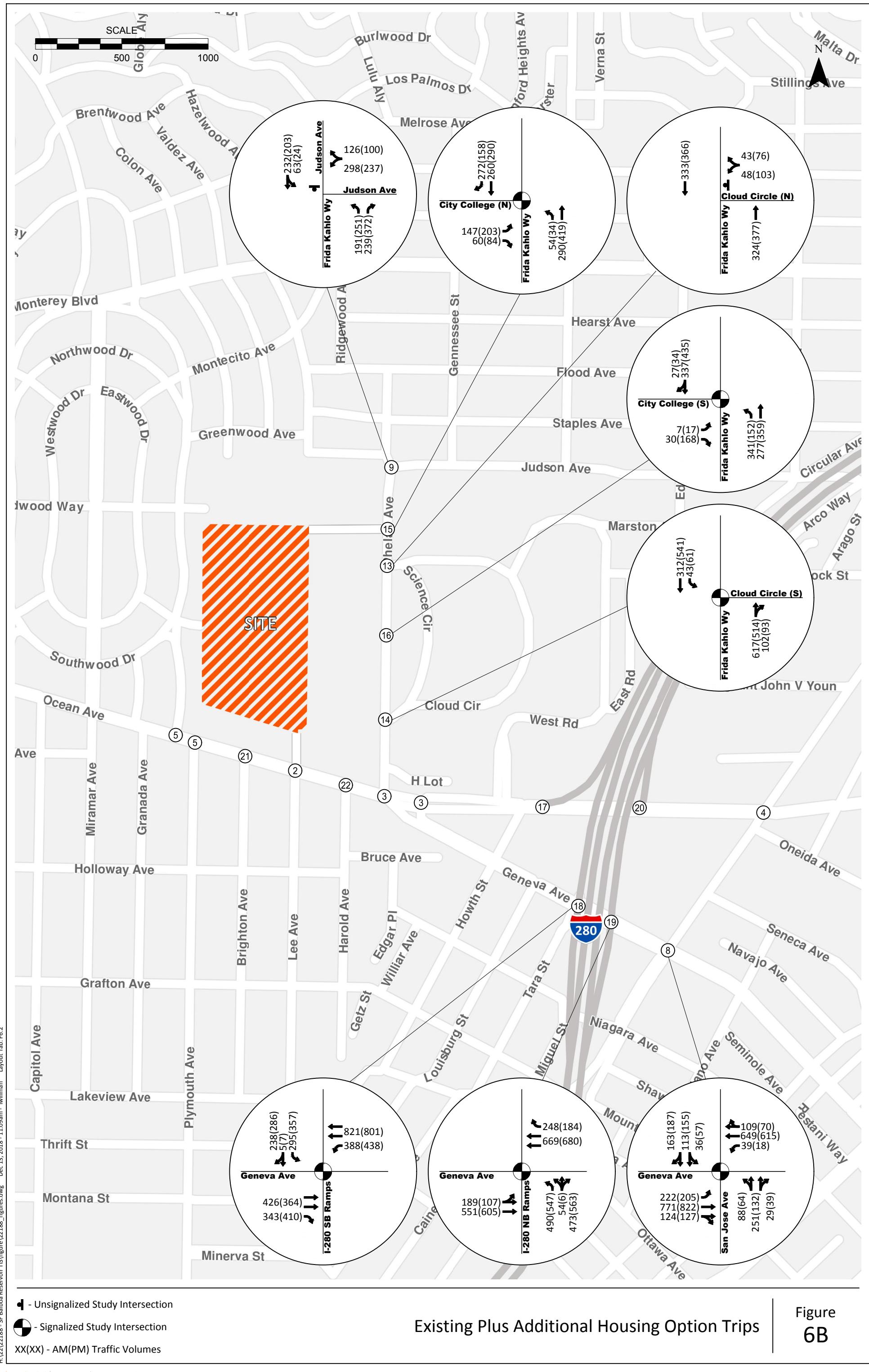


Figure 6B

## Attachment C – Corridor Delay Analysis Synchro Worksheets

**Measures of Effectiveness****Frida Kahlo Way**

Direction	NB	SB	All
Control Delay / Veh (s/v)	3	11	7
Total Delay / Veh (s/v)	3	12	8
Total Delay (hr)	1	6	8
Stops (#)	139	615	754
Average Speed (mph)	15	7	9
Total Travel Time (hr)	3	9	12
Distance Traveled (mi)	48	65	113
Unserved Vehicles (#)	0	0	0
Performance Index	1.7	8.0	9.7

**Geneva Ave**

Direction	EB	WB	All
Control Delay / Veh (s/v)	37	32	34
Total Delay / Veh (s/v)	70	48	57
Total Delay (hr)	50	47	97
Stops (#)	1799	2113	3912
Average Speed (mph)	3	3	3
Total Travel Time (hr)	57	53	110
Distance Traveled (mi)	160	171	331
Unserved Vehicles (#)	30	51	82
Performance Index	55.4	52.5	107.9

**Ocean Ave**

Direction	EB	WB	All
Control Delay / Veh (s/v)	9	21	15
Total Delay / Veh (s/v)	10	32	21
Total Delay (hr)	15	44	58
Stops (#)	1806	2761	4567
Average Speed (mph)	7	4	5
Total Travel Time (hr)	21	51	72
Distance Traveled (mi)	154	178	332
Unserved Vehicles (#)	0	6	6
Performance Index	19.8	51.2	71.0

**Measures of Effectiveness****Frida Kahlo Way**

Direction	NB	SB	All
Control Delay / Veh (s/v)	3	14	9
Total Delay / Veh (s/v)	3	25	15
Total Delay (hr)	2	17	18
Stops (#)	240	926	1166
Average Speed (mph)	14	4	6
Total Travel Time (hr)	4	20	24
Distance Traveled (mi)	60	80	140
Unserved Vehicles (#)	0	0	0
Performance Index	2.5	19.2	21.7

**Geneva Ave**

Direction	EB	WB	All
Control Delay / Veh (s/v)	33	24	28
Total Delay / Veh (s/v)	66	41	52
Total Delay (hr)	48	38	86
Stops (#)	1777	2040	3817
Average Speed (mph)	3	4	3
Total Travel Time (hr)	54	44	99
Distance Traveled (mi)	163	163	325
Unserved Vehicles (#)	13	0	13
Performance Index	52.9	43.6	96.6

**Ocean Ave**

Direction	EB	WB	All
Control Delay / Veh (s/v)	12	17	14
Total Delay / Veh (s/v)	13	33	22
Total Delay (hr)	27	47	74
Stops (#)	2814	2903	5717
Average Speed (mph)	6	3	4
Total Travel Time (hr)	35	54	89
Distance Traveled (mi)	208	176	384
Unserved Vehicles (#)	0	0	0
Performance Index	34.4	55.0	89.4

**Measures of Effectiveness****Frida Kahlo Way**

Direction	NB	SB	All
Control Delay / Veh (s/v)	8	11	9
Total Delay / Veh (s/v)	8	11	10
Total Delay (hr)	5	6	11
Stops (#)	498	633	1131
Average Speed (mph)	8	8	8
Total Travel Time (hr)	8	9	17
Distance Traveled (mi)	65	68	133
Unserved Vehicles (#)	0	0	0
Performance Index	6.5	8.1	14.6

**Geneva Ave**

Direction	EB	WB	All
Control Delay / Veh (s/v)	37	32	34
Total Delay / Veh (s/v)	70	48	57
Total Delay (hr)	50	47	98
Stops (#)	1784	2139	3923
Average Speed (mph)	3	3	3
Total Travel Time (hr)	57	54	111
Distance Traveled (mi)	161	174	335
Unserved Vehicles (#)	30	52	83
Performance Index	55.2	53.4	108.6

**Ocean Ave**

Direction	EB	WB	All
Control Delay / Veh (s/v)	11	24	16
Total Delay / Veh (s/v)	12	33	21
Total Delay (hr)	25	47	72
Stops (#)	2615	2833	5448
Average Speed (mph)	6	3	5
Total Travel Time (hr)	33	54	87
Distance Traveled (mi)	208	186	394
Unserved Vehicles (#)	0	56	56
Performance Index	31.9	54.8	86.7

**Measures of Effectiveness****Frida Kahlo Way**

Direction	NB	SB	All
Control Delay / Veh (s/v)	3	14	9
Total Delay / Veh (s/v)	3	24	15
Total Delay (hr)	2	17	19
Stops (#)	239	943	1182
Average Speed (mph)	14	4	6
Total Travel Time (hr)	4	20	24
Distance Traveled (mi)	61	83	143
Unserved Vehicles (#)	0	0	0
Performance Index	2.5	19.3	21.8

**Geneva Ave**

Direction	EB	WB	All
Control Delay / Veh (s/v)	33	25	28
Total Delay / Veh (s/v)	66	42	52
Total Delay (hr)	48	40	88
Stops (#)	1780	2114	3894
Average Speed (mph)	3	4	3
Total Travel Time (hr)	55	47	102
Distance Traveled (mi)	165	168	333
Unserved Vehicles (#)	13	0	13
Performance Index	53.2	46.0	99.2

**Ocean Ave**

Direction	EB	WB	All
Control Delay / Veh (s/v)	13	18	15
Total Delay / Veh (s/v)	15	39	25
Total Delay (hr)	32	58	90
Stops (#)	2894	2866	5760
Average Speed (mph)	5	3	4
Total Travel Time (hr)	40	65	106
Distance Traveled (mi)	215	187	402
Unserved Vehicles (#)	0	0	0
Performance Index	39.9	65.9	105.8

**Measures of Effectiveness****Frida Kahlo Way**

Direction	NB	SB	All
Control Delay / Veh (s/v)	3	11	7
Total Delay / Veh (s/v)	3	12	8
Total Delay (hr)	2	6	8
Stops (#)	155	646	801
Average Speed (mph)	15	7	9
Total Travel Time (hr)	4	9	13
Distance Traveled (mi)	52	67	119
Unserved Vehicles (#)	0	0	0
Performance Index	1.9	8.3	10.2

**Geneva Ave**

Direction	EB	WB	All
Control Delay / Veh (s/v)	38	32	35
Total Delay / Veh (s/v)	70	48	58
Total Delay (hr)	51	48	99
Stops (#)	1827	2143	3970
Average Speed (mph)	3	3	3
Total Travel Time (hr)	58	55	113
Distance Traveled (mi)	165	174	339
Unserved Vehicles (#)	30	52	83
Performance Index	56.4	53.6	110.1

**Ocean Ave**

Direction	EB	WB	All
Control Delay / Veh (s/v)	11	25	17
Total Delay / Veh (s/v)	12	32	21
Total Delay (hr)	24	46	71
Stops (#)	2614	2880	5494
Average Speed (mph)	6	3	5
Total Travel Time (hr)	33	54	86
Distance Traveled (mi)	208	185	392
Unserved Vehicles (#)	0	71	71
Performance Index	31.6	54.3	86.0

**Measures of Effectiveness****Frida Kahlo Way**

Direction	NB	SB	All
Control Delay / Veh (s/v)	4	14	9
Total Delay / Veh (s/v)	4	24	15
Total Delay (hr)	2	17	19
Stops (#)	259	953	1212
Average Speed (mph)	14	4	6
Total Travel Time (hr)	5	20	25
Distance Traveled (mi)	63	83	147
Unserved Vehicles (#)	0	0	0
Performance Index	2.9	19.4	22.3

**Geneva Ave**

Direction	EB	WB	All
Control Delay / Veh (s/v)	33	25	29
Total Delay / Veh (s/v)	66	42	53
Total Delay (hr)	49	41	89
Stops (#)	1792	2136	3928
Average Speed (mph)	3	4	3
Total Travel Time (hr)	55	47	102
Distance Traveled (mi)	166	169	336
Unserved Vehicles (#)	13	0	13
Performance Index	53.5	46.5	100.0

**Ocean Ave**

Direction	EB	WB	All
Control Delay / Veh (s/v)	12	22	17
Total Delay / Veh (s/v)	15	41	26
Total Delay (hr)	31	63	94
Stops (#)	2873	2958	5831
Average Speed (mph)	5	3	4
Total Travel Time (hr)	40	70	110
Distance Traveled (mi)	214	189	404
Unserved Vehicles (#)	0	32	32
Performance Index	39.1	71.1	110.2

## **Attachment D – Transit Reentry and Passenger Boarding Delay Analysis Calculations**

## Balboa Reservoir

### Transit Reentry Delay Analysis

		Existing hourly vehicle volume	Average re-entry delay	Existing plus Project vehicle traffic	Average re-entry delay	Project- added re- entry delay
Ocean Avenue	Eastbound	927	11	965	11	0
	Westbound	903	11	966	11	0
Frida Kahlo Way	Northbound	341	2	371	2	0
	Southbound	435	3	465	3	0
Geneva Avenue	Eastbound	819	9	819	9	0
	Westbound	668	5	686	5	0

Notes:

Hourly vehicle volume selected for peak hour with highest vehicle volume

Adjacent Lane Mixed (vehicles)	Average Re- Entry Delay (seconds)
100	0
200	1
300	2
400	3
500	4
600	5
700	7
800	9
900	11
1000	14

Source: 2000 HCM; SFMTA Appendix C.

