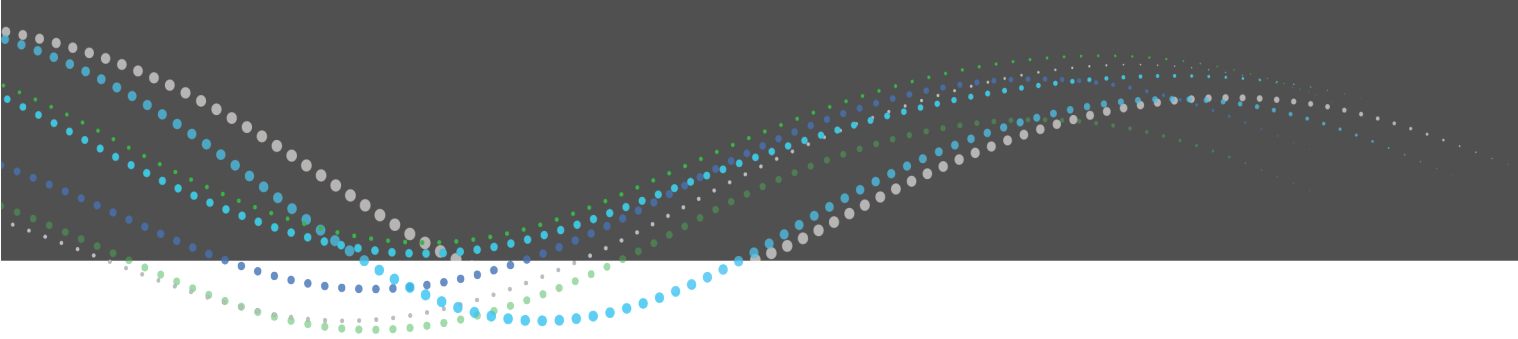




# Mission Street/Meridian Avenue Reconfiguration Alternatives Analysis version 1.0



January 24, 2022

Submitted to:



11515 | Prepared by Iteris, Inc.

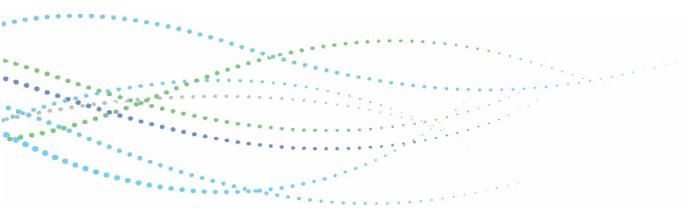
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# Traffic Study of Meridian Avenue and Mission Street

Version 1.0

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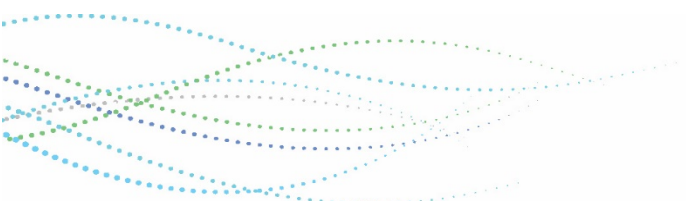




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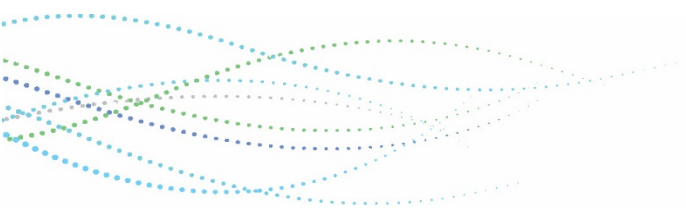
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## 1 PURPOSE

This report presents an analysis of two potential roadway reconfiguration traffic conditions in the City of South Pasadena. The two roadway configurations are the Meridian Avenue closure between El Centro Street and Mission Street and a lane reduction from four through lanes to two through lanes on Mission Street between Fair Oaks Avenue and Orange Grove Avenue.

The report is organized by presenting the key findings, a description of the study methodology, existing conditions analysis, Meridian Avenue closure analysis, and Mission Street lane reduction analysis. The intent of the analysis was to review the potential for vehicle redistribution and the altered roadway configurations on traffic operations as a metric of feasibility to ensure that any roadway reconfiguration would not result in operational deficiencies. The analysis specifically identified the most critical movements—those that would fail operational standard first—to inform the design process and provide the City staff with an operation assessment of conditions under altered roadway configurations and any mitigating actions needed to maintain an acceptable level of operational service at intersections.

## 2 KEY FINDINGS

### 2.1 Meridian Avenue Closure

The closure of Meridian Avenue between Mission Street and El Centro Street would result in increased delay along Fremont Street while reduction in volume along Meridian Avenue. However, the changes would not result in a significant change in operational characteristics in the study area under the analyzed Scenario 1.

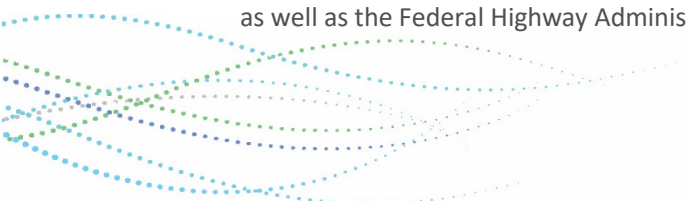
### 2.2 Mission Street Lane Reduction

The lane reduction along Mission Street between Fair Oaks Avenue and Orange Grove Avenue likewise would not result in a significant LOS impact in the study area under the scenarios of the Mission Street Lane Reduction (Scenario 2), Mission Street Lane Reduction and Meridian Avenue Closure (Scenario 3), and the Slow Streets Program Conceptual Plan (Scenario 4).

The queueing and stacking resulting from a lack of turning pocket storage and, more importantly, linear capacity of the through lanes of Mission Street itself may result in spillback into adjacent intersections and limit the ability of intersections to process vehicles. However, the resulting slower speeds due to the roadway configurations are intended to improve multimodal safety conditions in the Mission Street corridor. Furthermore, queuing and stacking conditions that would affect vehicle operations are limited to east-west movement along Mission Street with the exception of additional potential queues southbound at the Mission Street Fremont Street intersection identified in Scenario 4, which could be addressed by extending the southbound left-turn storage from 75 to 165 feet as was modeled in Scenario 3.

## 3 METHODOLOGY

The methodology used for this study relied upon standards and practice consistent with the City's guidelines as well as the Federal Highway Administration's Road Diet Informational Guide which indicates the various





issues when deciding upon a lane reduction. The methodology section describes the following:

- Traffic counts were taken for the study at 18 locations and compared to historic counts to determine factors to apply to increase volumes to a pre-COVID-19 Pandemic condition to enable a conservative analysis of conditions.
- Feasibility analysis of intersection level of service and vehicle queuing for the roadway reconfigurations
- The analysis scenarios conducted and their application in the feasibility analysis.
- Redistribution of traffic volumes due to the roadway reconfigurations
- Lane reduction warning signage and treatment options for implementing the roadway reconfigurations

## 3.1 Traffic Counts

Intersection counts of vehicles, bicycles and pedestrians were counted at 18 intersections for the AM and PM peak hours (7AM to 10AM and 3PM to 6PM) and four road segments were counted for vehicles only for 24-hours. The count summaries are included in Appendix A. Traffic counts from October 6, 2021 showed average daily traffic of approximately 3,000 along Meridian Avenue, and approximately 10,000 along Mission Street.

### Average Daily Traffic

- Meridian Avenue South of Mission Street: 2,898
- Mission Street East of Meridian Avenue: 9,392
- El Centro Street East of Meridian Avenue: 3,040
- Fremont Avenue North of Mission Street: 17,868

### Intersections counted were:

- |  |  |
|--|--|
| 1. Mission Street at Fair Oaks Avenue      | 10. Monterey Road at Fremont Avenue      |
| 2. Mission Street at Fremont Avenue        | 11. Monterey Road at Meridian Avenue     |
| 3. Mission Street at Meridian Avenue       | 12. Monterey Road at Orange Grove Avenue |
| 4. Mission Street at Orange Grove Avenue   | 13. Hope Street at Meridian Avenue       |
| 5. El Centro Street at Fair Oaks Avenue    | 14. Grevelia Street at Fremont Avenue    |
| 6. El Centro Street at Fremont Avenue      | 15. Grevelia Street at Meridian Avenue   |
| 7. El Centro Street at Meridian Avenue     | 16. Mission Street at Diamond Avenue     |
| 8. El Centro Street at Orange Grove Avenue | 17. Mission Street at Fairview Avenue    |
| 9. El Centro Street at Pasadena Avenue     | 18. Mission Street at Pasadena Avenue    |

### 3.1.1 Traffic Count Comparison to Previous Traffic Counts

The traffic counts conducted for this study were compared to those in the January 2017 Traffic Study for the Mission Mixed Use Development Project (Gibson Transportation Consulting) and the South Pasadena General Plan Update (GPU) Traffic Study (March 23, 2018, Nelson/Nygaard). Comparing common locations, the 2017 traffic study's volumes were overall one percent higher than the counts in 2021, and the 2018 GPU Traffic Study counts were 17 percent higher than the 2021 counts. For the 2018 GPU Traffic Study counts, the higher volumes were predominantly in the eastbound, and to a lesser degree westbound, direction. Therefore, the existing conditions analysis applied a 15 percent growth factor to the studied traffic count turning movements as a worst-case traffic condition under the feasibility analysis.



### 3.1.2 Bicycle and Pedestrian Activity

Bicycle and pedestrian volumes were counted along with vehicle counts at the study intersections. **Table 1** is a summary of the six-hour total of the AM peak hours of 7AM to 10AM and PM peak hours of 3PM to 6PM.

**Table 1: Bicycle and Pedestrian Counts During the AM and PM Peak Hours**

#	Intersection	Bicycles	Pedestrians
1	Mission Street at Fair Oaks Avenue	121	767
2	Mission Street at Fremont Avenue	99	516
3	Mission Street at Meridian Avenue	134	917
4	Mission Street at Orange Grove Avenue	106	275
5	El Centro Street at Fair Oaks Avenue	55	434
6	El Centro Street at Fremont Avenue	50	377
7	El Centro Street at Meridian Avenue	106	650
8	El Centro Street at Orange Grove Avenue	70	403
9	El Centro Street at Pasadena Avenue	67	226
10	Monterey Road at Fremont Avenue	2	355
11	Monterey Road at Meridian Avenue	37	311
12	Monterey Road at Orange Grove Avenue	33	177
13	Hope Street at Meridian Avenue	33	241
14	Grevelia Street at Fremont Avenue	6	34
15	Grevelia Street at Meridian Avenue	17	165
16	Mission Street at Diamond Avenue	119	410
17	Mission Street at Fairview Avenue	110	446
18	Mission Street at Pasadena Avenue	68	77

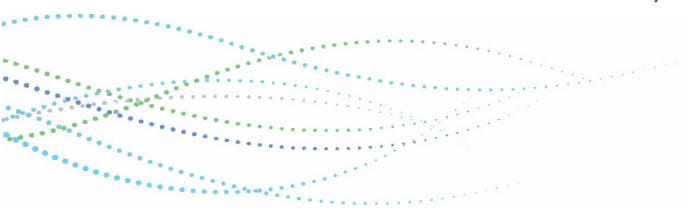
## 3.2 Feasibility Analysis

Technical feasibility of project alternative scenarios are based on the following consistent with City of South Pasadena Guidelines:

- Intersection Level of Service
- Queuing – Available Storage and Blockage of Movement

If an impact is identified by the following thresholds, potential mitigation measures (e.g. signal timing, turn lane addition or lengthening) will be recommended and analyzed to determine if a feasible mitigation is possible within the City's intersection operation threshold.

Both the Synchro and SimTraffic software is used for the analysis. Synchro is a statistical model used to determine macro level LOS and delay at intersections.





SimTraffic is a microscopic model used to simulate a performance through individually tracking each modeled vehicle through the model with operational measures of effectiveness are collected on every vehicle during each 0.1-second of the simulation. Unlike Synchro, SimTraffic measures the impact of queuing and blocking on adjacent intersections. For example, both calculate the 95th percentile queue length but Synchro does not take into account spillback from insufficiently long turn pockets that would block other movements.

## 3.2.1 Intersection Level of Service

### Signalized Intersections

The intersection average control delay will be calculated using the most recent Highway Capacity Manual (HCM) methodology. An impact would occur at a signalized study intersection if the scenario reduces the peak hour LOS of the study intersection from an acceptable operation (LOS A, B, C, or D) to a deficient operation (LOS E or F). An impact would occur at a signalized study intersection already operating deficiently (LOS E or F) prior to project traffic if the addition of project traffic increases the critical movement delay by four (4) or more seconds.

### Unsignalized Intersections

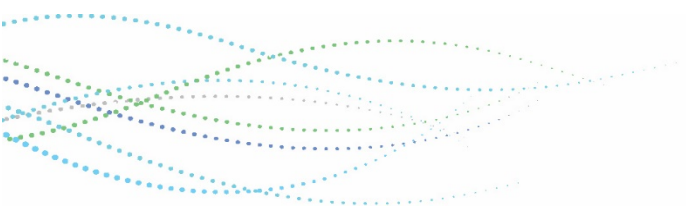
Impacts occur with the addition of project traffic causes the average intersection delay for all-way stop controlled intersection or the worst movement for side-street stop-controlled intersections to degrade to LOS E or LOS F and the intersection satisfies any traffic signal warrant from the latest edition of the California Manual on Uniform Traffic Control Devices (CA-MUTCD). The delay (in seconds) will be calculated with the latest Highway Capacity Manual intersection analysis methodology.

## 3.2.2 Queuing

An impact would occur when the proposed project traffic causes the 95th percentile queue in a left or right turn lane/pocket to extend beyond the turn pocket by 25 feet or more into adjacent traffic lanes that operator separately from a left or right turn length. When the vehicle queue length already exceeds that turn lane/pocket length, a queuing deficiency would occur if project traffic lengthens the queue by 25 feet or more.

Metrics of queuing analyzed are the 95<sup>th</sup> percentile queue, storage block time and upstream block time.

- The 95th Queue is the 95th percentile of the reported maximum queue over the simulated period. While the 95th percentile queues may show how long a queue is, the block time shows for how long of the simulated hour the queue will block intersections or storage bays.
- Storage block time is an estimated percentage of the peak hour in which the length of the through or turning queues exceeds the storage length.
- Upstream block time is an estimated percentage of the peak hour in which the queue from the intersection blocks upstream (entering) traffic from the movement. This represents spillback congestion caused by either blocked lanes or inadequate green time to process the demand of vehicles.







## 3.3 Analysis Scenarios

Five analysis scenarios were conducted in software that models the transportation system of the study area. The Synchro outputs were used to analyze the delay and resulting level of service at the intersection level in the study area comparing each of the scenarios to existing conditions. The analysis scenarios are:

- Scenario 1: Meridian Avenue Closure
- Scenario 2: Mission Street Lane Reduction
- Scenario 3: Meridian Avenue Closure and Mission Street Lane Reduction
- Scenario 4: Mission Street Lane Reduction – Slow Streets Program Conceptual Plans

The SimTraffic outputs were used to show the queuing and blockage at the four primary signalized intersections along Mission Street from Fair Oaks Avenue to Orange Grove Avenue. The SimTraffic analysis was only analyzed for Existing Conditions and Scenarios 3 and 4 as they were the scenarios with the most impact to intersection operations. The Synchro output sheets are included in Appendix A and the SimTraffic Output sheets are included in Appendix B.

## 3.4 Volume Redistribution Analysis

In determining feasibility of the closure of Meridian Avenue and lane reduction on Mission Street, a key component is the volume changes due to changes in the roadway network.

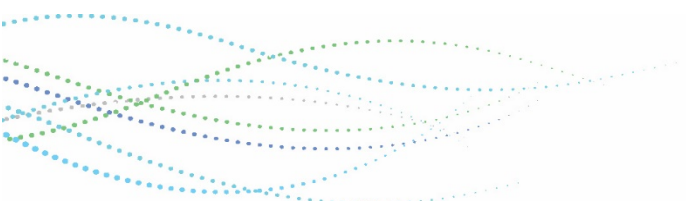
The Meridian Avenue closure is expected to have a major implication for Meridian Avenue and El Centro Street south of Mission Street and some reduction of southbound Meridian Avenue volume north of Mission Street. On October 6, 2021 3,000 daily trips were counted along Meridian Avenue south of Mission Street.

The Mission Street lane reduction effect on volumes is expected to be minimal as 1) there are few end-to-end “through trips” and 2) the roadway operates below capacity—likely below the capacity of a two lane roadway—under existing conditions. The second point was confirmed by the Mission Street daily traffic count values of 9,400 for the count taken October 6, 2021, which so volumes significantly below capacity.

The regional travel demand model was used a tool to help estimate potential re-routed traffic volumes due to diversion of traffic and a growth factor to be used to forecast 2040 conditions. The regional travel demand model has issues of scale and granularity in study area and therefore was only used as a general guide for proportional distribution among routes rather than used for absolute volumes or specific distribution values from the modeling exercise.

Forecasted traffic pattern changes due to the roadway modifications used in this analysis are:

- **Mission Street Lane Reduction:** traffic volumes in the analysis were not reduced due to lane reductions on Mission Street.
- **Meridian Avenue Closure:** The rerouting of traffic was based on a conservative approach with limited volume reductions concentrated on Meridian Avenue with redistributed volume primarily to the adjacent north/south roadways of Fremont Avenue and Orange Grove Avenue.





### 3.5 Lane Reduction Warning Signage and Striping Treatments

The Mission Street through lane reduction may occur through a lane drop at an intersection—forcing a previous through movement into a left or right turn or through a lane reduction transition at a midblock location. The lane reductions should be marked with signage and pavement markings to make the change in through lane conditions along the street. Warning signs and markings should be consistent with the [Manual on Uniform Traffic Control Devices \(MUTCD\)](#).

On the east end of Mission Street the lane reduction should occur west of Mound Avenue to provide two receiving lanes from Fair Oaks Boulevard to continue to allow southbound right-turns and northbound left-turns to occur simultaneously. The lane drop should occur in a westbound left-turn lane at Fremont Avenue (expanding the existing left-turn lane pocket) due to the bus stop at the outside lane. This would also allow for additional signal phase time devoted to the heavier north/south movements at the intersection.

On the west end of the street options for the lane reduction a lane drop into the eastbound left turn at Orange Grove Avenue (east intersection) or a midblock lane reduction transition east of the Orange Grove Avenue intersection.

#### 3.5.1 Lane Reduction Transition Signage and Markings

The length of lane drop taper for a roadway below 40 miles per hour should be the 85<sup>th</sup> percentile design speed squared multiplied by the offset (lane drop width) in feet and divided by 60. Therefore a 10-foot lane dropping on a 30 mile per hour street would have a 150-foot taper ( $30^2 \times 10 / 60 = 150$ )

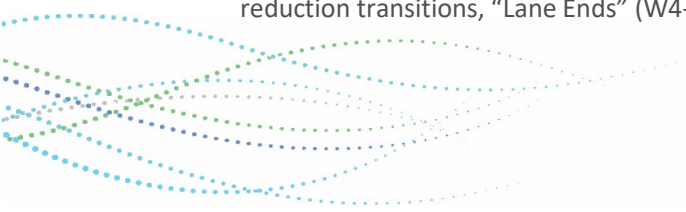
“Lane Ends” (W4-2) sign should be used to warn of the reduction in the number of traffic lanes in the direction of travel on a multi-lane highway. A “Right/Left Lane Ends” (W9-1) sign may be used in advance of the “Lane Ends” (W4-2) sign. “Lane Ends” (W4-2) symbol sign should be installed in advance of the downstream end of the extra lane. **Figure 1** shows “Lane Ends” signs from the MUTCD.

Figure 1: Lane Ends Signs



Source: 2014 California Manual on Uniform Traffic Control Devices (MUTCD), Revision 6

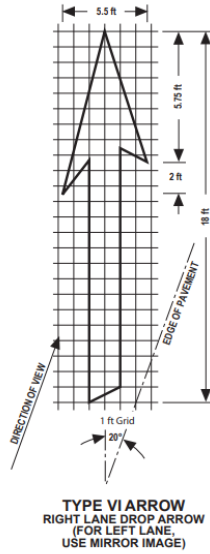
Lane-reduction transition markings Type VI are used where the number of through lanes is reduced because of narrowing of the roadway. Lane-reduction transition markings are not used for lane drops. For lane reduction transitions, “Lane Ends” (W4-2) sign should be installed adjacent to the “Lane-Reduction Arrow”





pavement markings. **Figure 2** shows the standard type VI arrow for lane reduction from the MUTCD.