Balboa Reservoir

## Passenger Boarding Delay

## Passenger Boarding Delay Analysis

2

Route by Direction	Project-Generated Transit Riders				Buses per Hour	Passenger Boarding Delay (seconds)				Passenger Boarding Delay (seconds per bus)				
	Developer's Proposed Option		Additional Housing Option			Developer's Proposed Option	Additional Housing Option		Developer's Proposed Option	Additional Housing Option		Additional Housing Option		
	AM	PM	AM	PM		AM	PM	AM	PM	AM	PM	AM	PM	
<b>Northbound</b>														
8 Bayshore		3		3		8.0		0	6	0	6		0.8	
28R 19th Avenue Rapid	8		8		6.0		16	0	16	0	2.7		2.7	
43 Masonic	4	12	8	20	9.0	6.0	8	24	16	40	0.9	4.0	1.8	
49 Van Ness/Mission	8	10	5	12	9.0	9.0	16	20	10	24	1.8	2.2	1.1	
K Ingleside	12	10	15	17	7.5	7.5	24	20	30	34	3.2	2.7	4.0	
<i>Subtotal</i>	32	35	36	52			64	70	72	104				
<b>Southbound</b>														
8 Bayshore	6		3		8.0		12	0	6	0	1.5		0.8	
28R 19th Avenue Rapid	6		15		6.0		12	0	30	0	2.0		5.0	
43 Masonic	30	37	36	42	9.0	9.0	60	74	72	84	6.7	8.3	8.0	
49 Van Ness/Mission	3	16	8	17	9.0	8.0	6	32	16	34	0.7	4.0	1.8	
K Ingleside	14	24	21	33	7.5	7.5	28	48	42	66	3.7	6.4	5.6	
<i>Subtotal</i>	59	77	83	92			118	154	166	184				
<b>Eastbound</b>														
23 Monterey	2	2	5	7	3.0	3.0	4	4	10	14	1.3	1.3	3.3	
29 Sunset	12	8	10	12	6.0	5.0	24	16	20	24	4.0	3.2	3.3	
54 Felton	6	6	7	6	3.0	3.0	12	12	14	12	4.0	4.0	4.7	
<i>Subtotal</i>	20	16	22	25			40	32	44	50				
<b>Westbound</b>														
23 Monterey	0	2	3	5	3.0	3.0	0	4	6	10	0.0	1.3	2.0	
29 Sunset	2	7	3	10	7.0	6.0	4	14	6	20	0.6	2.3	0.9	
54 Felton	1	3	3	3	3.0	3.0	2	6	6	6	0.7	2.0	2.0	
<i>Subtotal</i>	3	12	9	18			6	24	18	36				
<i>Total</i>	114	140	150	187	95.8	77.9	228	280	300	374	2.4	3.6	3.1	

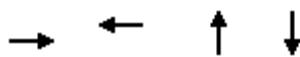
## **Attachment E – Queue Analysis Synchro Worksheets**

## Queues

## 2. Lee Avenue and Ocean Avenue

Existing AM

12/13/2018



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	915	875	167	40
v/c Ratio	0.57	0.55	0.57	0.15
Control Delay	6.3	14.6	20.7	24.1
Queue Delay	0.3	5.5	0.3	0.0
Total Delay	6.6	20.1	21.1	24.1
Queue Length 50th (ft)	82	226	29	14
Queue Length 95th (ft)	41	m236	94	40
Internal Link Dist (ft)	104	89	248	25
Turn Bay Length (ft)				
Base Capacity (vph)	1617	1599	294	265
Starvation Cap Reductn	223	652	0	0
Spillback Cap Reductn	37	0	11	9
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.66	0.92	0.59	0.16

## Intersection Summary

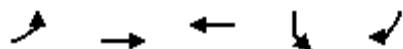
m Volume for 95th percentile queue is metered by upstream signal.

## Queues

Existing AM

## 3. Ocean Avenue and Frida Kahlo Way and Geneva Avenue

12/13/2018



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	188	895	1398	284	94
v/c Ratio	0.85	0.71	1.01	0.32	0.18
Control Delay	54.7	21.5	50.3	22.3	0.7
Queue Delay	0.0	3.3	35.6	6.8	1.2
Total Delay	54.7	24.9	85.9	29.0	1.9
Queue Length 50th (ft)	84	209	~120	55	0
Queue Length 95th (ft)	#201	264	#313	87	0
Internal Link Dist (ft)		57	72	94	
Turn Bay Length (ft)				100	100
Base Capacity (vph)	221	1262	1391	888	528
Starvation Cap Reductn	0	265	321	546	285
Spillback Cap Reductn	0	0	88	0	42
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.85	0.90	1.31	0.83	0.39

## Intersection Summary

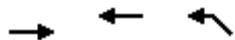
- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

## Queues

Existing AM

12/13/2018

## 3. Ocean Avenue and Frida Kahlo Way and Geneva Avenue



Lane Group	EBT	WBT	NWL
Lane Group Flow (vph)	637	739	654
v/c Ratio	0.42	0.52	0.75
Control Delay	4.4	16.9	30.9
Queue Delay	0.9	0.0	55.0
Total Delay	5.3	16.9	85.9
Queue Length 50th (ft)	28	132	149
Queue Length 95th (ft)	32	182	210
Internal Link Dist (ft)	72	214	504
Turn Bay Length (ft)			
Base Capacity (vph)	1504	1409	876
Starvation Cap Reductn	556	0	0
Spillback Cap Reductn	0	0	476
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.67	0.52	1.64

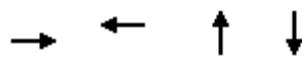
Intersection Summary

## Queues

## 2. Lee Avenue and Ocean Avenue

Existing PM

12/13/2018



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	931	927	121	148
v/c Ratio	0.58	0.58	0.43	0.55
Control Delay	6.7	15.6	14.9	30.9
Queue Delay	0.4	4.3	0.4	0.9
Total Delay	7.1	19.9	15.3	31.8
Queue Length 50th (ft)	88	241	13	53
Queue Length 95th (ft)	52	m281	60	114
Internal Link Dist (ft)	104	89	248	25
Turn Bay Length (ft)				
Base Capacity (vph)	1603	1596	279	270
Starvation Cap Reductn	249	577	0	0
Spillback Cap Reductn	57	184	24	25
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.69	0.91	0.47	0.60

## Intersection Summary

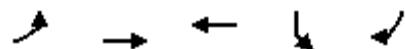
m Volume for 95th percentile queue is metered by upstream signal.

## Queues

Existing PM

## 3. Ocean Avenue and Frida Kahlo Way and Geneva Avenue

12/13/2018



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	154	957	1250	466	166
v/c Ratio	0.76	0.76	0.89	0.50	0.32
Control Delay	47.5	24.6	33.5	24.7	3.2
Queue Delay	0.0	6.2	47.3	56.5	1.7
Total Delay	47.5	30.8	80.8	81.2	5.0
Queue Length 50th (ft)	68	227	110	96	0
Queue Length 95th (ft)	#169	290	#175	141	24
Internal Link Dist (ft)		57	72	94	
Turn Bay Length (ft)				100	100
Base Capacity (vph)	202	1253	1406	933	518
Starvation Cap Reductn	0	245	381	547	219
Spillback Cap Reductn	0	8	127	0	103
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.76	0.95	1.22	1.21	0.56

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

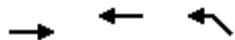
Queue shown is maximum after two cycles.

## Queues

Existing PM

12/13/2018

## 3. Ocean Avenue and Frida Kahlo Way and Geneva Avenue



Lane Group	EBT	WBT	NWL
Lane Group Flow (vph)	719	671	635
v/c Ratio	0.48	0.48	0.72
Control Delay	5.6	16.2	30.1
Queue Delay	1.6	0.0	55.0
Total Delay	7.2	16.2	85.0
Queue Length 50th (ft)	41	116	143
Queue Length 95th (ft)	50	162	203
Internal Link Dist (ft)	72	214	504
Turn Bay Length (ft)			
Base Capacity (vph)	1504	1409	876
Starvation Cap Reductn	569	0	0
Spillback Cap Reductn	0	0	467
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.77	0.48	1.55

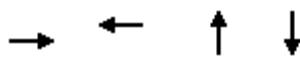
Intersection Summary

## Queues

## 2. Lee Avenue and Ocean Avenue

Existing Plus Developer's Option AM

12/13/2018



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	912	965	184	183
v/c Ratio	0.56	0.64	0.61	0.83
Control Delay	6.3	16.1	22.9	58.7
Queue Delay	0.3	12.5	0.4	2.5
Total Delay	6.6	28.6	23.3	61.1
Queue Length 50th (ft)	82	250	36	81
Queue Length 95th (ft)	40	m253	107	#195
Internal Link Dist (ft)	104	89	248	25
Turn Bay Length (ft)				
Base Capacity (vph)	1617	1505	302	221
Starvation Cap Reductn	226	528	0	0
Spillback Cap Reductn	52	0	12	8
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.66	0.99	0.63	0.86

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

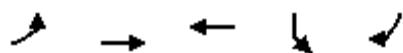
m Volume for 95th percentile queue is metered by upstream signal.

## Queues

Existing Plus Developer's Option AM

## 3. Ocean Avenue and Frida Kahlo Way and Geneva Avenue

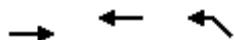
12/13/2018



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	182	995	1447	261	127
v/c Ratio	0.82	0.79	1.04	0.29	0.24
Control Delay	52.5	22.8	60.6	22.0	1.5
Queue Delay	0.0	6.9	23.9	5.0	1.4
Total Delay	52.5	29.7	84.5	26.9	2.8
Queue Length 50th (ft)	83	217	~135	50	0
Queue Length 95th (ft)	m#188	284	#349	80	5
Internal Link Dist (ft)		57	72	94	
Turn Bay Length (ft)				100	100
Base Capacity (vph)	221	1263	1388	888	528
Starvation Cap Reductn	0	226	326	551	254
Spillback Cap Reductn	0	0	150	0	144
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.82	0.96	1.36	0.77	0.46

## Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	WBT	NWL
Lane Group Flow (vph)	677	776	673
v/c Ratio	0.45	0.55	0.77
Control Delay	3.9	17.4	31.9
Queue Delay	1.3	0.0	55.2
Total Delay	5.2	17.4	87.1
Queue Length 50th (ft)	26	141	155
Queue Length 95th (ft)	m30	194	218
Internal Link Dist (ft)	72	214	504
Turn Bay Length (ft)			
Base Capacity (vph)	1504	1409	876
Starvation Cap Reductn	578	0	0
Spillback Cap Reductn	0	0	494
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.73	0.55	1.76

Intersection Summary

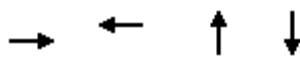
m Volume for 95th percentile queue is metered by upstream signal.

## Queues

## 2. Lee Avenue and Ocean Avenue

Existing Plus Developer's Option PM

12/13/2018



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	931	1056	167	210
v/c Ratio	0.58	0.72	0.56	0.88
Control Delay	6.7	18.3	23.8	62.6
Queue Delay	0.4	24.2	1.3	22.4
Total Delay	7.1	42.5	25.2	85.1
Queue Length 50th (ft)	88	280	40	91
Queue Length 95th (ft)	52	m304	105	#218
Internal Link Dist (ft)	104	89	248	25
Turn Bay Length (ft)				
Base Capacity (vph)	1603	1457	297	240
Starvation Cap Reductn	249	436	0	0
Spillback Cap Reductn	71	50	37	31
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.69	1.03	0.64	1.00

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

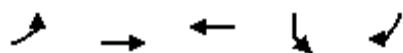
m Volume for 95th percentile queue is metered by upstream signal.

## Queues

Existing Plus Developer's Option PM

## 3. Ocean Avenue and Frida Kahlo Way and Geneva Avenue

12/13/2018



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	154	1036	1352	453	182
v/c Ratio	0.76	0.83	0.96	0.49	0.35
Control Delay	48.0	26.2	41.4	24.4	4.3
Queue Delay	0.0	18.4	43.1	56.7	1.9
Total Delay	48.0	44.6	84.4	81.1	6.1
Queue Length 50th (ft)	68	234	120	93	0
Queue Length 95th (ft)	m#160	m308	#265	136	32
Internal Link Dist (ft)		57	72	94	
Turn Bay Length (ft)				100	100
Base Capacity (vph)	202	1255	1404	933	518
Starvation Cap Reductn	0	238	360	550	208
Spillback Cap Reductn	0	7	284	0	147
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.76	1.02	1.30	1.18	0.59

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	WBT	NWL
Lane Group Flow (vph)	747	741	678
v/c Ratio	0.50	0.53	0.77
Control Delay	5.4	17.0	32.2
Queue Delay	2.2	0.0	55.3
Total Delay	7.6	17.0	87.5
Queue Length 50th (ft)	41	132	156
Queue Length 95th (ft)	m47	183	220
Internal Link Dist (ft)	72	214	504
Turn Bay Length (ft)			
Base Capacity (vph)	1504	1409	876
Starvation Cap Reductn	592	0	0
Spillback Cap Reductn	0	0	499
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.82	0.53	1.80

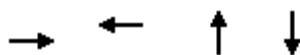
#### Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues  
2. Lee Avenue and Ocean Avenue

Existing Plus Additional Housing Option AM

12/13/2018



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	915	920	186	157
v/c Ratio	0.57	0.59	0.62	0.72
Control Delay	6.3	15.2	23.4	46.6
Queue Delay	0.3	11.3	0.4	1.1
Total Delay	6.7	26.6	23.8	47.7
Queue Length 50th (ft)	82	242	37	65
Queue Length 95th (ft)	41	m239	108	#161
Internal Link Dist (ft)	104	89	248	25
Turn Bay Length (ft)				
Base Capacity (vph)	1617	1551	302	217
Starvation Cap Reductn	224	611	0	0
Spillback Cap Reductn	50	0	12	8
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.66	0.98	0.64	0.75

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

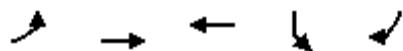
m Volume for 95th percentile queue is metered by upstream signal.