**Figure 2: Standard Type VI Arrow for Lane Reduction**



Source: 2014 California Manual on Uniform Traffic Control Devices (MUTCD), Revision 6

**Figure 3** shows an example signage and striping for a lane reduction at a midblock location from the MUTCD. Note specifically the top example for the two-lane transition to one-lane at 35 miles per hour, which would be similar to the conditions along Mission Street.

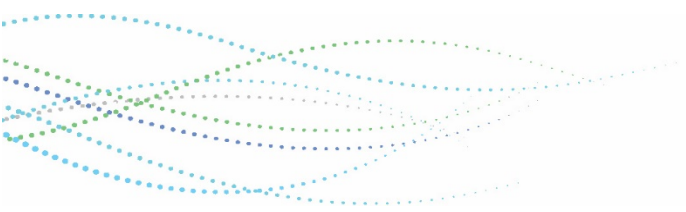
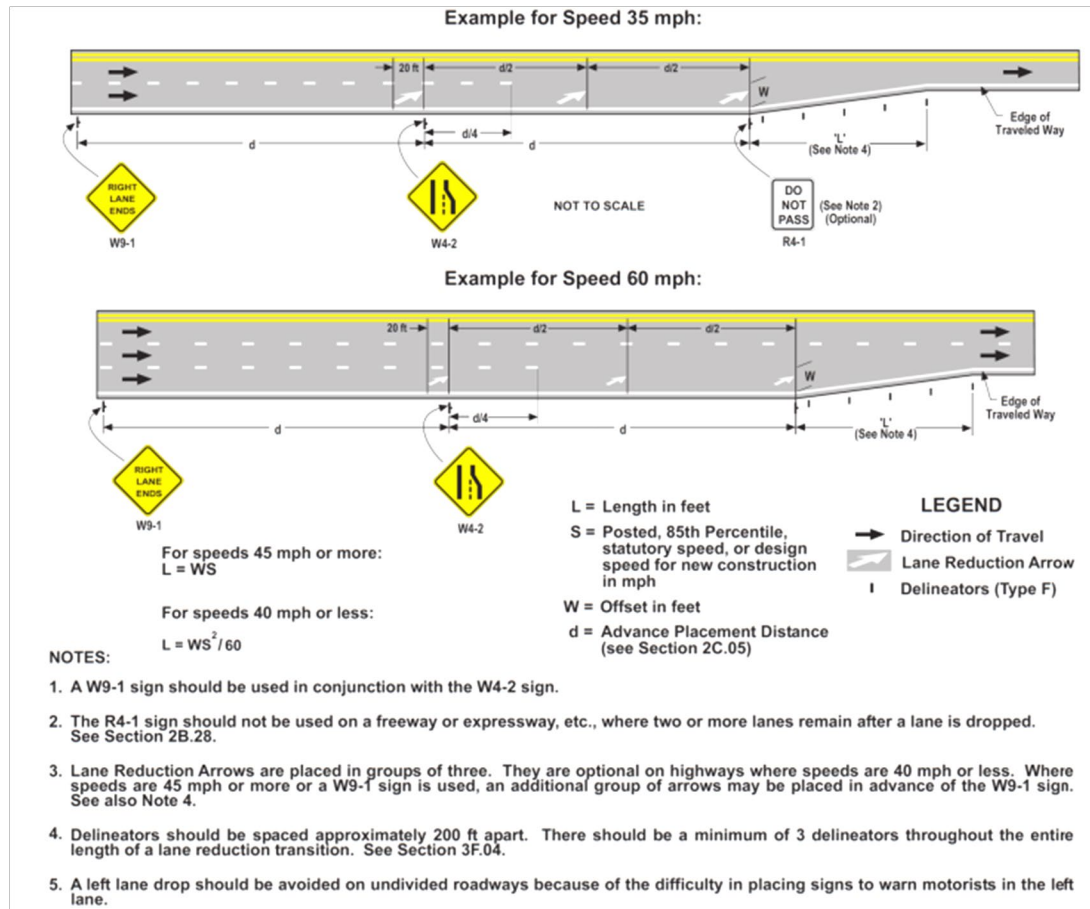




Figure 3: Lane Reduction Transition Markings



Source: 2014 California Manual on Uniform Traffic Control Devices (MUTCD), Revision 6

### Lane Drop Signage and Markings

In dropped lane situations, regulatory signs shall be used to inform road users that a through lane is becoming a mandatory turn lane. Mandatory movement lane control (R3-5, R3-5a, and R3-7) sign shall indicate only the single vehicle movement that is required from the lane. If used, the mandatory movement lane control sign shall be located in advance of the intersection, such as near the upstream end of the mandatory movement lane, and/or at the intersection where the regulation applies. **Figure 4** shows mandatory movement lane control signs from the MUTCD.

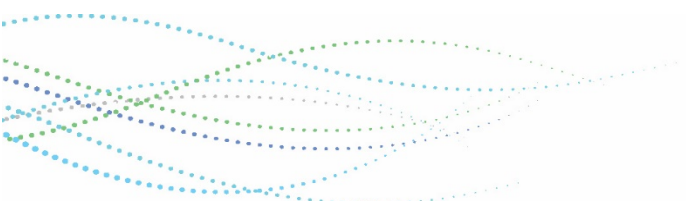




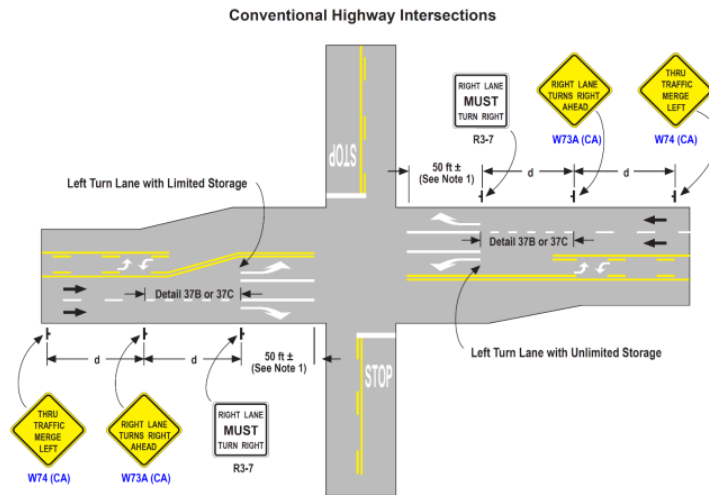
Figure 4: Mandatory Movement Lane Control Signs



Source: 2014 California Manual on Uniform Traffic Control Devices (MUTCD), Revision 6

Figure 5 shows example application of lane-reduction transition markings at an intersection from the MUTCD.

Figure 5: Examples of Applications of Lane-Reduction Transition Markings for Intersections



NOTES:

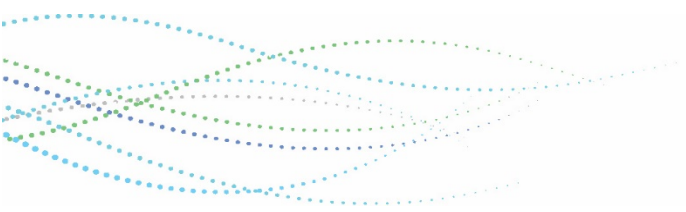
1. See Figure 3B-101 for taper and storage lengths. See Detail 37B and 37C for lane drop markings. The minimum length of solid channelizing line is 50 ft. However, if using Detail 37C, the minimum length will be 48 ft.
2. The RIGHT LANE TURNS RIGHT AHEAD, (W73A (CA)) sign should be placed in conjunction with the RIGHT LANE MUST TURN RIGHT (R3-7) sign and the appropriate lane line and markings. A THRU TRAFFIC MERGE LEFT (W74 (CA)) sign may be placed in advance of the W73A (CA) sign. However, adequate sight distance or proximity to a freeway ramp, cross road, etc., may dictate the need and location of additional signs and the length of the turn lane.

LEGEND

- Direction of Travel
- ▬ Pavement Arrows
- † Sign Location
- d = Advance Placement Distance (see Section 2C.05)

NOT TO SCALE

Source: 2014 California Manual on Uniform Traffic Control Devices (MUTCD), Revision 6



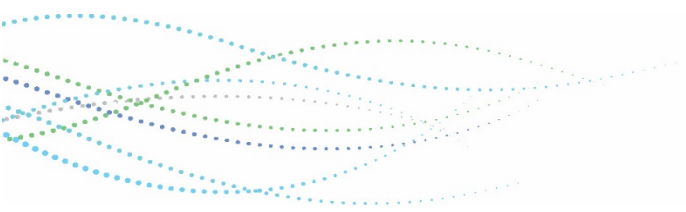


## 4 EXISTING CONDITIONS ANALYSIS

Synchro 11 software was used to analyze the transportation system of the study area. The software models intersection and adjacent road segment performance based on signal phasing, lane configurations and demand for the use of the facility. The study area includes a mix of signalized, four-way stop-controlled and two-way stop-controlled intersections. **Table 2** summarizes the average delay (experienced by vehicles) by movement (turning movement lane group), approach (all vehicles approach from a direction), and for the total intersection. Intersections shaded in gray are two-way stop-controlled intersections (the primary road does not stop). The Synchro output sheets are included in Appendix B.

The City's standard for acceptable operation is LOS D. All study intersections operate at LOS D or better in the peak hours under the existing conditions analysis. However, there are specific turn movements and approaches that operate at LOS E or F. These movements and approaches indicate critical movements to review when comparing to the other scenarios. Critical movements are those where the relationship between the arrival of vehicles and maximum processing ability result in the longest green interval which has a decisive influence on the signal cycle time.

The intersection of Mission Street and Fair Oaks Avenue has movements of the westbound through and northbound left exceeding LOS E in both peak hours and the eastbound through and southbound left in the PM peak hour. Based on this information, it was recommended the lane reduction of Mission Street occur west of Mound Avenue to accommodate queuing from these intersection movements.