## Queues

Existing Plus Additional Housing Option AM

## 3. Ocean Avenue and Frida Kahlo Way and Geneva Avenue

12/13/2018



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	188	983	1463	284	94
v/c Ratio	0.85	0.78	1.05	0.32	0.18
Control Delay	56.1	22.4	64.2	22.3	0.7
Queue Delay	0.0	5.4	19.6	6.8	1.2
Total Delay	56.1	27.8	83.8	29.0	1.9
Queue Length 50th (ft)	86	214	~153	55	0
Queue Length 95th (ft)	m#200	281	#357	87	0
Internal Link Dist (ft)		57	72	94	
Turn Bay Length (ft)				100	100
Base Capacity (vph)	221	1265	1388	888	528
Starvation Cap Reductn	0	224	322	546	285
Spillback Cap Reductn	0	0	126	0	128
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.85	0.94	1.37	0.83	0.39

## Intersection Summary

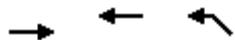
- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

## Queues

Existing Plus Additional Housing Option AM

## 3. Ocean Avenue and Frida Kahlo Way and Geneva Avenue

12/13/2018



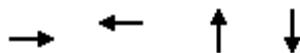
Lane Group	EBT	WBT	NWL
Lane Group Flow (vph)	686	786	672
v/c Ratio	0.46	0.56	0.77
Control Delay	4.2	17.5	31.8
Queue Delay	1.3	0.0	55.2
Total Delay	5.5	17.5	87.1
Queue Length 50th (ft)	28	143	154
Queue Length 95th (ft)	33	197	218
Internal Link Dist (ft)	72	214	504
Turn Bay Length (ft)			
Base Capacity (vph)	1504	1409	876
Starvation Cap Reductn	568	0	0
Spillback Cap Reductn	0	0	494
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.73	0.56	1.76

Intersection Summary

Queues  
2. Lee Avenue and Ocean Avenue

Existing Plus Additional Housing Option PM

12/13/2018



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	931	1066	184	227
v/c Ratio	0.58	0.73	0.63	0.99
Control Delay	6.7	18.1	29.1	87.7
Queue Delay	0.4	32.9	1.5	35.5
Total Delay	7.1	51.0	30.6	123.1
Queue Length 50th (ft)	88	284	55	104
Queue Length 95th (ft)	52	m289	#131	#247
Internal Link Dist (ft)	104	89	248	25
Turn Bay Length (ft)				
Base Capacity (vph)	1603	1453	294	230
Starvation Cap Reductn	247	446	0	0
Spillback Cap Reductn	68	55	29	24
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.69	1.06	0.69	1.10

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

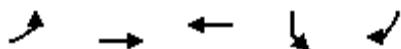
m Volume for 95th percentile queue is metered by upstream signal.

## Queues

Existing Plus Additional Housing Option PM

## 3. Ocean Avenue and Frida Kahlo Way and Geneva Avenue

12/13/2018



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	154	1021	1439	466	166
v/c Ratio	0.76	0.82	1.02	0.50	0.32
Control Delay	48.2	25.5	55.0	24.7	3.2
Queue Delay	0.0	17.2	30.1	56.5	1.7
Total Delay	48.2	42.7	85.1	81.2	5.0
Queue Length 50th (ft)	70	230	~136	96	0
Queue Length 95th (ft)	m#156	m296	#345	141	24
Internal Link Dist (ft)		57	72	94	
Turn Bay Length (ft)				100	100
Base Capacity (vph)	202	1251	1405	933	518
Starvation Cap Reductn	0	244	323	547	219
Spillback Cap Reductn	0	8	280	0	148
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.76	1.01	1.33	1.21	0.56

## Intersection Summary

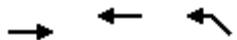
- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

## Queues

Existing Plus Additional Housing Option PM

## 3. Ocean Avenue and Frida Kahlo Way and Geneva Avenue

12/13/2018



Lane Group	EBT	WBT	NWL
Lane Group Flow (vph)	756	760	685
v/c Ratio	0.50	0.54	0.78
Control Delay	5.4	17.2	32.6
Queue Delay	2.1	0.0	55.4
Total Delay	7.5	17.2	88.0
Queue Length 50th (ft)	41	136	158
Queue Length 95th (ft)	m48	189	#223
Internal Link Dist (ft)	72	214	504
Turn Bay Length (ft)			
Base Capacity (vph)	1504	1409	876
Starvation Cap Reductn	574	0	0
Spillback Cap Reductn	0	0	507
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.81	0.54	1.86

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

## **Attachment F – Ocean Avenue/Lee Avenue Synchro Worksheets**

# HCM Signalized Intersection Capacity Analysis

1: Lee Avenue & Ocean Avenue

Existing AM SBTR

03/01/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	858	11	0	807	25	25	3	131	24	10	4
Future Volume (vph)	0	858	11	0	807	25	25	3	131	24	10	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0			6.0		6.0	6.0	
Lane Util. Factor		0.95			0.95			1.00		1.00	1.00	
Frpb, ped/bikes		0.99			0.98			0.89		1.00	0.96	
Flpb, ped/bikes		1.00			1.00			0.98		0.93	1.00	
Fr <sub>t</sub>		1.00			1.00			0.89		1.00	0.96	
Flt Protected		1.00			1.00			0.99		0.95	1.00	
Satd. Flow (prot)		2873			2838			1094		1434	1492	
Flt Permitted		1.00			1.00			0.96		0.63	1.00	
Satd. Flow (perm)		2873			2838			1053		946	1492	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	903	12	0	849	26	26	3	138	25	11	4
RTOR Reduction (vph)	0	1	0	0	3	0	0	77	0	0	3	0
Lane Group Flow (vph)	0	914	0	0	872	0	0	90	0	25	12	0
Confl. Peds. (#/hr)	214		168	168		214	91		73	73		91
Confl. Bikes (#/hr)			10			30			30			30
Bus Blockages (#/hr)	0	5	0	0	5	0	0	0	0	0	0	0
Parking (#/hr)		0			0			5				
Turn Type		NA			NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases								8			4	
Actuated Green, G (s)	45.0			45.0			19.0		19.0	19.0		
Effective Green, g (s)	45.0			45.0			19.0		19.0	19.0		
Actuated g/C Ratio	0.56			0.56			0.24		0.24	0.24		
Clearance Time (s)	6.0			6.0			6.0		6.0	6.0		
Vehicle Extension (s)	0.2			0.2			0.2		0.2	0.2		
Lane Grp Cap (vph)	1616			1596			250		224	354		
v/s Ratio Prot	c0.32			0.31						0.01		
v/s Ratio Perm							c0.09		0.03			
v/c Ratio	0.57			0.55			0.36		0.11	0.03		
Uniform Delay, d1	11.2			11.1			25.4		23.9	23.4		
Progression Factor	1.00			1.00			1.00		1.00	1.00		
Incremental Delay, d2	1.4			1.4			4.0		1.0	0.2		
Delay (s)	12.7			12.4			29.4		24.9	23.6		
Level of Service	B			B			C		C	C		
Approach Delay (s)	12.7			12.4			29.4			24.4		
Approach LOS	B			B			C			C		
<b>Intersection Summary</b>												
HCM 2000 Control Delay	14.2			HCM 2000 Level of Service			B					
HCM 2000 Volume to Capacity ratio	0.49											
Actuated Cycle Length (s)	80.0			Sum of lost time (s)			14.0					
Intersection Capacity Utilization	58.4%			ICU Level of Service			B					
Analysis Period (min)	15											
c Critical Lane Group												

# HCM Signalized Intersection Capacity Analysis

1: Lee Avenue & Ocean Avenue

Existing PM SBTR

03/01/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	863	22	0	856	25	26	2	87	69	29	42
Future Volume (vph)	0	863	22	0	856	25	26	2	87	69	29	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0			6.0		6.0	6.0	
Lane Util. Factor		0.95			0.95			1.00		1.00	1.00	
Frpb, ped/bikes		0.99			0.98			0.80		1.00	0.87	
Flpb, ped/bikes		1.00			1.00			0.96		0.80	1.00	
Fr <sub>t</sub>		1.00			1.00			0.90		1.00	0.91	
Flt Protected		1.00			1.00			0.99		0.95	1.00	
Satd. Flow (prot)		2848			2832			963		1239	1287	
Flt Permitted		1.00			1.00			0.92		0.72	1.00	
Satd. Flow (perm)		2848			2832			899		934	1287	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	908	23	0	901	26	27	2	92	73	31	44
RTOR Reduction (vph)	0	2	0	0	3	0	0	68	0	0	34	0
Lane Group Flow (vph)	0	929	0	0	924	0	0	53	0	73	41	0
Confl. Peds. (#/hr)	441		198	198		441	145		183	183		145
Confl. Bikes (#/hr)			10			30			30			30
Bus Blockages (#/hr)	0	5	0	0	5	0	0	0	0	0	0	0
Parking (#/hr)		0			0			5				
Turn Type		NA			NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8		8		4
Permitted Phases								8			4	
Actuated Green, G (s)	45.0			45.0			19.0		19.0	19.0		
Effective Green, g (s)	45.0			45.0			19.0		19.0	19.0		
Actuated g/C Ratio	0.56			0.56			0.24		0.24	0.24		
Clearance Time (s)	6.0			6.0			6.0		6.0	6.0		
Vehicle Extension (s)	0.2			0.2			0.2		0.2	0.2		
Lane Grp Cap (vph)	1602			1593			213		221	305		
v/s Ratio Prot	0.33			c0.33						0.03		
v/s Ratio Perm							0.06		c0.08			
v/c Ratio	0.58			0.58			0.25		0.33	0.14		
Uniform Delay, d1	11.4			11.4			24.7		25.2	24.0		
Progression Factor	1.00			1.00			1.00		1.00	1.00		
Incremental Delay, d2	1.5			1.5			2.8		4.0	0.9		
Delay (s)	12.9			12.9			27.5		29.2	25.0		
Level of Service	B			B			C		C	C		
Approach Delay (s)	12.9			12.9			27.5			27.1		
Approach LOS	B			B			C			C		
<b>Intersection Summary</b>												
HCM 2000 Control Delay	14.7			HCM 2000 Level of Service			B					
HCM 2000 Volume to Capacity ratio	0.49											
Actuated Cycle Length (s)	80.0			Sum of lost time (s)			14.0					
Intersection Capacity Utilization	57.5%			ICU Level of Service			B					
Analysis Period (min)	15											
c Critical Lane Group												

## HCM Signalized Intersection Capacity Analysis

1: Lee Avenue &amp; Ocean Avenue

Existing Plus Developer's Option AM SBTR

03/01/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↓			↑↓			↔		↔	↑↓	
Traffic Volume (vph)	0	855	11	0	800	117	25	19	131	120	22	32
Future Volume (vph)	0	855	11	0	800	117	25	19	131	120	22	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0			6.0		6.0	6.0	
Lane Util. Factor		0.95			0.95			1.00		1.00	1.00	
Frpb, ped/bikes		0.99			0.93			0.90		1.00	0.91	
Flpb, ped/bikes		1.00			1.00			0.98		0.93	1.00	
Fr <sub>t</sub>		1.00			0.98			0.90		1.00	0.91	
Flt Protected		1.00			1.00			0.99		0.95	1.00	
Satd. Flow (prot)		2873			2650			1123		1439	1341	
Flt Permitted		1.00			1.00			0.95		0.59	1.00	
Satd. Flow (perm)		2873			2650			1078		901	1341	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	900	12	0	842	123	26	20	138	126	23	34
RTOR Reduction (vph)	0	1	0	0	14	0	0	78	0	0	26	0
Lane Group Flow (vph)	0	911	0	0	951	0	0	106	0	126	31	0
Confl. Peds. (#/hr)	214		168	168		214	91		73	73		91
Confl. Bikes (#/hr)			10			30			30			30
Bus Blockages (#/hr)	0	5	0	0	5	0	0	0	0	0	0	0
Parking (#/hr)		0			0			5				
Turn Type		NA			NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases								8			4	
Actuated Green, G (s)	45.0			45.0			19.0		19.0	19.0		
Effective Green, g (s)	45.0			45.0			19.0		19.0	19.0		
Actuated g/C Ratio	0.56			0.56			0.24		0.24	0.24		
Clearance Time (s)	6.0			6.0			6.0		6.0	6.0		
Vehicle Extension (s)	0.2			0.2			0.2		0.2	0.2		
Lane Grp Cap (vph)	1616			1490			256		213	318		
v/s Ratio Prot	0.32			c0.36						0.02		
v/s Ratio Perm							0.10		c0.14			
v/c Ratio	0.56			0.64			0.41		0.59	0.10		
Uniform Delay, d1	11.2			11.9			25.8		27.1	23.8		
Progression Factor	1.00			1.00			1.00		1.00	1.00		
Incremental Delay, d2	1.4			2.1			4.9		11.5	0.6		
Delay (s)	12.6			14.0			30.7		38.6	24.4		
Level of Service	B			B			C		D	C		
Approach Delay (s)	12.6			14.0			30.7			34.2		
Approach LOS	B			B			C			C		
<b>Intersection Summary</b>												
HCM 2000 Control Delay	16.5			HCM 2000 Level of Service			B					
HCM 2000 Volume to Capacity ratio	0.60											
Actuated Cycle Length (s)	80.0			Sum of lost time (s)			14.0					
Intersection Capacity Utilization	75.0%			ICU Level of Service			D					
Analysis Period (min)	15											
c Critical Lane Group												

## HCM Signalized Intersection Capacity Analysis

1: Lee Avenue &amp; Ocean Avenue

Existing Plus Developer's Option PM SBTR

03/01/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↓			↑↓			↔		↑	↑↓	
Traffic Volume (vph)	0	863	22	0	852	151	26	46	87	116	29	54
Future Volume (vph)	0	863	22	0	852	151	26	46	87	116	29	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0			6.0		6.0	6.0	
Lane Util. Factor	0.95				0.95			1.00		1.00	1.00	
Frpb, ped/bikes	0.99				0.90			0.85		1.00	0.86	
Flpb, ped/bikes	1.00				1.00			0.97		0.83	1.00	
Fr <sub>t</sub>	1.00				0.98			0.93		1.00	0.90	
Flt Protected	1.00				1.00			0.99		0.95	1.00	
Satd. Flow (prot)	2848				2560			1079		1275	1254	
Flt Permitted	1.00				1.00			0.94		0.63	1.00	
Satd. Flow (perm)	2848				2560			1023		841	1254	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	908	23	0	897	159	27	48	92	122	31	57
RTOR Reduction (vph)	0	2	0	0	18	0	0	55	0	0	43	0
Lane Group Flow (vph)	0	929	0	0	1038	0	0	112	0	122	45	0
Confl. Peds. (#/hr)	441		198	198		441	145		183	183		145
Confl. Bikes (#/hr)			10			30			30			30
Bus Blockages (#/hr)	0	5	0	0	5	0	0	0	0	0	0	0
Parking (#/hr)		0			0			5				
Turn Type	NA				NA			Perm	NA		Perm	NA
Protected Phases	2				6				8			4
Permitted Phases							8				4	
Actuated Green, G (s)	45.0				45.0			19.0		19.0	19.0	
Effective Green, g (s)	45.0				45.0			19.0		19.0	19.0	
Actuated g/C Ratio	0.56				0.56			0.24		0.24	0.24	
Clearance Time (s)	6.0				6.0			6.0		6.0	6.0	
Vehicle Extension (s)	0.2				0.2			0.2		0.2	0.2	
Lane Grp Cap (vph)	1602				1440			242		199	297	
v/s Ratio Prot	0.33				c0.41						0.04	
v/s Ratio Perm								0.11		c0.14		
v/c Ratio	0.58				0.72			0.46		0.61	0.15	
Uniform Delay, d1	11.4				12.9			26.1		27.2	24.1	
Progression Factor	1.00				1.00			1.00		1.00	1.00	
Incremental Delay, d2	1.5				3.1			6.3		13.3	1.1	
Delay (s)	12.9				16.0			32.4		40.5	25.2	
Level of Service	B				B			C		D	C	
Approach Delay (s)	12.9				16.0			32.4			34.1	
Approach LOS	B				B			C			C	
<b>Intersection Summary</b>												
HCM 2000 Control Delay	17.6				HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio	0.67											
Actuated Cycle Length (s)	80.0				Sum of lost time (s)			14.0				
Intersection Capacity Utilization	74.0%				ICU Level of Service			D				
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis Existing Plus Add. Housing Option AM SBTR  
 1: Lee Avenue & Ocean Avenue 03/01/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	858	11	0	807	67	25	21	131	107	10	31
Future Volume (vph)	0	858	11	0	807	67	25	21	131	107	10	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0			6.0		6.0	6.0	
Lane Util. Factor		0.95			0.95			1.00		1.00	1.00	
Frpb, ped/bikes		0.99			0.96			0.90		1.00	0.89	
Flpb, ped/bikes		1.00			1.00			0.98		0.94	1.00	
Fr <sub>t</sub>		1.00			0.99			0.90		1.00	0.89	
Flt Protected		1.00			1.00			0.99		0.95	1.00	
Satd. Flow (prot)		2873			2746			1126		1440	1273	
Flt Permitted		1.00			1.00			0.96		0.59	1.00	
Satd. Flow (perm)		2873			2746			1083		896	1273	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	903	12	0	849	71	26	22	138	113	11	33
RTOR Reduction (vph)	0	1	0	0	8	0	0	77	0	0	25	0
Lane Group Flow (vph)	0	914	0	0	912	0	0	109	0	113	19	0
Confl. Peds. (#/hr)	214		168	168		214	91		73	73		91
Confl. Bikes (#/hr)			10			30			30			30
Bus Blockages (#/hr)	0	5	0	0	5	0	0	0	0	0	0	0
Parking (#/hr)		0			0			5				
Turn Type		NA			NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases								8			4	
Actuated Green, G (s)	45.0			45.0			19.0		19.0	19.0		
Effective Green, g (s)	45.0			45.0			19.0		19.0	19.0		
Actuated g/C Ratio	0.56			0.56			0.24		0.24	0.24		
Clearance Time (s)	6.0			6.0			6.0		6.0	6.0		
Vehicle Extension (s)	0.2			0.2			0.2		0.2	0.2		
Lane Grp Cap (vph)	1616			1544			257		212	302		
v/s Ratio Prot	0.32			c0.33						0.01		
v/s Ratio Perm							0.10		c0.13			
v/c Ratio	0.57			0.59			0.42		0.53	0.06		
Uniform Delay, d1	11.2			11.5			25.9		26.6	23.6		
Progression Factor	1.00			1.00			1.00		1.00	1.00		
Incremental Delay, d2	1.4			1.7			5.1		9.3	0.4		
Delay (s)	12.7			13.1			30.9		35.9	24.0		
Level of Service	B			B			C		D	C		
Approach Delay (s)	12.7			13.1			30.9			32.6		
Approach LOS	B			B			C			C		
Intersection Summary												
HCM 2000 Control Delay	15.9			HCM 2000 Level of Service			B					
HCM 2000 Volume to Capacity ratio	0.56											
Actuated Cycle Length (s)	80.0			Sum of lost time (s)			14.0					
Intersection Capacity Utilization	69.4%			ICU Level of Service			C					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis Existing Plus Add. Housing Option PM SBTR  
 1: Lee Avenue & Ocean Avenue 03/01/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	863	22	0	856	157	26	62	87	130	29	56
Future Volume (vph)	0	863	22	0	856	157	26	62	87	130	29	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0			6.0		6.0	6.0	
Lane Util. Factor	0.95				0.95			1.00		1.00	1.00	
Frpb, ped/bikes	0.99				0.90			0.87		1.00	0.86	
Flpb, ped/bikes	1.00				1.00			0.97		0.84	1.00	
Fr <sub>t</sub>	1.00				0.98			0.93		1.00	0.90	
Flt Protected	1.00				1.00			0.99		0.95	1.00	
Satd. Flow (prot)	2848				2550			1108		1288	1250	
Flt Permitted	1.00				1.00			0.95		0.60	1.00	
Satd. Flow (perm)	2848				2550			1056		807	1250	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	908	23	0	901	165	27	65	92	137	31	59
RTOR Reduction (vph)	0	2	0	0	19	0	0	45	0	0	45	0
Lane Group Flow (vph)	0	929	0	0	1047	0	0	139	0	137	45	0
Confl. Peds. (#/hr)	441		198	198		441	145		183	183		145
Confl. Bikes (#/hr)			10			30			30			30
Bus Blockages (#/hr)	0	5	0	0	5	0	0	0	0	0	0	0
Parking (#/hr)		0			0			5				
Turn Type	NA			NA			Perm	NA		Perm	NA	
Protected Phases	2			6				8			4	
Permitted Phases							8				4	
Actuated Green, G (s)	45.0			45.0				19.0		19.0	19.0	
Effective Green, g (s)	45.0			45.0				19.0		19.0	19.0	
Actuated g/C Ratio	0.56			0.56				0.24		0.24	0.24	
Clearance Time (s)	6.0			6.0				6.0		6.0	6.0	
Vehicle Extension (s)	0.2			0.2				0.2		0.2	0.2	
Lane Grp Cap (vph)	1602			1434				250		191	296	
v/s Ratio Prot	0.33			c0.41							0.04	
v/s Ratio Perm								0.13		c0.17		
v/c Ratio	0.58			0.73				0.56		0.72	0.15	
Uniform Delay, d1	11.4			13.0				26.8		28.0	24.1	
Progression Factor	1.00			1.00				1.00		1.00	1.00	
Incremental Delay, d2	1.5			3.3				8.6		20.6	1.1	
Delay (s)	12.9			16.3				35.4		48.6	25.2	
Level of Service	B			B				D		D	C	
Approach Delay (s)	12.9			16.3				35.4			39.3	
Approach LOS	B			B				D			D	
Intersection Summary												
HCM 2000 Control Delay	18.6			HCM 2000 Level of Service				B				
HCM 2000 Volume to Capacity ratio	0.70											
Actuated Cycle Length (s)	80.0			Sum of lost time (s)				14.0				
Intersection Capacity Utilization	78.3%			ICU Level of Service				D				
Analysis Period (min)	15											
c Critical Lane Group												

Queues  
1: Lee Avenue & Ocean Avenue

Existing AM SBTR

03/18/2019



Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	915	875	167	25	15
v/c Ratio	0.57	0.55	0.51	0.11	0.04
Control Delay	12.9	12.6	17.7	25.6	20.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	12.9	12.6	17.7	25.6	20.6
Queue Length 50th (ft)	142	133	27	10	4
Queue Length 95th (ft)	195	184	87	30	19
Internal Link Dist (ft)	187	204	143		276
Turn Bay Length (ft)					
Base Capacity (vph)	1617	1599	327	224	357
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.57	0.55	0.51	0.11	0.04

Intersection Summary

Queues  
1: Lee Avenue & Ocean Avenue

Existing PM SBTR

03/18/2019



Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	931	927	121	73	75
v/c Ratio	0.58	0.58	0.43	0.33	0.22
Control Delay	13.1	13.1	14.8	30.2	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	13.1	13.1	14.8	30.2	14.6
Queue Length 50th (ft)	145	145	13	30	12
Queue Length 95th (ft)	201	200	60	68	46
Internal Link Dist (ft)	187	204	143		276
Turn Bay Length (ft)					
Base Capacity (vph)	1603	1596	281	222	339
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.58	0.58	0.43	0.33	0.22

Intersection Summary

Queues  
1: Lee Avenue & Ocean Avenue

Existing Plus Developer's Option AM SBTR

03/18/2019



Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	912	965	184	126	57
v/c Ratio	0.56	0.64	0.55	0.59	0.17
Control Delay	12.9	14.0	19.7	40.3	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	12.9	14.0	19.7	40.3	14.5
Queue Length 50th (ft)	141	154	34	56	9
Queue Length 95th (ft)	194	217	100	#125	38
Internal Link Dist (ft)	187	204	143		276
Turn Bay Length (ft)					
Base Capacity (vph)	1617	1505	333	213	344
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.56	0.64	0.55	0.59	0.17

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues  
1: Lee Avenue & Ocean Avenue

Existing Plus Developer's Option PM SBTR

03/18/2019



Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	931	1056	167	122	88
v/c Ratio	0.58	0.72	0.56	0.61	0.26
Control Delay	13.1	16.0	23.7	42.6	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	13.1	16.0	23.7	42.6	13.6
Queue Length 50th (ft)	145	181	40	55	12
Queue Length 95th (ft)	201	258	105	#127	49
Internal Link Dist (ft)	187	204	143		276
Turn Bay Length (ft)					
Base Capacity (vph)	1603	1457	298	199	341
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.58	0.72	0.56	0.61	0.26

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues  
1: Lee Avenue & Ocean Avenue

Existing Plus Add. Housing Option AM SBTR

03/18/2019



Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	915	920	186	113	44
v/c Ratio	0.57	0.59	0.56	0.53	0.13
Control Delay	12.9	13.2	20.0	37.2	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	12.9	13.2	20.0	37.2	12.6
Queue Length 50th (ft)	142	143	35	49	4
Queue Length 95th (ft)	195	200	101	103	29
Internal Link Dist (ft)	187	204	143		276
Turn Bay Length (ft)					
Base Capacity (vph)	1617	1551	334	212	327
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.57	0.59	0.56	0.53	0.13

Intersection Summary

Queues  
1: Lee Avenue & Ocean Avenue

Existing Plus Add. Housing Option PM SBTR

03/18/2019



Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	931	1066	184	137	90
v/c Ratio	0.58	0.73	0.62	0.72	0.26
Control Delay	13.1	16.2	29.0	51.5	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	13.1	16.2	29.0	51.5	13.5
Queue Length 50th (ft)	145	184	55	63	12
Queue Length 95th (ft)	201	263	#130	#151	49
Internal Link Dist (ft)	187	204	143		276
Turn Bay Length (ft)					
Base Capacity (vph)	1603	1453	295	191	341
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.58	0.73	0.62	0.72	0.26