# Traffic Study of Meridian Avenue and Mission Street

Version 1.0

**Table 2: Intersection Delay and Level of Service**

Intersection #	Intersection Location	Move	AM Peak Hour						PM Peak Hour					
			Move		Approach		Intersection		Move		Approach		Intersection	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	Mission Street/Fair Oaks Avenue	EBL	35.6	D	37.7	D	32.3	C	45.0	D	63.9	E	42.5	D
		EBT	38.3	D					69.7	E				
		EBR	-	-					-	-				
		WBL	33.6	C	68.1	E			39.4	D	63.1	E		
		WBT	71.1	E					66.0	E				
		WBR	-	-					-	-				
		NBL	58.1	E	25.5	C			64.5	E	26.3	C		
		NBT	23.0	C					23.2	C				
		NBR	-	-					-	-				
		SBL	54.7	D	24.6	C			70.6	E	41.2	D		
		SBT	21.9	C					38.3	D				
SBR	-	-	-	-										
2	Mission Street/Fremont Avenue	EBL	26.8	C	21.1	C	21.4	C	21.9	C	24.4	C	19.8	B
		EBT	20.4	C					24.7	C				
		EBR	-	-					-	-				
		WBL	23.4	C	25.7	C			27.1	C	22.6	C		
		WBT	25.9	C					22.1	C				
		WBR	-	-					-	-				
		NBL	14.7	B	23.7	C			4.9	A	15.0	B		
		NBT	25.5	C					17.1	B				
		NBR	7.2	A					0.3	A				
		SBL	15.5	B	16.0	B			29.7	C	20.4	C		
		SBT	16.4	B					19.4	B				
SBR	2.2	A	2.8	A										
3	Mission Street/Meridian Avenue	EBL2	-	-	26.3	C	28.7	C	-	-	25.2	C	27.6	C
		EBT	26.3	C					25.2	C				
		EBR	-	-					-	-				
		WBL2	-	-	26.4	C			-	-	24.9	C		
		WBT	26.4	C					24.9	C				
		WBR	-	-					-	-				
		NBL	-	-	36.9	D			-	-	36.3	D		
		NBT	36.9	D					36.3	D				
		NBR2	-	-					-	-				
		SBL	-	-	28.3	C			-	-	33.5	C		
		SBT	28.3	C					33.5	C				
SBR2	-	-	-	-										





Table 2: Intersection Delay and Level of Service (Cont.)

Intersection #	Location	Move	AM Peak Hour						PM Peak Hour							
			Move		Approach		Intersection		Move		Approach		Intersection			
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS		
4	Mission Street/ Orange Grove Avenue	EBL	20.3	C	12.5	B	9.9	A	13.4	B	7.9	A	7.6	A		
		EBT	4.3	A					4.5	A						
		EBR	-	-					-	-						
		WBL	-	-	3.3	A			-	-	3.8	A			3.8	A
		WBT	3.3	A					3.8	A						
		WBR	-	-					-	-						
		NBL	-	-	0.0	A			-	-	0.0	A			0.0	A
		NBT	-	-					-	-						
		NBR	-	-					-	-						
		SBL	14.0	B	12.3	B			13.8	B	12.2	B			12.2	B
		SBT	-	-					-	-						
SBR	8.8	A	8.7	A												
5	El Centro Street/ Fair Oaks Avenue	EBL	-	-	39.5	D	5.7	A	-	-	45.1	D	13.0	B		
		EBT	39.5	D					45.1	D						
		EBR	-	-					-	-						
		WBL	-	-	40.5	D			-	-	29.5	C			29.5	C
		WBT	40.5	D					29.5	C						
		WBR	-	-					-	-						
		NBL	3.3	A	4.8	A			7.0	A	8.3	A			8.3	A
		NBT	4.9	A					8.4	A						
		NBR	-	-					-	-						
		SBL	1.4	A	2.8	A			4.1	A	11.3	B			11.3	B
		SBT	2.8	A					11.4	B						
SBR	-	-	-	-												
6	El Centro Street/ Fremont Avenue	EBL	-	-	23.4	C	23.7	C	-	-	23.6	C	26.1	C		
		EBT	23.4	C					23.6	C						
		EBR	-	-					-	-						
		WBL	-	-	19.8	B			-	-	19.9	B			19.9	B
		WBT	19.8	B					19.9	B						
		WBR	-	-					-	-						
		NBL	9.3	A	25.7	C			8.0	A	36.6	D			36.6	D
		NBT	26.6	C					37.5	D						
		NBR	-	-					-	-						
		SBL	4.2	A	22.0	C			9.4	A	16.0	B			16.0	B
		SBT	22.1	C					16.2	B						
SBR	-	-	-	-												

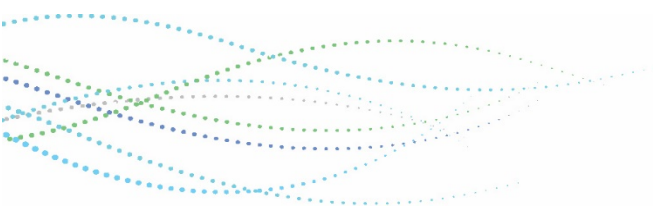






Table 2: Intersection Delay and Level of Service (Cont.)

Intersection #	Location	Move	AM Peak Hour						PM Peak Hour					
			Move		Approach		Intersection		Move		Approach		Intersection	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
7	El Centro Street/ Meridian Avenue	EBL	-	-	12.5	B	13.0	B	-	-	10.7	B	10.9	B
		EBT	-	-					-	-				
		EBR	-	-					-	-				
		WBL	-	-	11.7	B			-	-	10.7	B		
		WBT	-	-					-	-				
		WBR	-	-					-	-				
		NBL	-	-	14.9	B			-	-	11.5	B		
		NBT	-	-					-	-				
		NBR	-	-					-	-				
		SBL	-	-	11.4	B			-	-	10.7	B		
		SBT	-	-					-	-				
SBR	-	-	-	-										
8	El Centro Street/ Orange Grove Avenue	EBL	-	-	9.5	A	9.4	A	-	-	9.1	A	8.9	A
		EBT	-	-					-	-				
		EBR	-	-					-	-				
		WBL	-	-	9.5	A			-	-	8.7	A		
		WBT	-	-					-	-				
		WBR	-	-					-	-				
		NBL	-	-	9.1	A			-	-	8.7	A		
		NBT	-	-					-	-				
		NBR	-	-					-	-				
		SBL	-	-	9.5	A			-	-	8.8	A		
		SBT	-	-					-	-				
SBR	-	-	-	-										
9	El Centro Street/ Pasadena Avenue	EBL	-	-	9.9	A	3.4	A	-	-	-	-	3.2	A
		EBT	-	-					-	-				
		EBR	-	-					-	-				
		WBL	-	-	10.6	B			-	-	9.9	A		
		WBT	-	-					-	-				
		WBR	-	-					-	-				
		NBL	-	-	-	-			-	-	-	-		
		NBT	-	-					-	-				
		NBR	-	-					-	-				
		SBL	-	-	4.2	A			-	-	2.0	A		
		SBT	-	-					-	-				
SBR	-	-	-	-										

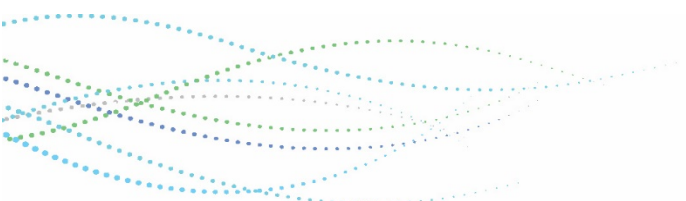




Table 2: Intersection Delay and Level of Service (Cont.)

Intersection #	Location	Move	AM Peak Hour						PM Peak Hour					
			Move		Approach		Intersection		Move		Approach		Intersection	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
11	Monterey Road/ Fremont Avenue	EBL	97.4	F	39.8	D	38.1	D	39.7	D	27.7	C	33.7	C
		EBT	33.3	C					26.7	C				
		EBR	-	-					-	-				
		WBL	105.3	F	33.4	C			33.2	C	22.5	C		
		WBT	22.7	C					21.7	C				
		WBR	-	-					-	-				
		NBL	45.6	D	50.5	D			75.0	E	52.2	D		
		NBT	53.6	D					49.3	D				
		NBR	2.8	A					2.8	A				
		SBL	16.0	B	24.3	C			24.3	C	28.8	C		
		SBT	25.9	C					31.0	C				
SBR	2.7	A	3.8	A										
12	Monterey Road/ Meridian Avenue	EBL	17.4	B	23.8	C	52.8	D	12.3	B	15.1	B	35.8	D
		EBT	24.0	C					15.1	B				
		EBR	-	-					-	-				
		WBL	23.6	C	16.0	B			18.6	B	14.8	B		
		WBT	15.7	B					14.7	B				
		WBR	-	-					-	-				
		NBL	-	-	200.9	F			129.4	F	129.4	F		
		NBT	200.9	F					-	-				
		NBR	-	-					-	-				
		SBL	-	-	19.0	B			17.3	B	17.3	B		
		SBT	19.0	B					-	-				
SBR	-	-	-	-										
13	Monterey Road/ Orange Grove Avenue	EBL	7.4	A	7.1	A	9.7	A	6.5	A	6.0	A	7.7	A
		EBT	7.1	A					6.0	A				
		EBR	-	-					-	-				
		WBL	6.7	A	7.6	A			6.2	A	6.4	A		
		WBT	7.6	A					6.4	A				
		WBR	-	-					-	-				
		NBL	-	-	32.4	C			1.2	A	1.2	A		
		NBT	32.4	C					-	-				
		NBR	-	-					-	-				
		SBL	-	-	50.9	D			43.2	D	43.2	D		
		SBT	50.9	D					-	-				
SBR	-	-	-	-										

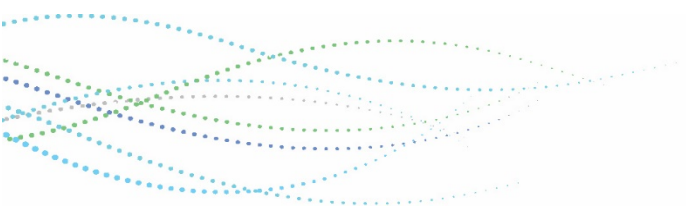




Table 2: Intersection Delay and Level of Service (Cont.)