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

1: Lee Avenue & Ocean Avenue

Existing AM LPI

03/18/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↓			↑↓			↔		↔	↑↓	
Traffic Volume (vph)	0	858	11	0	807	25	25	3	131	24	10	4
Future Volume (vph)	0	858	11	0	807	25	25	3	131	24	10	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0			6.0		6.0	6.0	
Lane Util. Factor		0.95			0.95			1.00		1.00	1.00	
Frpb, ped/bikes		0.99			0.98			0.89		1.00	0.96	
Flpb, ped/bikes		1.00			1.00			0.98		0.93	1.00	
Fr <sub>t</sub>		1.00			1.00			0.89		1.00	0.96	
Flt Protected		1.00			1.00			0.99		0.95	1.00	
Satd. Flow (prot)		2873			2838			1094		1434	1492	
Flt Permitted		1.00			1.00			0.96		0.63	1.00	
Satd. Flow (perm)		2873			2838			1053		946	1492	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	903	12	0	849	26	26	3	138	25	11	4
RTOR Reduction (vph)	0	1	0	0	3	0	0	105	0	0	3	0
Lane Group Flow (vph)	0	914	0	0	872	0	0	62	0	25	12	0
Confl. Peds. (#/hr)	214		168	168		214	91		73	73		91
Confl. Bikes (#/hr)			10			30			30			30
Bus Blockages (#/hr)	0	5	0	0	5	0	0	0	0	0	0	0
Parking (#/hr)		0			0			5				
Turn Type		NA			NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8		8		4
Permitted Phases								8			4	
Actuated Green, G (s)	41.0			41.0			19.0		19.0	19.0		
Effective Green, g (s)	41.0			41.0			19.0		19.0	19.0		
Actuated g/C Ratio	0.51			0.51			0.24		0.24	0.24		
Clearance Time (s)	6.0			6.0			6.0		6.0	6.0		
Vehicle Extension (s)	0.2			0.2			0.2		0.2	0.2		
Lane Grp Cap (vph)	1472			1454			250		224	354		
v/s Ratio Prot	c0.32			0.31						0.01		
v/s Ratio Perm							c0.06		0.03			
v/c Ratio	0.62			0.60			0.25		0.11	0.03		
Uniform Delay, d1	13.9			13.7			24.7		23.9	23.4		
Progression Factor	1.00			1.00			1.00		1.00	1.00		
Incremental Delay, d2	2.0			1.8			2.3		1.0	0.2		
Delay (s)	15.9			15.6			27.1		24.9	23.6		
Level of Service	B			B			C		C	C		
Approach Delay (s)	15.9			15.6			27.1			24.4		
Approach LOS	B			B			C			C		
<b>Intersection Summary</b>												
HCM 2000 Control Delay	16.9			HCM 2000 Level of Service			B					
HCM 2000 Volume to Capacity ratio	0.46											
Actuated Cycle Length (s)	80.0			Sum of lost time (s)			14.0					
Intersection Capacity Utilization	58.4%			ICU Level of Service			B					
Analysis Period (min)	15											
c Critical Lane Group												

Queues  
1: Lee Avenue & Ocean Avenue

Existing AM LPI

03/18/2019



Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	915	875	167	25	15
v/c Ratio	0.62	0.60	0.47	0.11	0.04
Control Delay	16.2	15.8	12.1	25.6	20.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	16.2	15.8	12.1	25.6	20.6
Queue Length 50th (ft)	161	151	11	10	4
Queue Length 95th (ft)	222	208	66	30	19
Internal Link Dist (ft)	187	204	143		276
Turn Bay Length (ft)					
Base Capacity (vph)	1473	1457	355	224	357
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.62	0.60	0.47	0.11	0.04

Intersection Summary

# HCM Signalized Intersection Capacity Analysis

1: Lee Avenue & Ocean Avenue

Existing PM LPI

03/18/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	863	22	0	856	25	26	2	87	69	29	42
Future Volume (vph)	0	863	22	0	856	25	26	2	87	69	29	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0			6.0		6.0	6.0	
Lane Util. Factor	0.95				0.95			1.00		1.00	1.00	
Frpb, ped/bikes	0.99				0.98			0.80		1.00	0.87	
Flpb, ped/bikes	1.00				1.00			0.96		0.80	1.00	
Fr <sub>t</sub>	1.00				1.00			0.90		1.00	0.91	
Flt Protected	1.00				1.00			0.99		0.95	1.00	
Satd. Flow (prot)	2848				2832			963		1239	1287	
Flt Permitted	1.00				1.00			0.92		0.72	1.00	
Satd. Flow (perm)	2848				2832			899		934	1287	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	908	23	0	901	26	27	2	92	73	31	44
RTOR Reduction (vph)	0	2	0	0	2	0	0	70	0	0	34	0
Lane Group Flow (vph)	0	929	0	0	925	0	0	51	0	73	41	0
Confl. Peds. (#/hr)	441		198	198		441	145		183	183		145
Confl. Bikes (#/hr)			10			30			30			30
Bus Blockages (#/hr)	0	5	0	0	5	0	0	0	0	0	0	0
Parking (#/hr)		0			0			5				
Turn Type	NA			NA			Perm	NA		Perm	NA	
Protected Phases	2			6				8			4	
Permitted Phases											4	
Actuated Green, G (s)	41.0			41.0			19.0		19.0	19.0	19.0	
Effective Green, g (s)	41.0			41.0			19.0		19.0	19.0	19.0	
Actuated g/C Ratio	0.51			0.51			0.24		0.24	0.24	0.24	
Clearance Time (s)	6.0			6.0			6.0		6.0	6.0	6.0	
Vehicle Extension (s)	0.2			0.2			0.2		0.2	0.2	0.2	
Lane Grp Cap (vph)	1459			1451			213		221	305		
v/s Ratio Prot	0.33			c0.33						0.03		
v/s Ratio Perm							0.06		c0.08			
v/c Ratio	0.64			0.64			0.24		0.33	0.14		
Uniform Delay, d1	14.1			14.1			24.7		25.2	24.0		
Progression Factor	1.00			1.00			1.00		1.00	1.00		
Incremental Delay, d2	2.1			2.2			2.6		4.0	0.9		
Delay (s)	16.2			16.3			27.3		29.2	25.0		
Level of Service	B			B			C		C	C		
Approach Delay (s)	16.2			16.3			27.3			27.1		
Approach LOS	B			B			C			C		
<b>Intersection Summary</b>												
HCM 2000 Control Delay	17.6			HCM 2000 Level of Service			B					
HCM 2000 Volume to Capacity ratio	0.49											
Actuated Cycle Length (s)	80.0			Sum of lost time (s)			14.0					
Intersection Capacity Utilization	57.5%			ICU Level of Service			B					
Analysis Period (min)	15											
c Critical Lane Group												

Queues  
1: Lee Avenue & Ocean Avenue

Existing PM LPI

03/18/2019



Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	931	927	121	73	75
v/c Ratio	0.64	0.64	0.43	0.33	0.22
Control Delay	16.5	16.5	14.3	30.2	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	16.5	16.5	14.3	30.2	14.6
Queue Length 50th (ft)	165	165	11	30	12
Queue Length 95th (ft)	228	227	58	68	46
Internal Link Dist (ft)	187	204	143		276
Turn Bay Length (ft)					
Base Capacity (vph)	1461	1454	283	222	339
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.64	0.64	0.43	0.33	0.22

Intersection Summary

HCM Signalized Intersection Capacity Analysis  
1: Lee Avenue & Ocean Avenue

Existing Plus Developer's Option AM LPI  
03/18/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↓			↑↓			↔		↔	↑↓	
Traffic Volume (vph)	0	855	11	0	800	117	25	19	131	120	22	32
Future Volume (vph)	0	855	11	0	800	117	25	19	131	120	22	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0			6.0		6.0	6.0	
Lane Util. Factor		0.95			0.95			1.00		1.00	1.00	
Frpb, ped/bikes		0.99			0.93			0.90		1.00	0.91	
Flpb, ped/bikes		1.00			1.00			0.98		0.93	1.00	
Fr <sub>t</sub>		1.00			0.98			0.90		1.00	0.91	
Flt Protected		1.00			1.00			0.99		0.95	1.00	
Satd. Flow (prot)		2873			2650			1123		1439	1341	
Flt Permitted		1.00			1.00			0.95		0.59	1.00	
Satd. Flow (perm)		2873			2650			1078		901	1341	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	900	12	0	842	123	26	20	138	126	23	34
RTOR Reduction (vph)	0	1	0	0	14	0	0	105	0	0	26	0
Lane Group Flow (vph)	0	911	0	0	951	0	0	79	0	126	31	0
Confl. Peds. (#/hr)	214		168	168		214	91		73	73		91
Confl. Bikes (#/hr)			10			30			30			30
Bus Blockages (#/hr)	0	5	0	0	5	0	0	0	0	0	0	0
Parking (#/hr)		0			0			5				
Turn Type		NA			NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases								8			4	
Actuated Green, G (s)	41.0			41.0			19.0		19.0	19.0		
Effective Green, g (s)	41.0			41.0			19.0		19.0	19.0		
Actuated g/C Ratio	0.51			0.51			0.24		0.24	0.24		
Clearance Time (s)	6.0			6.0			6.0		6.0	6.0		
Vehicle Extension (s)	0.2			0.2			0.2		0.2	0.2		
Lane Grp Cap (vph)	1472			1358			256		213	318		
v/s Ratio Prot	0.32			c0.36						0.02		
v/s Ratio Perm							0.07		c0.14			
v/c Ratio	0.62			0.70			0.31		0.59	0.10		
Uniform Delay, d1	13.9			14.8			25.1		27.1	23.8		
Progression Factor	1.00			1.00			1.00		1.00	1.00		
Incremental Delay, d2	2.0			3.0			3.1		11.5	0.6		
Delay (s)	15.9			17.9			28.2		38.6	24.4		
Level of Service	B			B			C		D	C		
Approach Delay (s)	15.9			17.9			28.2			34.2		
Approach LOS	B			B			C			C		
Intersection Summary												
HCM 2000 Control Delay	19.2			HCM 2000 Level of Service			B					
HCM 2000 Volume to Capacity ratio	0.60											
Actuated Cycle Length (s)	80.0			Sum of lost time (s)			14.0					
Intersection Capacity Utilization	75.0%			ICU Level of Service			D					
Analysis Period (min)	15											
c Critical Lane Group												

Queues  
1: Lee Avenue & Ocean Avenue

Existing Plus Developer's Option AM LPI

03/18/2019



Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	912	965	184	126	57
v/c Ratio	0.62	0.70	0.51	0.59	0.17
Control Delay	16.2	17.8	13.9	40.3	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	16.2	17.8	13.9	40.3	14.5
Queue Length 50th (ft)	161	176	18	56	9
Queue Length 95th (ft)	221	248	78	#125	38
Internal Link Dist (ft)	187	204	143		276
Turn Bay Length (ft)					
Base Capacity (vph)	1473	1372	361	213	344
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.62	0.70	0.51	0.59	0.17

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis  
1: Lee Avenue & Ocean Avenue

Existing Plus Developer's Option PM LPI  
03/18/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	863	22	0	852	151	26	46	87	116	29	54
Future Volume (vph)	0	863	22	0	852	151	26	46	87	116	29	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0			6.0		6.0	6.0	
Lane Util. Factor	0.95				0.95			1.00		1.00	1.00	
Frpb, ped/bikes	0.99				0.90			0.85		1.00	0.86	
Flpb, ped/bikes	1.00				1.00			0.97		0.83	1.00	
Fr <sub>t</sub>	1.00				0.98			0.93		1.00	0.90	
Flt Protected	1.00				1.00			0.99		0.95	1.00	
Satd. Flow (prot)	2848				2559			1079		1275	1254	
Flt Permitted	1.00				1.00			0.94		0.63	1.00	
Satd. Flow (perm)	2848				2559			1023		841	1254	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	908	23	0	897	159	27	48	92	122	31	57
RTOR Reduction (vph)	0	2	0	0	18	0	0	55	0	0	43	0
Lane Group Flow (vph)	0	929	0	0	1038	0	0	112	0	122	45	0
Confl. Peds. (#/hr)	441		198	198		441	145		183	183		145
Confl. Bikes (#/hr)			10			30			30			30
Bus Blockages (#/hr)	0	5	0	0	5	0	0	0	0	0	0	0
Parking (#/hr)		0			0			5				
Turn Type	NA			NA			Perm	NA		Perm	NA	
Protected Phases	2			6				8			4	
Permitted Phases							8				4	
Actuated Green, G (s)	41.0			41.0				19.0		19.0	19.0	
Effective Green, g (s)	41.0			41.0				19.0		19.0	19.0	
Actuated g/C Ratio	0.51			0.51				0.24		0.24	0.24	
Clearance Time (s)	6.0			6.0				6.0		6.0	6.0	
Vehicle Extension (s)	0.2			0.2				0.2		0.2	0.2	
Lane Grp Cap (vph)	1459			1311				242		199	297	
v/s Ratio Prot	0.33			c0.41							0.04	
v/s Ratio Perm								0.11		c0.14		
v/c Ratio	0.64			0.79				0.46		0.61	0.15	
Uniform Delay, d1	14.1			16.0				26.1		27.2	24.1	
Progression Factor	1.00			1.00				1.00		1.00	1.00	
Incremental Delay, d2	2.1			5.0				6.3		13.3	1.1	
Delay (s)	16.2			21.0				32.4		40.5	25.2	
Level of Service	B			C				C		D	C	
Approach Delay (s)	16.2			21.0				32.4			34.1	
Approach LOS	B			C				C			C	
Intersection Summary												
HCM 2000 Control Delay	21.1			HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio	0.67											
Actuated Cycle Length (s)	80.0			Sum of lost time (s)				14.0				
Intersection Capacity Utilization	74.0%			ICU Level of Service				D				
Analysis Period (min)	15											
c Critical Lane Group												

Queues  
1: Lee Avenue & Ocean Avenue

Existing Plus Developer's Option PM LPI

03/18/2019



Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	931	1056	167	122	88
v/c Ratio	0.64	0.79	0.56	0.61	0.26
Control Delay	16.5	21.0	23.7	42.6	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	16.5	21.0	23.7	42.6	13.6
Queue Length 50th (ft)	165	207	40	55	12
Queue Length 95th (ft)	228	295	105	#127	49
Internal Link Dist (ft)	187	204	143		276
Turn Bay Length (ft)					
Base Capacity (vph)	1461	1329	298	199	341
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.64	0.79	0.56	0.61	0.26