Intersection		Move	AM Peak Hour				PM Peak Hour							
			Move		Approach		Intersection		Move		Approach		Intersection	
#	Location		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
16	Hope Street/ Meridian Avenue	WBL	-	-	10.0	B	2.5	A	-	-	9.9	A	3.0	A
		WBR	-	-					-	-				
		NBT	-	-	-	-			-	-	-			
		NBR	-	-	-	-			-	-	-			
		SBL	-	-	2.7	A			-	-	2.0	A		
		SBT	-	-					-	-				
17	Grevelia Street/ Fremont Avenue	EBL2	-	-	31.7	C	14.8	B	-	-	33.3	C	16.2	B
		EBT	31.7	C					33.3	C				
		EBR	-	-					-	-				
		WBL2	-	-	32.8	C			-	-	32.7	C		
		WBT	32.8	C					32.7	C				
		WBR	-	-	-	-			-	-	-	-		
		NBL	-	-	14.4	B			-	-	16.4	B		
		NBT	14.4	B					16.4	B				
		NBR2	-	-	-	-			-	-	-	-		
		SBL	-	-	-	-			-	-	-	-		
SBT	14.1	B	14.1	B	14.6	B	14.6	B						
SBR2	-	-			-	-								
18	Grevelia Street/ Meridian Avenue	EBL	-	-	7.9	A	8.7	A	-	-	7.9	A	8.8	A
		EBT	-	-					-	-				
		EBR	-	-					-	-				
		WBL	-	-	7.9	A			-	-	8.0	A		
		WBT	-	-					-	-				
		WBR	-	-	-	-			-	-	-	-		
		NBL	-	-	9.1	A			-	-	8.7	A		
		NBT	-	-					-	-				
		NBR	-	-	-	-			-	-	-	-		
		SBL	-	-	-	-			-	-	-	-		
SBT	-	-	8.5	A	-	-	9.2	A						
SBR	-	-			-	-								

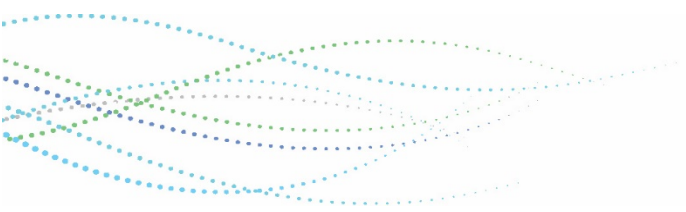
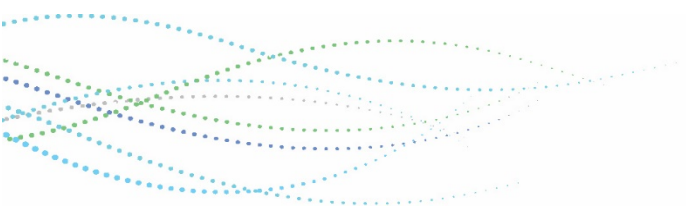




Table 2: Intersection Delay and Level of Service (Cont.)

			AM Peak Hour						PM Peak Hour					
Intersection		Move	Move		Approach		Intersection		Move		Approach		Intersection	
#	Location		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
19	Mission Street/ Diamond Avenue	EBL	-	-	-	-	1.4	A	-	-	-	-	0.9	A
		EBT	-	-	-	-			-	-	-	-		
		EBR	-	-	-	-			-	-	-	-		
		WBL	-	-	-	-			-	-	-	-		
		WBT	-	-	0.5	A			-	-	0.5	A		
		WBR	-	-	-	-			-	-	-	-		
		NBL	-	-	-	-			-	-	-	-		
		NBT	-	-	12.7	B			-	-	14.9	B		
		NBR	-	-	-	-			-	-	-	-		
		SBL	-	-	-	-			-	-	-	-		
		SBT	-	-	-	-			-	-	-	-		
SBR	-	-	-	-	-	-	-	-	-					
20	Mission Street/ Fairview Avenue	EBL	-	-	-	-	1.9	A	-	-	-	-	1.8	A
		EBT	-	-	0.4	A			-	-	0.4	A		
		EBR	-	-	-	-			-	-	-	-		
		WBL	-	-	-	-			-	-	-	-		
		WBT	-	-	0.6	A			-	-	0.8	A		
		WBR	-	-	-	-			-	-	-	-		
		NBL	-	-	-	-			-	-	-	-		
		NBT	-	-	13.0	B			-	-	16.3	C		
		NBR	-	-	-	-			-	-	-	-		
		SBL	-	-	-	-			-	-	-	-		
		SBT	-	-	16.4	C			-	-	15.0	C		
SBR	-	-	-	-	-	-	-	-						
21	Mission Street/ Pasadena Avenue	EBT	-	-	-	-	0.0		-	-	-	-	0.0	
		EBR	-	-	-	-			-	-	-			
		WBL	-	-	-	-			-	-	-			
		WBT	-	-	-	-			-	-	-			
		NBL	-	-	-	-			-	-	-			
		NBR	-	-	-	-			-	-	-			





# Traffic Study of Meridian Avenue and Mission Street

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**Table 3** shows the available lane and turn pocket storage at the four major intersections in the section of Mission Street considered for a lane reduction: Fair Oaks Avenue, Fremont Avenue, Meridian Avenue, and Orange Grove Avenue.

**Table 3: Lane and Turn Pocket Storage**

#	Intersection	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
1	Mission Street	Fair Oaks Ave	-	427	-	75	434	-	150	375	-	150	355	-
2		Fremont Avenue	75	613	-	75	414	-	50	375	100	75	744	100
3		Meridian Avenue		408	-	-	294	-	-	373	-	-	340	-
4		Orange Grove Avenue	40	161	-	-	588	-	-	-	-	100	432	100

**Tables 4 and 5** show the 95<sup>th</sup> Percentile Queue Length for the AM and PM peak hours respectively. The queues shaded in orange exceed the turn pocket storage under 95<sup>th</sup> percentile conditions.

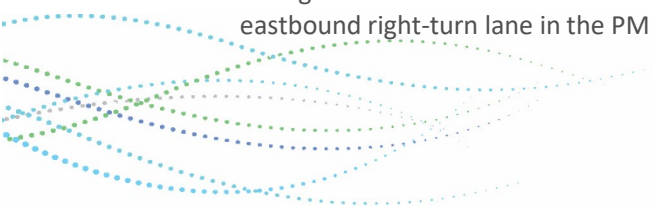
**Table 4: 95<sup>th</sup> Percentile Queue Length – AM Peak Hour**

#	Intersection	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
1	Mission Street	Fair Oaks Ave	105	249	-	89	423	-	194	347	333	173	315	284
2		Fremont Avenue	71	113	180	81	132	162	87	350	123	117	469	74
3		Meridian Avenue	-	123	158	-	137	161	-	192	-	129	129	-
4		Orange Grove Avenue	61	159	97	-	82	114	-	-	-	85	198	74

**Table 5: 95<sup>th</sup> Percentile Queue Length – PM Peak Hour**

#	Intersection	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
1	Mission Street	Fair Oaks Ave	133	330	0	109	494	-	188	342	328	220	936	942
2		Fremont Avenue	82	196	276	88	126	155	90	366	98	122	849	120
3		Meridian Avenue	-	168	202	-	141	173	-	171	-	151	151	-
4		Orange Grove Avenue	72	151	97	-	99	136	-	-	-	69	206	81

95<sup>th</sup> percentile queues that exceed available storage for turn lanes were observed at each intersection except for Meridian Avenue. At Fair Oaks Avenue, the westbound, northbound and southbound left-turns and northbound right-turns in both peak hours, and the southbound right-turn lane in the PM peak hours exceed storage. At Fremont Avenue the northbound and southbound left-turn, and westbound right-turn in both peak hours and eastbound right-turn in the AM peak hour and southbound right-turn in the PM peak hour the 95<sup>th</sup> percentile queue exceed storage. At Orange Grove Avenue, the 95<sup>th</sup> percentile queue exceeds storage at the eastbound left-turn lane and westbound right-turn lanes in both peak hours and the eastbound right-turn lane in the PM peak hour.





## Mission Street Intersection Reconfiguration Considerations

Due to the feasibility of the potential closure of Meridian Avenue and lane reduction along Mission Street largely being made on the four key intersections of Mission Street at Fair Oaks Avenue, Fremont Avenue, Meridian Avenue and Orange Grove Avenue specific review of these intersections in terms of constraints and opportunities are summarized below.

### **Mission Street/Fair Oaks Avenue**

The intersection of Mission Street at Fair Oaks Avenue is a major intersection that provides direct access to Huntington Drive and SR-110. The intersection currently has high levels of delay and queues in the eastbound, westbound and southbound directions.

Other issues encountered at the intersection are the southbound far-side bus stop, curb extensions constraining southbound right-turn options, and amount of green time to allow east-west flow given the much higher volumes of north/south volume at the intersection.

While lower east/west volume does indicate lane reduction could accommodate the existing volume of traffic demand, the intersection has overall high levels of demand and geometric constraints indicating minimal alterations of Mission Street in the block between Fair Oaks Avenue and Mound Avenue should be considered to ensure vehicles can be accommodated without any stacking onto Fair Oaks Avenue.

### **Mission Street/ Fremont Avenue**

Similar to Fair Oaks Avenue, Fremont Avenue carries higher volumes of vehicles than Mission Street, which limits the amount of green time available for east-west operations.

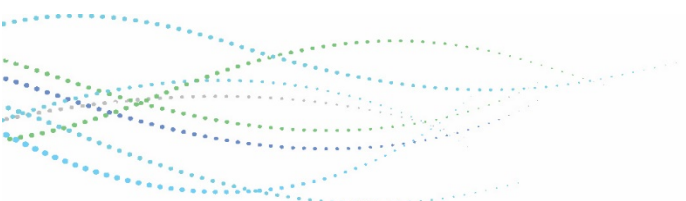
Turn pocket length on the east and westbound approaches need to be adequate to provide storage to move left-turning vehicles from through movements and prevent blockage of east-west through movements due to a queue spillback blockage. A lane reduction would provide an opportunity to provide bus turnouts for the nearside stops along Mission Street.

### **Mission Street/ Meridian Avenue**

The Mission Street at Meridian Avenue intersection has a complex interaction with the Metro Gold Line tracks which cross in a diagonal direction. The analysis includes phasing for the Metro Gold Line to simulate rail gate down time. The closure of Meridian Avenue south of Mission Street has the potential to improve intersection operations by removing the need to add a signal phase for northbound vehicles.

### **Mission Street/ Orange Grove Avenue**

The intersection of Mission Street with Orange Grove Avenue is the western end of the studied lane reduction scenario. It is a good candidate location for a transition from a four-lane roadway to a two-lane roadway due to its offset north and south legs which provide an opportunity for an exclusive eastbound left-turn lane and provision of a bus turnout area in the westbound direction.



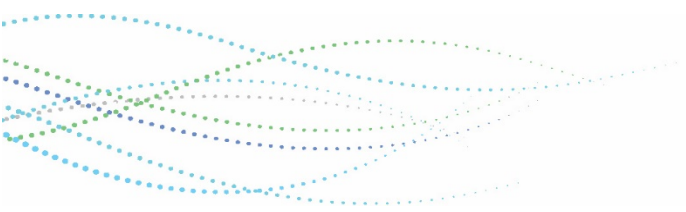


## 5 MERIDIAN AVENUE CLOSURE ANALYSIS

The first scenario analyzes the closure of Meridian Avenue between Mission Street and El Centro Street (Analysis Scenario 1). There would be no northbound or southbound trips to/from the section of Meridian Avenue. This would result in the redistribution of trips forced to reroute due to the street closure. Volume was forecast to be redistributed primarily to the adjacent north/south roadways that connect Grevelia Street and Monterey Road: Orange Grove Avenue and Fremont Avenue. Some distribution to Diamond Avenue and Fairview Avenue (between Meridian Avenue and Fremont Avenue) as well as along Pasadena Avenue and Mission Street. No changes to volume along Fair Oaks Avenue was forecast.

As shown in **Table 6**, delay is forecast to increase (in orange shading) the most along Fremont Avenue at #2 Mission Street/Fremont Avenue, #6 El Centro Street/Fremont Avenue, and #11 Monterey Road/Fremont Avenue and to a limited degree in other corridors. In **Table 6**, delay is forecast to decrease (in blue shading) at the intersections along Meridian Avenue. It should be noted the delay at the intersection #3 is reduced in comparison to Existing Conditions, not only due to the reduction in vehicle volume, but also the fewer required signal phases to accommodate north/south traffic which allows more green time for other movements.

The analysis shows the closure of Meridian Avenue between Mission Street and El Centro Street would result in increased delay along Fremont Street while reduction in volume along Meridian Avenue. However, the changes would not result in a significant change in operational characteristics in the study area.





# Traffic Study of Meridian Avenue and Mission Street

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**Table 6: Meridian Closure (Scenario 1) Peak Hour Average Intersection Delay**

Study Intersection		Existing Conditions				Meridian Closure Scenario				Change in V/C		Significantly Impacted
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM	PM	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay			
1	Mission Street/Fair Oaks Avenue	C	32.3	D	42.5	C	31.5	D	41.3	-0.8	-1.2	No
2	Mission Street/ Fremont Avenue	C	21.4	B	19.8	C	22.3	C	20.7	0.9	0.9	No
3	Mission Street/ Meridian Avenue	C	28.7	C	27.8	B	14.5	B	15.7	-14.2	-12.1	No
4	Mission Street/ Orange Grove Avenue	A	9.9	A	7.6	A	9.7	A	7.5	-0.2	-0.1	No
5	El Centro Street/ Fair Oaks Avenue	A	5.7	B	13.1	A	5.8	B	12.9	0.1	-0.2	No
6	El Centro Street/ Fremont Avenue	C	23.7	C	26.1	C	29.2	D	33.0	5.5	6.9	No
7	El Centro Street/ Meridian Avenue	B	13.0	B	10.9	A	9.2	A	8.7	-3.8	-2.2	No
8	El Centro Street/ Orange Grove Avenue	A	9.4	A	8.9	B	10.1	A	9.5	0.7	0.6	No
9	El Centro Street/ Pasadena Avenue	A	3.4	A	3.2	A	3.0	A	2.7	-0.4	-0.5	No
11	Monterey Road/ Fremont Avenue	D	38.1	C	33.7	D	41.5	D	35.3	3.4	1.6	No
12	Monterey Road/ Meridian Avenue	D	52.8	D	35.8	D	43.9	C	27.4	-8.9	-8.4	No
13	Monterey Road/ Orange Grove Avenue	A	9.7	A	7.7	B	11.3	A	9.1	1.6	1.4	No
16	Hope Street/ Meridian Avenue	A	2.5	A	3.0	A	3.4	A	3.7	0.9	0.7	No
17	Grevelia Street/ Fremont Avenue	B	14.8	B	16.3	B	15.2	B	16.6	0.4	0.3	No
18	Grevelia Street/ Meridian Avenue	A	8.7	A	8.8	A	8.0	A	8.8	-0.7	0.0	No
19	Mission Street/ Diamond Avenue	A	1.4	A	0.9	A	1.5	A	1.1	0.1	0.2	No
20	Mission Street/ Fairview Avenue	A	1.9	A	1.8	A	1.9	A	1.9	0.0	0.1	No
21	Mission Street/ Pasadena Avenue		0.0		0.0		0.0		0.0	0.0	0.0	No





## 6 MISSION STREET LANE REDUCTION ANALYSIS

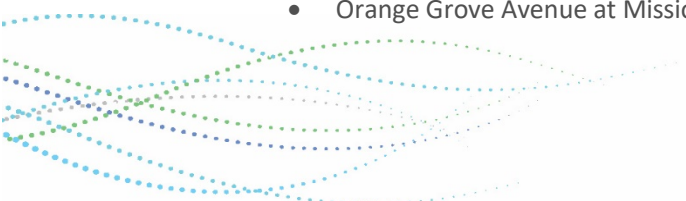
The lane reduction along Mission Street between Fair Oaks Avenue and Orange Grove Avenue was analyzed in four different scenarios. An initial review of a lane reduction without alteration to any turn lane storage indicated critical movements that would require additional turn-lane storage to prevent spillback queues from impeding through movement along Mission Street. As a result a scenario of lane reduction was developed that extended turn lanes at the identified critical movements (Analysis Scenario 2) as described in section 6.1.1. This scenario was modified to include the Meridian Avenue closure and related volume redistribution as described in Section 6.1.2 as Analysis Scenario 3. Comparison of the two scenarios indicated the scenario with the Meridian Avenue closure to have a higher delay at Mission Street/Fremont Street which had the highest change in delays in the corridor compared to existing conditions. Therefore, the scenario with both the Mission Street lane reduction and the Meridian Avenue closure included the queuing and stacking analysis.

These scenarios were used to inform the development of the Slow Streets Program Conceptual Plans (Appendix C). The Conceptual Plans were also modeled as Analysis Scenario 4 as described in Section 6.1.3 which resulted in lower corridor delay and queuing as compared to the previously analyzed scenarios.

### 6.1.1 Mission Street Lane Reduction (Scenario 2)

This scenario analyzes the lane reduction of Mission Street between Fair Oaks Avenue and Orange Grove Avenue. Initial analysis indicated significant delay increase at the Mission Street/Fair Oaks and Mission Street/Fremont Avenue Intersections if a through lane was removed in each direction with no other accommodations for vehicles. This scenario includes the following additional roadway reconfiguration components in addition to the lane reduction:

- Fair Oaks Avenue at Mission Street
  - No change in the configuration of Mission Street between Fair Oaks Avenue and Mound Avenue
  - This would mean the transition from a two-lane roadway to a one-lane roadway would occur at the intersection with Mount Avenue with a transition to one through lane and right turn lane in the westbound direction.
  
- Fremont Avenue at Mission Street
  - Extend eastbound left-turn storage from 75 to 95 feet
  - Add eastbound right-turn storage of 50 feet
  - Extend westbound left-turn storage from 75 to 200 feet
  - Add westbound right-turn storage of 50 feet
  - Extend northbound left-turn storage from 50 to 190 feet
  - Extend southbound left-turn storage from 75 to 165 feet
  
- Meridian Avenue at Mission Street
  - Add westbound right-turn storage of 65 feet
  
- Orange Grove Avenue at Mission Street





- Extend eastbound left-turn storage from 40 feet to 115—the entire length of the section between Orange Grove Avenue (East) and Orange Grove Avenue (West)
- Extend westbound left-turn storage to the entire length of the section between Orange Grove Avenue (East) and Orange Grove Avenue (West)
- Reconfigure southbound left, shared left/right, and right-turn lane configuration to southbound left-turn, and two southbound right-turn lanes with the inside right turn indicated with signage as the lane to continue on Orange Grove Avenue south of Mission Street.
- Provision of a westbound bus bay between Orange Grove Avenue (East) and Orange Grove Avenue (West)

**Figure 6** shows the existing configuration of the intersection and **Figure 7** illustrates the conditions for the intersection under this scenario.

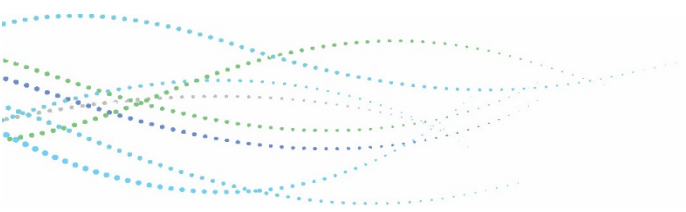
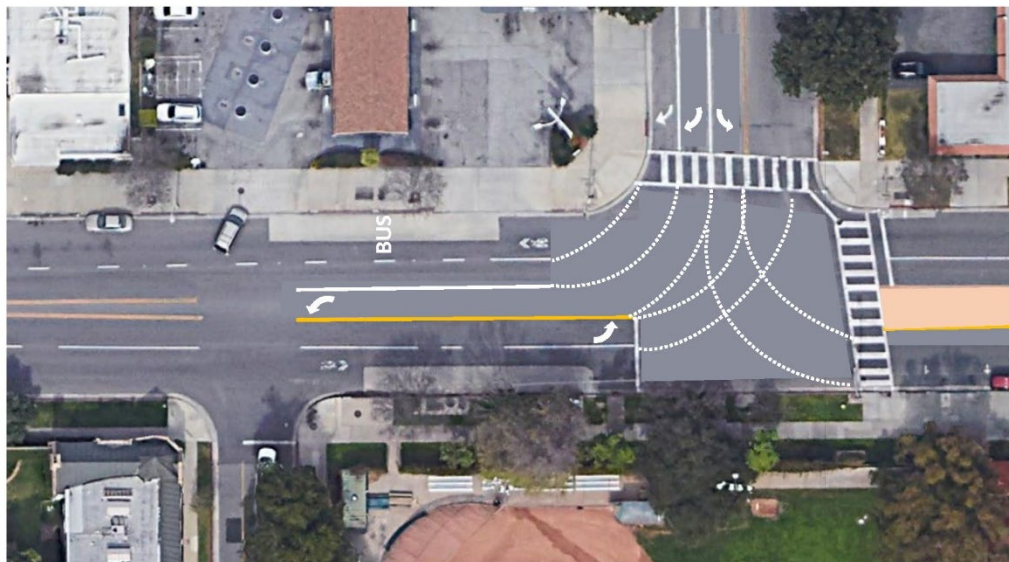