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

## HCM Signalized Intersection Capacity Analysis

1: Lee Avenue &amp; Ocean Avenue

Existing Plus Add. Housing Option AM LPI

03/18/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↓			↑↓			↔		↑	↑↓	
Traffic Volume (vph)	0	858	11	0	807	67	25	21	131	107	10	31
Future Volume (vph)	0	858	11	0	807	67	25	21	131	107	10	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0			6.0		6.0	6.0	
Lane Util. Factor	0.95				0.95			1.00		1.00	1.00	
Frpb, ped/bikes	0.99				0.96			0.90		1.00	0.89	
Flpb, ped/bikes	1.00				1.00			0.98		0.94	1.00	
Fr <sub>t</sub>	1.00				0.99			0.90		1.00	0.89	
Flt Protected	1.00				1.00			0.99		0.95	1.00	
Satd. Flow (prot)	2873				2746			1126		1440	1273	
Flt Permitted	1.00				1.00			0.96		0.59	1.00	
Satd. Flow (perm)	2873				2746			1083		896	1273	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	903	12	0	849	71	26	22	138	113	11	33
RTOR Reduction (vph)	0	1	0	0	8	0	0	105	0	0	25	0
Lane Group Flow (vph)	0	914	0	0	912	0	0	81	0	113	19	0
Confl. Peds. (#/hr)	214		168	168		214	91		73	73		91
Confl. Bikes (#/hr)			10			30			30			30
Bus Blockages (#/hr)	0	5	0	0	5	0	0	0	0	0	0	0
Parking (#/hr)		0			0			5				
Turn Type	NA			NA			Perm	NA		Perm	NA	
Protected Phases	2			6				8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	41.0			41.0				19.0		19.0	19.0	
Effective Green, g (s)	41.0			41.0				19.0		19.0	19.0	
Actuated g/C Ratio	0.51			0.51				0.24		0.24	0.24	
Clearance Time (s)	6.0			6.0				6.0		6.0	6.0	
Vehicle Extension (s)	0.2			0.2				0.2		0.2	0.2	
Lane Grp Cap (vph)	1472			1407				257		212	302	
v/s Ratio Prot	0.32			c0.33							0.01	
v/s Ratio Perm							0.07			c0.13		
v/c Ratio	0.62			0.65				0.31		0.53	0.06	
Uniform Delay, d1	13.9			14.2				25.1		26.6	23.6	
Progression Factor	1.00			1.00				1.00		1.00	1.00	
Incremental Delay, d2	2.0			2.3				3.2		9.3	0.4	
Delay (s)	15.9			16.6				28.3		35.9	24.0	
Level of Service	B			B				C		D	C	
Approach Delay (s)	15.9			16.6				28.3			32.6	
Approach LOS	B			B				C			C	
<b>Intersection Summary</b>												
HCM 2000 Control Delay	18.5			HCM 2000 Level of Service				B				
HCM 2000 Volume to Capacity ratio	0.56											
Actuated Cycle Length (s)	80.0			Sum of lost time (s)				14.0				
Intersection Capacity Utilization	69.4%			ICU Level of Service				C				
Analysis Period (min)	15											
c Critical Lane Group												

Queues  
1: Lee Avenue & Ocean Avenue

Existing Plus Add. Housing Option AM LPI

03/18/2019



Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	915	920	186	113	44
v/c Ratio	0.62	0.65	0.51	0.53	0.13
Control Delay	16.2	16.7	14.1	37.2	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	16.2	16.7	14.1	37.2	12.6
Queue Length 50th (ft)	161	163	19	49	4
Queue Length 95th (ft)	222	227	79	103	29
Internal Link Dist (ft)	187	204	143		276
Turn Bay Length (ft)					
Base Capacity (vph)	1473	1414	362	212	327
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.62	0.65	0.51	0.53	0.13

Intersection Summary

## HCM Signalized Intersection Capacity Analysis

1: Lee Avenue &amp; Ocean Avenue

Existing Plus Add. Housing Option PM LPI

03/18/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↓			↑↓			↔		↗	↑	
Traffic Volume (vph)	0	863	22	0	856	157	26	62	87	130	29	56
Future Volume (vph)	0	863	22	0	856	157	26	62	87	130	29	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0			6.0		6.0	6.0	
Lane Util. Factor	0.95				0.95			1.00		1.00	1.00	
Frpb, ped/bikes	0.99				0.90			0.87		1.00	0.86	
Flpb, ped/bikes	1.00				1.00			0.97		0.84	1.00	
Fr <sub>t</sub>	1.00				0.98			0.93		1.00	0.90	
Flt Protected	1.00				1.00			0.99		0.95	1.00	
Satd. Flow (prot)	2848				2550			1108		1288	1250	
Flt Permitted	1.00				1.00			0.95		0.60	1.00	
Satd. Flow (perm)	2848				2550			1056		807	1250	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	908	23	0	901	165	27	65	92	137	31	59
RTOR Reduction (vph)	0	2	0	0	19	0	0	45	0	0	45	0
Lane Group Flow (vph)	0	929	0	0	1047	0	0	139	0	137	45	0
Confl. Peds. (#/hr)	441		198	198		441	145		183	183		145
Confl. Bikes (#/hr)			10			30			30			30
Bus Blockages (#/hr)	0	5	0	0	5	0	0	0	0	0	0	0
Parking (#/hr)		0			0			5				
Turn Type	NA			NA			Perm	NA		Perm	NA	
Protected Phases	2			6				8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	41.0			41.0				19.0		19.0	19.0	
Effective Green, g (s)	41.0			41.0				19.0		19.0	19.0	
Actuated g/C Ratio	0.51			0.51				0.24		0.24	0.24	
Clearance Time (s)	6.0			6.0				6.0		6.0	6.0	
Vehicle Extension (s)	0.2			0.2				0.2		0.2	0.2	
Lane Grp Cap (vph)	1459			1306				250		191	296	
v/s Ratio Prot	0.33			c0.41							0.04	
v/s Ratio Perm								0.13		c0.17		
v/c Ratio	0.64			0.80				0.56		0.72	0.15	
Uniform Delay, d1	14.1			16.1				26.8		28.0	24.1	
Progression Factor	1.00			1.00				1.00		1.00	1.00	
Incremental Delay, d2	2.1			5.3				8.6		20.6	1.1	
Delay (s)	16.2			21.4				35.4		48.6	25.2	
Level of Service	B			C				D		D	C	
Approach Delay (s)	16.2			21.4				35.4			39.3	
Approach LOS	B			C				D			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay	22.2			HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio	0.70											
Actuated Cycle Length (s)	80.0			Sum of lost time (s)				14.0				
Intersection Capacity Utilization	78.3%			ICU Level of Service				D				
Analysis Period (min)	15											
c Critical Lane Group												

Queues  
1: Lee Avenue & Ocean Avenue

Existing Plus Add. Housing Option PM LPI

03/18/2019



Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	931	1066	184	137	90
v/c Ratio	0.64	0.80	0.62	0.72	0.26
Control Delay	16.5	21.5	29.0	51.5	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	16.5	21.5	29.0	51.5	13.5
Queue Length 50th (ft)	165	211	55	63	12
Queue Length 95th (ft)	228	300	#130	#151	49
Internal Link Dist (ft)	187	204	143		276
Turn Bay Length (ft)					
Base Capacity (vph)	1461	1325	295	191	341
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.64	0.80	0.62	0.72	0.26

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

1: Lee Avenue & Ocean Avenue

Existing AM Split Phasing

04/18/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	858	11	0	807	25	25	3	131	24	10	4
Future Volume (vph)	0	858	11	0	807	25	25	3	131	24	10	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0		6.0	6.0	
Lane Util. Factor	0.95				0.95			1.00		1.00	1.00	
Frpb, ped/bikes	0.99				0.98			0.75		1.00	0.94	
Flpb, ped/bikes	1.00				1.00			1.00		1.00	1.00	
Frt	1.00				1.00			0.89		1.00	0.96	
Flt Protected	1.00				1.00			0.99		0.95	1.00	
Satd. Flow (prot)	2873				2838			936		1540	1466	
Flt Permitted	1.00				1.00			0.99		0.95	1.00	
Satd. Flow (perm)	2873				2838			936		1540	1466	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	903	12	0	849	26	26	3	138	25	11	4
RTOR Reduction (vph)	0	1	0	0	3	0	0	129	0	0	4	0
Lane Group Flow (vph)	0	914	0	0	872	0	0	38	0	25	11	0
Confl. Peds. (#/hr)		168			214	91		173	173		91	
Confl. Bikes (#/hr)		10			30			30			30	
Bus Blockages (#/hr)	0	5	0	0	5	0	0	0	0	0	0	0
Parking (#/hr)		0			0			5				
Turn Type	NA				NA			Split	NA		Split	NA
Protected Phases		2			6			10	10		4	4
Permitted Phases												
Actuated Green, G (s)	45.0				45.0			5.0		5.0	5.0	
Effective Green, g (s)	45.0				45.0			5.0		5.0	5.0	
Actuated g/C Ratio	0.56				0.56			0.06		0.06	0.06	
Clearance Time (s)	6.0				6.0			6.0		6.0	6.0	
Vehicle Extension (s)	0.2				0.2			0.2		0.2	0.2	
Lane Grp Cap (vph)	1616				1596			58		96	91	
v/s Ratio Prot	c0.32				0.31			c0.04		c0.02	0.01	
v/s Ratio Perm												
v/c Ratio	0.57				0.55			0.65		0.26	0.12	
Uniform Delay, d1	11.2				11.1			36.6		35.7	35.4	
Progression Factor	0.44				1.23			1.00		1.00	1.00	
Incremental Delay, d2	1.3				0.7			44.7		6.5	2.8	
Delay (s)	6.2				14.3			81.3		42.2	38.2	
Level of Service	A				B			F		D	D	
Approach Delay (s)	6.2				14.3			81.3			40.7	
Approach LOS	A				B			F			D	
Intersection Summary												
HCM 2000 Control Delay	16.7				HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio	0.52											
Actuated Cycle Length (s)	80.0				Sum of lost time (s)			22.0				
Intersection Capacity Utilization	60.3%				ICU Level of Service			B				
Analysis Period (min)	15											
c Critical Lane Group												

Queues  
1: Lee Avenue & Ocean Avenue

Existing AM Split Phasing

04/18/2019



Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	915	875	167	25	15
v/c Ratio	0.57	0.55	0.89	0.26	0.16
Control Delay	6.3	14.6	56.7	42.8	34.4
Queue Delay	0.3	5.5	5.1	0.8	0.0
Total Delay	6.6	20.1	61.7	43.6	34.4
Queue Length 50th (ft)	82	226	14	12	5
Queue Length 95th (ft)	41	m236	#126	36	24
Internal Link Dist (ft)	104	89	248		25
Turn Bay Length (ft)					
Base Capacity (vph)	1617	1599	187	96	95
Starvation Cap Reductn	223	652	0	0	0
Spillback Cap Reductn	52	0	7	13	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.66	0.92	0.93	0.30	0.16

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

1: Lee Avenue & Ocean Avenue

Existing PM Split Phasing

04/18/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	863	22	0	856	25	26	2	87	69	29	42
Future Volume (vph)	0	863	22	0	856	25	26	2	87	69	29	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0		6.0	6.0	
Lane Util. Factor	0.95				0.95			1.00		1.00	1.00	
Frpb, ped/bikes	0.99				0.98			0.76		1.00	0.84	
Flpb, ped/bikes	1.00				1.00			1.00		1.00	1.00	
Frt	1.00				1.00			0.90		1.00	0.91	
Flt Protected	1.00				1.00			0.99		0.95	1.00	
Satd. Flow (prot)	2848				2832			958		1540	1241	
Flt Permitted	1.00				1.00			0.99		0.95	1.00	
Satd. Flow (perm)	2848				2832			958		1540	1241	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	908	23	0	901	26	27	2	92	73	31	44
RTOR Reduction (vph)	0	2	0	0	3	0	0	86	0	0	41	0
Lane Group Flow (vph)	0	929	0	0	924	0	0	35	0	73	34	0
Confl. Peds. (#/hr)		198				441	145		183	183		145
Confl. Bikes (#/hr)		10				30			30			30
Bus Blockages (#/hr)	0	5	0	0	5	0	0	0	0	0	0	0
Parking (#/hr)		0			0			5				
Turn Type	NA				NA			Split	NA		Split	NA
Protected Phases		2				6		10	10		4	4
Permitted Phases												
Actuated Green, G (s)	45.0				45.0			5.0		5.0	5.0	
Effective Green, g (s)	45.0				45.0			5.0		5.0	5.0	
Actuated g/C Ratio	0.56				0.56			0.06		0.06	0.06	
Clearance Time (s)	6.0				6.0			6.0		6.0	6.0	
Vehicle Extension (s)	0.2				0.2			0.2		0.2	0.2	
Lane Grp Cap (vph)	1602				1593			59		96	77	
v/s Ratio Prot	0.33				c0.33			c0.04		c0.05	0.03	
v/s Ratio Perm												
v/c Ratio	0.58				0.58			0.59		0.76	0.44	
Uniform Delay, d1	11.4				11.4			36.5		36.9	36.1	
Progression Factor	0.46				1.26			1.00		1.00	1.00	
Incremental Delay, d2	1.4				1.0			36.5		42.6	17.1	
Delay (s)	6.6				15.3			73.0		79.6	53.2	
Level of Service	A				B			E		E	D	
Approach Delay (s)	6.6				15.3			73.0			66.2	
Approach LOS	A				B			E			E	

## Intersection Summary

HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Queues  
1: Lee Avenue & Ocean Avenue