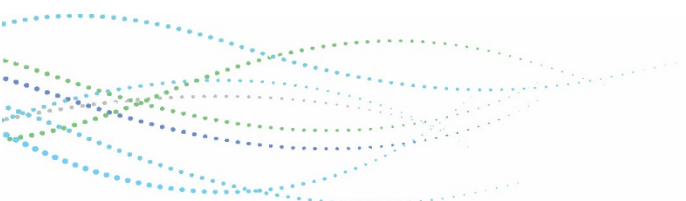
Figure 6: Existing Orange Grove Avenue at Mission Street Intersection Configuration



Figure 7: Potential Orange Grove Avenue at Mission Street Intersection Configuration



As shown in **Table 7**, delay is forecast to increase (in orange shading) along the Mission Street corridor in the lane reduction study as compared to existing conditions. Despite the increased delay in the corridor, none of the locations would exceed the City's operational threshold of level of service D. However, as described in the analysis methodology section, this delay does not account for queueing or spillback, which was analyzed with SimTraffic in section 6.1.2.





# Traffic Study of Meridian Avenue and Mission Street

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**Table 7: Mission Street Reduction (Scenario 2) Peak Hour Average Intersection Delay**

Study Intersection		Existing Conditions				Scenario 2 - Mission Lane Reduction				Change in V/C		Significantly Impacted
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour				
		LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	AM	PM	
1	Mission Street/Fair Oaks Avenue	C	32.3	D	42.5	C	31.4	D	41.0	0.0	-1.5	No
2	Mission Street/ Fremont Avenue	C	21.4	B	19.8	C	33.6	D	36.3	13.3	16.5	No
3	Mission Street/ Meridian Avenue	C	28.7	C	27.8	D	36.9	D	37.2	8.2	9.4	No
4	Mission Street/ Orange Grove Avenue	A	9.9	A	7.6	B	13.8	B	13.3	3.9	5.7	No
5	El Centro Street/ Fair Oaks Avenue	A	5.7	B	13.1	A	5.8	B	12.4	0.0	-0.7	No
6	El Centro Street/ Fremont Avenue	C	23.7	C	26.1	C	22.7	C	29.1	-1.0	3.0	No
7	El Centro Street/ Meridian Avenue	B	13.0	B	10.9	B	13.0	B	10.9	0.0	0.0	No
8	El Centro Street/ Orange Grove Avenue	A	9.4	A	8.9	A	9.4	A	8.9	0.0	0.0	No
9	El Centro Street/ Pasadena Avenue	A	3.4	A	3.2	A	3.4	A	3.2	0.0	0.0	No
11	Monterey Road/ Fremont Avenue	D	38.1	C	33.7	D	38.1	C	31.6	0.0	-1.9	No
12	Monterey Road/ Meridian Avenue	D	52.8	D	35.8	D	52.8	D	35.8	0.0	0.0	No
13	Monterey Road/ Orange Grove Avenue	A	9.7	A	7.7	A	9.7	A	7.7	0.0	0.0	No
16	Hope Street/ Meridian Avenue	A	2.5	A	3.0	A	2.5	A	3.0	0.0	0.0	No
17	Grevelia Street/ Fremont Avenue	B	14.8	B	16.3	B	14.8	B	16.3	0.0	0.0	No
18	Grevelia Street/ Meridian Avenue	A	8.7	A	8.8	A	8.7	A	8.8	0.0	0.0	No
19	Mission Street/ Diamond Avenue	A	1.4	A	0.9	A	1.6	A	1.1	0.2	0.2	No
20	Mission Street/ Fairview Avenue	A	1.9	A	1.8	A	1.9	A	1.9	0.0	0.1	No
21	Mission Street/ Pasadena Avenue		0.0		0.0		0.0		0.0	0.0	0.0	No



## 6.1.2 Meridian Avenue Closure and Mission Street Lane Reduction (Scenario 3)

This scenario analyzes combines the lane configuration and traffic volume modifications of the two previous scenarios.

As shown in **Table 8**, delay is forecast to increase (in orange shading) the along the Fremont Avenue, Mission Street, and El Centro Street corridors while delay reduction is observed to decrease (in blue shading) at the intersections along Meridian Avenue. It should be noted the delay at the intersection #3 is reduced as compared to the Mission Street Lane Reduction Only scenario, not only due to the reduction in vehicle volume, but also the fewer required signal phases to accommodate north/south traffic which allows more green time for other movements.

### 6.1.2.1 Queuing and Stacking Analysis

Due the feasibility of the potential closure of Meridian Avenue and lane reduction along Mission Street largely being determined by the change in queuing and stacking at the four key intersections of Mission Street at Fair Oaks Avenue, Fremont Avenue, Meridian Avenue and Orange Grove Avenue a SimTraffic simulation comparing the Existing Conditions to this scenario was performed.

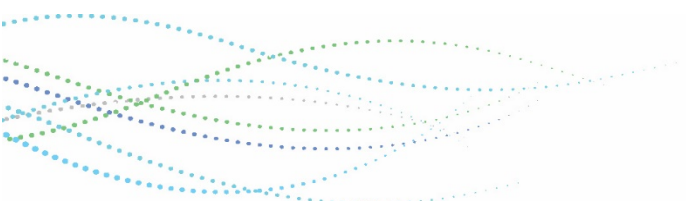
Three metrics were used in this analysis:

1. The change in 95<sup>th</sup> percentile queue length – movements where the 95<sup>th</sup> percentile queue exceeded the storage length are indicated
2. The percent of the peak hour time where the storage lanes were blocked (Storage Block Time %)
3. The percentage of the peak hour time where the upstream traffic blocked from entering the intersection due to either storage blockage or an inability of the intersection to allow enough green time to process vehicles. (Upstream Block Time %)

Each of the four signalized intersections along Mission Street from Fair Oaks Avenue to Orange Grove Avenue were analyzed separately with three analysis tables of the queuing and stacking metrics.

#### **Mission Street/Fair Oaks Avenue**

The intersection of Mission Street at Fair Oaks Avenue is a major intersection that provides direct access to Huntington Drive and SR-110. The intersection currently has high levels of delay and queues in the eastbound, westbound and southbound directions. Other issues encountered at the intersection are the southbound far-side bus stop, curb extensions constraining southbound right-turn options, and amount of green time to allow east-west flow given the much higher volumes of north/south volume at the intersection. While lower east/west volume does indicate lane reduction could accommodate the existing volume of traffic demand, the intersection has overall high levels of demand and geometric constraints indicating minimal alterations of Mission Street in the block between Fair Oaks Avenue and Mound Avenue should be considered to ensure vehicles can be accommodated without any stacking onto Fair Oaks Avenue.







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**Table 8: Meridian Avenue Closure and Mission Street Reduction (Scenario 3) Peak Hour Average Intersection Delay**

Study Intersection		Existing Conditions				Scenario 3 - Meridian Closure and Mission Lane Red.				Change in V/C		Significantly Impacted
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM	PM	
		LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C			
1	Mission Street/Fair Oaks Avenue	C	32.3	D	42.5	C	31.4	D	46.9	-0.9	4.4	No
2	Mission Street/ Fremont Avenue	C	21.4	B	19.8	D	39.1	D	42.1	17.7	22.3	No
3	Mission Street/ Meridian Avenue	C	28.7	C	27.8	B	24.5	C	23.7	-4.2	-4.1	No
4	Mission Street/ Orange Grove Avenue	A	9.9	A	7.6	B	13.2	B	12.5	3.3	4.9	No
5	El Centro Street/ Fair Oaks Avenue	A	5.7	B	13.1	A	5.8	B	13.0	0.1	-0.1	No
6	El Centro Street/ Fremont Avenue	C	23.7	C	26.1	C	28.9	D	37.0	5.2	10.9	No
7	El Centro Street/ Meridian Avenue	B	13.0	B	10.9	A	9.2	A	8.7	-3.8	-2.2	No
8	El Centro Street/ Orange Grove Avenue	A	9.4	A	8.9	B	10.1	A	9.5	0.7	0.6	No
9	El Centro Street/ Pasadena Avenue	A	3.4	A	3.2	A	3.0	A	2.7	-0.4	-0.5	No
11	Monterey Road/ Fremont Avenue	D	38.1	C	33.7	D	41.5	D	38.5	3.4	4.8	No
12	Monterey Road/ Meridian Avenue	D	52.8	D	35.8	D	43.9	C	27.4	-8.9	-8.4	No
13	Monterey Road/ Orange Grove Avenue	A	9.7	A	7.7	B	11.3	A	9.1	1.6	1.4	No
16	Hope Street/ Meridian Avenue	A	2.5	A	3.0	A	3.4	A	3.7	0.9	0.7	No
17	Grevelia Street/ Fremont Avenue	B	14.8	B	16.3	B	15.2	B	16.6	0.4	0.3	No
18	Grevelia Street/ Meridian Avenue	A	8.7	A	8.8	A	8.0	A	8.8	-0.7	0	No
19	Mission Street/ Diamond Avenue	A	1.4	A	0.9	A	1.7	A	1.2	0.3	0.3	No
20	Mission Street/ Fairview Avenue	A	1.9	A	1.8	A	2.0	A	2.1	0.1	0.3	No
21	Mission Street/ Pasadena Avenue		0.0		0.0		0.0		0.0	0	0	No



**Table 9** presents the 95th Percentile Queue Length of Fair Oaks Avenue at Mission Street in the AM and PM peak hours for Existing Conditions, and the lane reduction scenario, and the difference in queue length between the two scenarios. Queues that exceed available storage are shown in orange. As shown, the lane reduction scenario would have longer queues in the westbound through movement in the PM peak hour and the southbound through and right turn movement in the PM peak hour. The Scenario 3 does improve southbound conditions in the PM peak hour. The other inbound movement of the northbound left-turn experiences a small addition to its 95<sup>th</sup> percentile queue length in the PM peak hour.