Existing PM Split Phasing

04/18/2019



Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	931	927	121	73	75
v/c Ratio	0.58	0.58	0.83	0.76	0.64
Control Delay	6.7	15.6	56.2	83.3	44.7
Queue Delay	0.4	4.3	6.2	79.6	1.0
Total Delay	7.1	19.9	62.5	162.9	45.7
Queue Length 50th (ft)	88	241	14	37	15
Queue Length 95th (ft)	52	m281	#107	#108	#78
Internal Link Dist (ft)	104	89	248		25
Turn Bay Length (ft)					
Base Capacity (vph)	1603	1596	146	96	118
Starvation Cap Reductn	249	577	0	0	0
Spillback Cap Reductn	65	187	9	40	4
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.69	0.91	0.88	1.30	0.66

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis  
1: Lee Avenue & Ocean Avenue

Existing Plus Developer's Option AM Split  
04/18/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	855	11	0	800	117	25	19	131	120	22	32
Future Volume (vph)	0	855	11	0	800	117	25	19	131	120	22	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0			6.0		6.0	6.0	
Lane Util. Factor	0.95				0.95			1.00		1.00	1.00	
Frpb, ped/bikes	0.99				0.93			0.85		1.00	0.87	
Flpb, ped/bikes	1.00				1.00			1.00		1.00	1.00	
Fr <sub>t</sub>	1.00				0.98			0.90		1.00	0.91	
Flt Protected	1.00				1.00			0.99		0.95	1.00	
Satd. Flow (prot)	2873				2650			1079		1540	1285	
Flt Permitted	1.00				1.00			0.99		0.95	1.00	
Satd. Flow (perm)	2873				2650			1079		1540	1285	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	900	12	0	842	123	26	20	138	126	23	34
RTOR Reduction (vph)	0	1	0	0	14	0	0	110	0	0	32	0
Lane Group Flow (vph)	0	911	0	0	951	0	0	74	0	126	25	0
Confl. Peds. (#/hr)	214		168	168		214	91		73	73		91
Confl. Bikes (#/hr)			10			30			30			30
Bus Blockages (#/hr)	0	5	0	0	5	0	0	0	0	0	0	0
Parking (#/hr)		0			0			5				
Turn Type	NA			NA			Split	NA		Split	NA	
Protected Phases	2			6			10	10		4	4	
Permitted Phases												
Actuated Green, G (s)	45.0			45.0			5.0		5.0	5.0	5.0	
Effective Green, g (s)	45.0			45.0			5.0		5.0	5.0	5.0	
Actuated g/C Ratio	0.56			0.56			0.06		0.06	0.06	0.06	
Clearance Time (s)	6.0			6.0			6.0		6.0	6.0	6.0	
Vehicle Extension (s)	0.2			0.2			0.2		0.2	0.2	0.2	
Lane Grp Cap (vph)	1616			1490			67		96	80		
v/s Ratio Prot	0.32			c0.36			c0.07		c0.08	0.02		
v/s Ratio Perm												
v/c Ratio	0.56			0.64			1.11		1.31	0.31		
Uniform Delay, d1	11.2			11.9			37.5		37.5	35.9		
Progression Factor	1.00			1.00			1.00		1.00	1.00		
Incremental Delay, d2	1.4			2.1			142.9		196.9	10.0		
Delay (s)	12.6			14.0			180.4		234.4	45.8		
Level of Service	B			B			F		F	D		
Approach Delay (s)	12.6			14.0			180.4			175.7		
Approach LOS	B			B			F			F		
Intersection Summary												
HCM 2000 Control Delay	40.3			HCM 2000 Level of Service			D					
HCM 2000 Volume to Capacity ratio	0.70											
Actuated Cycle Length (s)	80.0			Sum of lost time (s)			22.0					
Intersection Capacity Utilization	75.0%			ICU Level of Service			D					
Analysis Period (min)	15											
c Critical Lane Group												

Queues  
1: Lee Avenue & Ocean Avenue

Existing Plus Developer's Option AM Split Phasing

04/18/2019



Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	912	965	184	126	57
v/c Ratio	0.56	0.64	1.04	1.31	0.51
Control Delay	12.9	14.0	97.9	231.5	36.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	12.9	14.0	97.9	231.5	36.6
Queue Length 50th (ft)	141	154	~40	~82	11
Queue Length 95th (ft)	194	217	#167	#187	#57
Internal Link Dist (ft)	187	204	143		276
Turn Bay Length (ft)					
Base Capacity (vph)	1617	1505	177	96	112
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.56	0.64	1.04	1.31	0.51

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis  
1: Lee Avenue & Ocean Avenue

Existing Plus Developer's Option PM Split  
04/18/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↓			↑↓		↔	↔		↑	↑↓	
Traffic Volume (vph)	0	863	22	0	852	151	26	46	87	116	29	54
Future Volume (vph)	0	863	22	0	852	151	26	46	87	116	29	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0			6.0		6.0	6.0	
Lane Util. Factor	0.95				0.95			1.00		1.00	1.00	
Frpb, ped/bikes	0.99				0.90			0.83		1.00	0.82	
Flpb, ped/bikes	1.00				1.00			1.00		1.00	1.00	
Fr <sub>t</sub>	1.00				0.98			0.93		1.00	0.90	
Flt Protected	1.00				1.00			0.99		0.95	1.00	
Satd. Flow (prot)	2848				2560			1077		1540	1204	
Flt Permitted	1.00				1.00			0.99		0.95	1.00	
Satd. Flow (perm)	2848				2560			1077		1540	1204	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	908	23	0	897	159	27	48	92	122	31	57
RTOR Reduction (vph)	0	2	0	0	18	0	0	55	0	0	53	0
Lane Group Flow (vph)	0	929	0	0	1038	0	0	112	0	122	35	0
Confl. Peds. (#/hr)	441		198	198		441	145		183	183		145
Confl. Bikes (#/hr)			10			30			30			30
Bus Blockages (#/hr)	0	5	0	0	5	0	0	0	0	0	0	0
Parking (#/hr)		0			0			5				
Turn Type	NA				NA			Split	NA		Split	NA
Protected Phases	2				6			10	10		4	4
Permitted Phases												
Actuated Green, G (s)	45.0				45.0			5.0		5.0	5.0	
Effective Green, g (s)	45.0				45.0			5.0		5.0	5.0	
Actuated g/C Ratio	0.56				0.56			0.06		0.06	0.06	
Clearance Time (s)	6.0				6.0			6.0		6.0	6.0	
Vehicle Extension (s)	0.2				0.2			0.2		0.2	0.2	
Lane Grp Cap (vph)	1602				1440			67		96	75	
v/s Ratio Prot	0.33				c0.41			c0.10		c0.08	0.03	
v/s Ratio Perm												
v/c Ratio	0.58				0.72			1.67		1.27	0.46	
Uniform Delay, d1	11.4				12.9			37.5		37.5	36.2	
Progression Factor	1.00				1.00			1.00		1.00	1.00	
Incremental Delay, d2	1.5				3.1			356.6		181.1	19.0	
Delay (s)	12.9				16.0			394.1		218.6	55.2	
Level of Service	B				B			F		F	E	
Approach Delay (s)	12.9				16.0			394.1			150.1	
Approach LOS	B				B			F			F	
Intersection Summary												
HCM 2000 Control Delay	53.4				HCM 2000 Level of Service			D				
HCM 2000 Volume to Capacity ratio	0.81											
Actuated Cycle Length (s)	80.0				Sum of lost time (s)			22.0				
Intersection Capacity Utilization	74.0%				ICU Level of Service			D				
Analysis Period (min)	15											
c Critical Lane Group												

## Queues

## 1: Lee Avenue &amp; Ocean Avenue

## Existing Plus Developer's Option PM Split Phasing

04/18/2019



Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	931	1056	167	122	88
v/c Ratio	0.58	0.72	1.37	1.27	0.69
Control Delay	13.1	16.0	232.9	216.6	45.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	13.1	16.0	232.9	216.6	45.7
Queue Length 50th (ft)	145	181	~82	~78	15
Queue Length 95th (ft)	201	258	#204	#182	#86
Internal Link Dist (ft)	187	204	143		276
Turn Bay Length (ft)					
Base Capacity (vph)	1603	1457	122	96	128
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.58	0.72	1.37	1.27	0.69

## Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis      Existing Plus Add. Housing Option AM Split  
 1: Lee Avenue & Ocean Avenue      04/18/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	858	11	0	807	67	25	21	131	107	10	31
Future Volume (vph)	0	858	11	0	807	67	25	21	131	107	10	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0			6.0		6.0	6.0	
Lane Util. Factor	0.95				0.95			1.00		1.00	1.00	
Frpb, ped/bikes	0.99				0.96			0.85		1.00	0.84	
Flpb, ped/bikes	1.00				1.00			1.00		1.00	1.00	
Fr <sub>t</sub>	1.00				0.99			0.90		1.00	0.89	
Flt Protected	1.00				1.00			0.99		0.95	1.00	
Satd. Flow (prot)	2873				2746			1082		1540	1205	
Flt Permitted	1.00				1.00			0.99		0.95	1.00	
Satd. Flow (perm)	2873				2746			1082		1540	1205	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	903	12	0	849	71	26	22	138	113	11	33
RTOR Reduction (vph)	0	1	0	0	8	0	0	112	0	0	31	0
Lane Group Flow (vph)	0	914	0	0	912	0	0	74	0	113	13	0
Confl. Peds. (#/hr)	214		168	168		214	91		73	73		91
Confl. Bikes (#/hr)			10			30			30			30
Bus Blockages (#/hr)	0	5	0	0	5	0	0	0	0	0	0	0
Parking (#/hr)		0			0			5				
Turn Type	NA				NA			Split	NA		Split	NA
Protected Phases	2				6			10	10		4	4
Permitted Phases												
Actuated Green, G (s)	45.0				45.0			5.0		5.0	5.0	
Effective Green, g (s)	45.0				45.0			5.0		5.0	5.0	
Actuated g/C Ratio	0.56				0.56			0.06		0.06	0.06	
Clearance Time (s)	6.0				6.0			6.0		6.0	6.0	
Vehicle Extension (s)	0.2				0.2			0.2		0.2	0.2	
Lane Grp Cap (vph)	1616				1544			67		96	75	
v/s Ratio Prot	0.32				c0.33			c0.07		c0.07	0.01	
v/s Ratio Perm												
v/c Ratio	0.57				0.59			1.11		1.18	0.17	
Uniform Delay, d1	11.2				11.5			37.5		37.5	35.5	
Progression Factor	1.00				1.00			1.00		1.00	1.00	
Incremental Delay, d2	1.4				1.7			143.5		147.2	5.0	
Delay (s)	12.7				13.1			181.0		184.7	40.5	
Level of Service	B				B			F		F	D	
Approach Delay (s)	12.7				13.1			181.0			144.3	
Approach LOS	B				B			F			F	
Intersection Summary												
HCM 2000 Control Delay	36.7				HCM 2000 Level of Service			D				
HCM 2000 Volume to Capacity ratio	0.65											
Actuated Cycle Length (s)	80.0				Sum of lost time (s)			22.0				
Intersection Capacity Utilization	69.4%				ICU Level of Service			C				
Analysis Period (min)	15											
c Critical Lane Group												

## Queues

## Existing Plus Add. Housing Option AM Split Phasing

1: Lee Avenue &amp; Ocean Avenue

04/18/2019



Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	915	920	186	113	44
v/c Ratio	0.57	0.59	1.04	1.18	0.42
Control Delay	12.9	13.2	97.2	184.9	29.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	12.9	13.2	97.2	184.9	29.4
Queue Length 50th (ft)	142	143	~40	~69	5
Queue Length 95th (ft)	195	200	#166	#168	37
Internal Link Dist (ft)	187	204	143		276
Turn Bay Length (ft)					
Base Capacity (vph)	1617	1551	179	96	106
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.57	0.59	1.04	1.18	0.42

## Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis      Existing Plus Add. Housing Option PM Split  
 1: Lee Avenue & Ocean Avenue      04/18/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	863	22	0	856	157	26	62	87	130	29	56
Future Volume (vph)	0	863	22	0	856	157	26	62	87	130	29	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0			6.0		6.0	6.0	
Lane Util. Factor	0.95				0.95			1.00		1.00	1.00	
Frpb, ped/bikes	0.99				0.90			0.84		1.00	0.82	
Flpb, ped/bikes	1.00				1.00			1.00		1.00	1.00	
Fr <sub>t</sub>	1.00				0.98			0.93		1.00	0.90	
Flt Protected	1.00				1.00			0.99		0.95	1.00	
Satd. Flow (prot)	2848				2550			1106		1540	1199	
Flt Permitted	1.00				1.00			0.99		0.95	1.00	
Satd. Flow (perm)	2848				2550			1106		1540	1199	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	908	23	0	901	165	27	65	92	137	31	59
RTOR Reduction (vph)	0	2	0	0	19	0	0	45	0	0	55	0
Lane Group Flow (vph)	0	929	0	0	1047	0	0	139	0	137	35	0
Confl. Peds. (#/hr)	441		198	198		441	145		183	183		145
Confl. Bikes (#/hr)			10			30			30			30
Bus Blockages (#/hr)	0	5	0	0	5	0	0	0	0	0	0	0
Parking (#/hr)		0			0			5				
Turn Type	NA				NA			Split	NA		Split	NA
Protected Phases	2				6			10	10		4	4
Permitted Phases												
Actuated Green, G (s)	45.0				45.0			5.0		5.0	5.0	
Effective Green, g (s)	45.0				45.0			5.0		5.0	5.0	
Actuated g/C Ratio	0.56				0.56			0.06		0.06	0.06	
Clearance Time (s)	6.0				6.0			6.0		6.0	6.0	
Vehicle Extension (s)	0.2				0.2			0.2		0.2	0.2	
Lane Grp Cap (vph)	1602				1434			69		96	74	
v/s Ratio Prot	0.33				c0.41			c0.13		c0.09	0.03	
v/s Ratio Perm												
v/c Ratio	0.58				0.73			2.01		1.43	0.47	
Uniform Delay, d1	11.4				13.0			37.5		37.5	36.2	
Progression Factor	1.00				1.00			1.00		1.00	1.00	
Incremental Delay, d2	1.5				3.3			503.5		242.0	19.8	
Delay (s)	12.9				16.3			541.0		279.5	56.0	
Level of Service	B				B			F		F	E	
Approach Delay (s)	12.9				16.3			541.0			190.9	
Approach LOS	B				B			F			F	
Intersection Summary												
HCM 2000 Control Delay	71.5				HCM 2000 Level of Service			E				
HCM 2000 Volume to Capacity ratio	0.86											
Actuated Cycle Length (s)	80.0				Sum of lost time (s)			22.0				
Intersection Capacity Utilization	78.3%				ICU Level of Service			D				
Analysis Period (min)	15											
c Critical Lane Group												

## Queues

## 1: Lee Avenue &amp; Ocean Avenue

## Existing Plus Add. Housing Option PM Split Phasing

04/18/2019



Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	931	1066	184	137	90
v/c Ratio	0.58	0.73	1.61	1.43	0.69
Control Delay	13.1	16.2	336.1	274.3	45.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	13.1	16.2	336.1	274.3	45.5
Queue Length 50th (ft)	145	184	~111	~94	15
Queue Length 95th (ft)	201	263	#238	#202	#88
Internal Link Dist (ft)	187	204	143		276
Turn Bay Length (ft)					
Base Capacity (vph)	1603	1453	114	96	130
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.58	0.73	1.61	1.43	0.69

## Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

## Attachment G – Transit Ridership and Capacity Analysis

## Balboa Reservoir

### Local Ridership and Capacity Analysis

#### Directional Muni Line Analysis

Route by Direction	Existing Conditions								Developer's Proposed Option	Additional Housing Option	Existing plus Developer's Proposed Option				Existing plus Additional Housing Option						
	Weekday AM Peak Hour				Weekday PM Peak Hour						Weekday AM Peak Hour	Weekday PM Peak Hour	Weekday AM Peak Hour	Weekday PM Peak Hour	Weekday AM Peak Hour	Weekday PM Peak Hour	Weekday AM Peak Hour	Weekday PM Peak Hour			
	Ridership	Capacity	Utilization	MLP	Ridership	Capacity	Utilization	MLP	AM	PM	AM	PM	Ridership	Utilization	Ridership	Utilization	Ridership	Utilization	Ridership	Utilization	
<b>Northbound</b>																					
8 Bayshore					480	752	64%	Geneva/Paris		3		3		483	64%			483	64%		
28R 19th Avenue Rapid	225	378	60%	Daly City BART Stn					8	8	8	8	233	62%			233	62%			
43 Masonic	367	447	82%	Geneva/Cayuga	149	378	39%	Juna Honda/Claren	4	12	8	20	371	83%	161	43%	375	84%	169	45%	
49 Van Ness/Mission	248	658	38%	Van Ness Ave/Edd	337	752	45%	/an Ness Ave/Edd	8	10	5	12	256	39%	347	46%	253	38%	349	46%	
K Ingleside	925	893	104%	Van Ness IB	859	893	96%	Van Ness Station	12	10	15	17	937	105%	869	97%	940	105%	876	98%	
<i>Subtotal</i>	<i>1,765</i>	<i>2,376</i>	<i>74%</i>	—	<i>1,825</i>	<i>2,775</i>	<i>66%</i>	—	<i>32</i>	<i>35</i>	<i>36</i>	<i>52</i>	<i>1,797</i>	<i>76%</i>	<i>1,860</i>	<i>67%</i>	<i>1,801</i>	<i>76%</i>	<i>1,877</i>	<i>68%</i>	
<b>Southbound</b>																					
8 Bayshore	512	752	68%	neva Ave/Madrid St					6	3	3	3	518	69%			515	68%			
28R 19th Avenue Rapid	126	378	33%	19th Ave/Judah					6	15	15	15	132	35%			141	37%			
43 Masonic	229	441	52%	a Honda Blvd/N	249	378	66%	Geneva/Cayuga	30	37	36	42	259	59%	286	76%	265	60%	291	77%	
49 Van Ness/Mission	601	658	91%	n Ness Ave/Miss	346	752	46%	n Ness Ave/McAlli	3	16	8	17	604	92%	362	48%	609	93%	363	48%	
K Ingleside	584	893	65%	Embarc & Folsom	1,064	893	119%	'an Ness Station O	14	24	21	33	598	67%	1,088	122%	605	68%	1,097	123%	
<i>Subtotal</i>	<i>2,052</i>	<i>3,122</i>	<i>66%</i>	—	<i>1,659</i>	<i>2,023</i>	<i>82%</i>	—	<i>59</i>	<i>77</i>	<i>83</i>	<i>92</i>	<i>2,111</i>	<i>68%</i>	<i>1,736</i>	<i>86%</i>	<i>2,135</i>	<i>68%</i>	<i>1,751</i>	<i>87%</i>	
<b>Eastbound</b>																					
23 Monterey	87	189	46%	Monterey Blvd/Cong	90	189	48%	Diamond/Boswort	2	2	5	7	89	47%	92	49%	92	49%	97	51%	
29 Sunset	356	441	81%	Persia/Naples	260	378	69%	Beverly/Garfield	12	8	10	12	368	83%	268	71%	366	83%	272	72%	
54 Felton	127	189	67%	Vernon/Louisbu	129	189	68%	Howth/Geneva	6	6	7	6	133	70%	135	71%	134	71%	135	71%	
<i>Subtotal</i>	<i>570</i>	<i>819</i>	<i>70%</i>	—	<i>479</i>	<i>756</i>	<i>63%</i>	—	<i>20</i>	<i>16</i>	<i>22</i>	<i>25</i>	<i>590</i>	<i>72%</i>	<i>495</i>	<i>65%</i>	<i>592</i>	<i>72%</i>	<i>504</i>	<i>67%</i>	
<b>Westbound</b>																					
23 Monterey	121	189	64%	odsworth/Rotte	90	189	48%	Diamond/Boswort	0	2	3	5	121	64%	92	49%	124	66%	95	50%	
29 Sunset	225	378	60%	Daly City BART St	203	315	64%	Plymouth/Ocean	2	7	3	10	227	60%	210	67%	228	60%	213	68%	
54 Felton	112	189	59%	Geneva/Cayuga	112	189	59%	Geneva/Cayuga	1	3	3	3	113	60%	115	61%	115	61%	115	61%	
<i>Subtotal</i>	<i>458</i>	<i>756</i>	<i>61%</i>	—	<i>405</i>	<i>693</i>	<i>58%</i>	—	<i>3</i>	<i>12</i>	<i>9</i>	<i>18</i>	<i>461</i>	<i>61%</i>	<i>417</i>	<i>60%</i>	<i>467</i>	<i>62%</i>	<i>423</i>	<i>61%</i>	
<i>Total</i>	<i>4,845</i>	<i>7,073</i>	<i>68%</i>		<i>4,368</i>	<i>6,247</i>	<i>70%</i>		<i>114</i>	<i>140</i>	<i>150</i>	<i>187</i>	<i>4,959</i>	<i>70%</i>	<i>4,508</i>	<i>72%</i>	<i>4,995</i>	<i>71%</i>	<i>4,555</i>	<i>73%</i>	

## Balboa Reservoir

### Regional Ridership and Capacity Analysis

#### Regional Screenline Analysis - Existing plus Project Conditions

Screenline / Operator	Existing Conditions						Developer's Proposed Option	Additional Housing Option	Existing plus Developer's Proposed Option				Existing plus Additional Housing Option					
	AM Peak Hour (Inbound)			PM Peak Hour (Outbound)					AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
	Hourly Ridership	Hourly Capacity	Capacity Utilization	Hourly Ridership	Hourly Capacity	Capacity Utilization			Hour	Hour	Hour	Hour	Hourly Ridership	Capacity Utilization	Hourly Ridership	Capacity Utilization	Hourly Ridership	
<b>East Bay</b>																		
BART	25,399	23,256	109%	24,488	22,784	107%	34	48	45	63	25,433	109%	24,536	108%	25,444	109%	24,551	108%
AC Transit	1,568	2,829	55%	2,256	3,926	57%	0	0	0	0	1,568	55%	2,256	57%	1,568	55%	2,256	57%
Ferries	810	1,170	69%	805	1,615	50%	0	0	0	0	810	69%	805	50%	810	69%	805	50%
<i>Subtotal</i>	<i>27,777</i>	<i>27,255</i>	<i>102%</i>	<i>27,549</i>	<i>28,325</i>	<i>97%</i>	<i>34</i>	<i>48</i>	<i>45</i>	<i>63</i>	<i>27,811</i>	<i>102%</i>	<i>27,597</i>	<i>97%</i>	<i>27,822</i>	<i>102%</i>	<i>27,612</i>	<i>97%</i>
<b>North Bay</b>																		
GGT Bus	1,330	2,543	52%	1,384	2,817	49%	0	0	0	0	1,330	52%	1,384	49%	1,330	52%	1,384	49%
Ferries	1,082	1,959	55%	968	1,959	49%	0	0	0	0	1,082	55%	968	49%	1,082	55%	968	49%
<i>Subtotal</i>	<i>2,412</i>	<i>4,502</i>	<i>54%</i>	<i>2,352</i>	<i>4,776</i>	<i>49%</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>2,412</i>	<i>54%</i>	<i>2,352</i>	<i>49%</i>	<i>2,412</i>	<i>54%</i>	<i>2,352</i>	<i>49%</i>
<b>South Bay</b>																		
BART	14,150	19,367	73%	13,500	18,900	71%	5	7	7	9	14,155	73%	13,507	71%	14,157	73%	13,509	71%
Caltrain	2,171	3,100	70%	2,377	3,100	77%	0	0	0	0	2,171	70%	2,377	77%	2,171	70%	2,377	77%
SamTrans	255	520	49%	141	320	44%	0	0	0	0	255	49%	141	44%	255	49%	141	44%
Ferries	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
<i>Subtotal</i>	<i>16,576</i>	<i>22,987</i>	<i>72%</i>	<i>16,018</i>	<i>22,320</i>	<i>72%</i>	<i>5</i>	<i>7</i>	<i>7</i>	<i>9</i>	<i>16,581</i>	<i>72%</i>	<i>16,025</i>	<i>72%</i>	<i>16,583</i>	<i>72%</i>	<i>16,027</i>	<i>72%</i>
<b>Total All Screenlines</b>	<b>46,765</b>	<b>54,744</b>	<b>85%</b>	<b>45,919</b>	<b>55,421</b>	<b>83%</b>	<b>39</b>	<b>55</b>	<b>52</b>	<b>72</b>	<b>46,804</b>	<b>85%</b>	<b>45,974</b>	<b>83%</b>	<b>46,817</b>	<b>86%</b>	<b>45,991</b>	<b>83%</b>

#### Regional Screenline Analysis - Cumulative Conditions

Screenline / Operator	Cumulative (2040) Conditions						Contribution to Cumulative					
	AM Peak Hour (Inbound)			PM Peak Hour (Outbound)			Option		Option		Option	
	Hourly Ridership	Hourly Capacity	Capacity Utilization	Hourly Ridership	Hourly Capacity	Capacity Utilization	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
<b>East Bay</b>												
BART	38,000	32,100	118%	36,000	32,100	112%	0.11%	0.15%	0.14%	0.20%		
AC Transit	7,000	12,000	58%	7,000	12,000	58%	0.00%	0.00%	0.00%	0.00%		
Ferries	4682	5,940	79%	5319	5,940	90%	0.00%	0.00%	0.00%	0.00%		
<i>Subtotal</i>	<i>49,682</i>	<i>50,040</i>	<i>99%</i>	<i>48,319</i>	<i>50,040</i>	<i>97%</i>	<i>0.07%</i>	<i>0.10%</i>	<i>0.09%</i>	<i>0.13%</i>		
<b>North Bay</b>												
GGT Bus	1,990	2,543	78%	2,070	2,817	73%	0.00%	0.00%	0.00%	0.00%		
Ferries	1,619	1,959	83%	1619	1,959	83%	0.00%	0.00%	0.00%	0.00%		
<i>Subtotal</i>	<i>3,609</i>	<i>4,502</i>	<i>80%</i>	<i>3,689</i>	<i>4,776</i>	<i>77%</i>	<i>0.00%</i>	<i>0.00%</i>	<i>0.00%</i>	<i>0.00%</i>		
<b>South Bay</b>												
BART	21,000	28,808	73%	20,000	28,808	69%	0.02%	0.02%	0.02%	0.03%		
Caltrain	2,310	3,600	64%	2,529	3,600	70%	0.00%	0.00%	0.00%	0.00%		
SamTrans	271	520	52%	150	320	47%	0.00%	0.00%	0.00%	0.00%		
Ferries	59	200	30%	59	200	30%	--	--	--	--		
<i>Subtotal</i>	<i>23,640</i>	<i>33,128</i>	<i>71%</i>	<i>22,738</i>	<i>32,928</i>	<i>69%</i>	<i>0.02%</i>	<i>0.02%</i>	<i>0.02%</i>	<i>0.03%</i>		
<b>Total All Screenlines</b>	<b>76,931</b>	<b>87,670</b>	<b>88%</b>	<b>74,746</b>	<b>87,744</b>	<b>85%</b>	<b>0.04%</b>	<b>0.06%</b>	<b>0.06%</b>	<b>0.08%</b>		