**Table 9: 95<sup>th</sup> Percentile Queue Length – Fair Oaks Avenue at Mission Street (Scenario 3)**

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
AM Peak Hour	Existing	105	249	-	89	423	-	194	347	333	173	315	284
	Scenario 3	97	215	-	83	377	-	187	345	330	183	328	290
	<b>Difference</b>	<b>8</b>	<b>(34)</b>	-	<b>(6)</b>	<b>(46)</b>	-	<b>(7)</b>	<b>(2)</b>	<b>(3)</b>	<b>10</b>	<b>13</b>	<b>6</b>
PM Peak Hour	Existing	133	330	0	109	494	-	188	342	328	220	936	942
	Scenario 3	120	282	0	107	835	-	199	343	324	214	850	853
	<b>Difference</b>	<b>(13)</b>	<b>(48)</b>	-	<b>(2)</b>	<b>341</b>	-	<b>11</b>	<b>1</b>	<b>(4)</b>	<b>(6)</b>	<b>(86)</b>	<b>(89)</b>

**Table 10** shows the storage block time percentage of Fair Oaks Avenue at Mission Street in the AM and PM peak hours for Existing Conditions, Scenario 3, and the difference between the two scenarios. As shown Scenario 3 would have small changes to storage block time as compared to existing conditions.

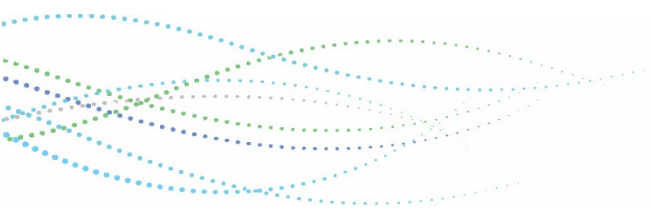
**Table 10: Storage Block Time Percent – Fair Oaks Avenue at Mission Street**

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
AM Peak Hour	Existing	-	-	-	-	49	-	1	21	-	-	17	-
	Scenario 3	-	-	-	-	45	-	1	25	-	1	19	-
	<b>Difference</b>	-	-	-	-	<b>(4)</b>	-	-	<b>4</b>	-	<b>1</b>	<b>2</b>	-
PM Peak Hour	Existing	-	-	-	1	52	-	-	23	-	4	52	-
	Scenario 3	-	-	-	1	61	-	3	23	-	7	51	-
	<b>Difference</b>	-	-	-	-	<b>9</b>	-	<b>3</b>	-	-	<b>3</b>	<b>(1)</b>	-

**Table 11** shows the upstream block time percentage of Fair Oaks Avenue at Mission Street in the AM and PM peak hours for Existing Conditions, Scenario 3, and the difference between the two scenarios. As shown, Scenario 3 would spillback on the westbound through movement in the PM peak hour, limiting the crossing of vehicles to Mission Street west of Fair Oaks Avenue. This condition would effectively meter the vehicles entering the intersection which would cause downstream queues on Mission Street as it narrows to one through lane.

**Table 11: Upstream Block Time Percent – Fair Oaks Avenue at Mission Street**

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
AM Peak Hour	Existing	-	-	-	-	-	-	-	3	2	-	-	-
	Scenario 3	-	-	-	-	-	-	-	5	2	-	-	-
	<b>Difference</b>	-	-	-	-	-	-	-	<b>2</b>	-	-	-	-
PM Peak Hour	Existing	-	1	-	-	-	-	-	3	2	-	40	40
	Scenario 3	-	-	-	-	8	-	-	6	2	-	41	41
	<b>Difference</b>	-	-	-	-	<b>8</b>	-	-	<b>3</b>	-	-	<b>1</b>	<b>1</b>





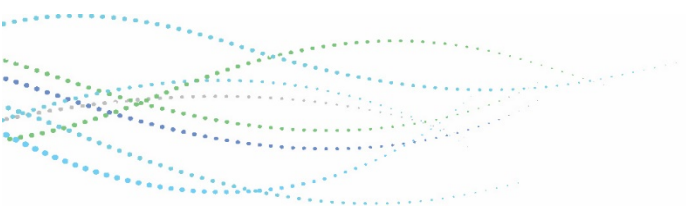
## Mission Street/ Fremont Avenue

Similar to Fair Oaks Avenue, Fremont Avenue carries higher volumes of vehicles than Mission Street, which limits the amount of green time available for east-west operations. Turn pocket length on the east and westbound approaches need to be adequate to provide storage to move left-turning vehicles from through movements and prevent blockage of east-west through movements due to a queue spillback blockage. However Fremont Avenue is a constrained location with few options to reduce eastbound and westbound through lanes from a four to a two lane configuration and process the travel demand.

**Table 12** presents the 95th Percentile Queue Length of Fremont Avenue at Mission Street in the AM and PM peak hours for Existing Conditions, Scenario 3, and the difference in queue length between the two scenarios. Queues that exceed available storage are shown in orange. Note that Scenario 3 includes the following expanded and additional storage:

- Extend eastbound left-turn storage from 75 to 95 feet
- Add eastbound right-turn storage of 50 feet
- Extend westbound left-turn storage from 75 to 200 feet
- Add westbound right-turn storage of 50 feet
- Extend northbound left-turn storage from 50 to 190 feet
- Extend southbound left-turn storage from 75 to 165 feet

As shown, Scenario 3 would have longer queues in all movements with the exception of eastbound and westbound right-turns. However, since those movements are shared with the through movement the block time analysis is a better indicator of queue blockage issues.







**Table 12: 95<sup>th</sup> Percentile Queue Length – Fremont Avenue at Mission Street**

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
AM Peak Hour	Existing	71	113	180	81	132	162	87	350	123	117	469	74
	Scenario 3	139	531	97	194	367	101	268	334	122	179	371	75
	<b>Difference</b>	<b>68</b>	<b>418</b>	<b>(83)</b>	<b>113</b>	<b>235</b>	<b>(61)</b>	<b>181</b>	<b>(16)</b>	<b>(1)</b>	<b>62</b>	<b>(98)</b>	<b>1</b>
PM Peak Hour	Existing	82	196	276	88	126	155	90	366	98	122	849	120
	Scenario 3	148	673	99	264	415	103	234	333	75	237	800	118
	<b>Difference</b>	<b>66</b>	<b>477</b>	<b>(177)</b>	<b>176</b>	<b>289</b>	<b>(52)</b>	<b>144</b>	<b>(33)</b>	<b>(23)</b>	<b>115</b>	<b>(49)</b>	<b>(2)</b>

Table 13 shows the storage block time percentage of Fremont Avenue at Mission Street in the AM and PM peak hours for Existing Conditions, Scenario 3, and the difference between the two scenarios.

As shown Scenario 3 would increase the storage block time with the exception of the northbound through and left-turn lane, westbound left-turn, and southbound left-turn in the AM peak hour where additional turn pocket storage was added. Other turn pockets with added storage had their storage block time increase despite the additional allocation of storage space: the eastbound left-turn and southbound left-turn in the PM peak hour. However, the major storage issue is the eastbound and westbound through movements which see large jumps in the blockage of available storage space--up approximately 50 percent of the time in both peak hours.

**Table 13: Storage Block Time Percent – Fremont Avenue at Mission Street**

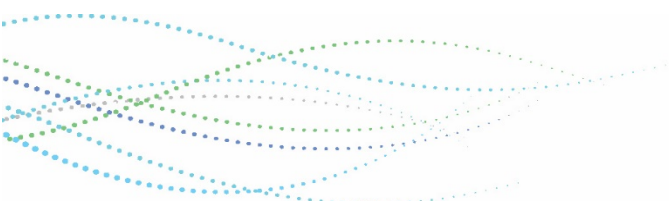
Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
AM Peak Hour	Existing	1	2	-	3	8	-	15	39	-	16	26	-
	Scenario 3	21	48	9	0	60	9	-	39	-	2	19	-
	<b>Difference</b>	<b>20</b>	<b>46</b>	<b>9</b>	<b>(3)</b>	<b>52</b>	<b>9</b>	<b>(15)</b>	<b>-</b>	<b>-</b>	<b>(14)</b>	<b>(7)</b>	<b>-</b>
PM Peak Hour	Existing	1	8	-	10	6	-	27	40	-	20	24	-
	Scenario 3	8	68	16	10	59	7	11	20	-	26	28	-
	<b>Difference</b>	<b>7</b>	<b>60</b>	<b>16</b>	<b>-</b>	<b>53</b>	<b>7</b>	<b>(16)</b>	<b>(20)</b>	<b>-</b>	<b>6</b>	<b>4</b>	<b>-</b>

Table 14 shows the upstream block time percentage of Fremont Avenue at Mission Street in the AM and PM peak hours for Existing Conditions, Scenario 3, and the difference between the two scenarios. As shown, in the PM peak hour Scenario 3 would have an increase in spillback on the eastbound and westbound through movement and a reduction in spillback blockage on the southbound through movement.

**Table 14: Upstream Block Time Percent – Fremont Avenue at Mission Street**

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
AM Peak Hour	Existing	-	-	-	-	-	-	-	7	-	-	1	-
	Scenario 3	-	6	-	-	3	-	-	4	-	-	-	-
	<b>Difference</b>	<b>-</b>	<b>6</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>(3)</b>	<b>-</b>	<b>-</b>	<b>(1)</b>	<b>-</b>
PM Peak Hour	Existing	-	-	-	-	-	-	-	6	-	-	23	-
	Scenario 3	-	24	-	-	12	-	-	3	-	-	20	-
	<b>Difference</b>	<b>-</b>	<b>24</b>	<b>-</b>	<b>-</b>	<b>12</b>	<b>-</b>	<b>-</b>	<b>(3)</b>	<b>-</b>	<b>-</b>	<b>(3)</b>	<b>-</b>

Mission Street/ Meridian Avenue





The Mission Street at Meridian Avenue intersection has a complex interaction with the Metro Gold Line tracks which crosses the intersection in a diagonal direction. The analysis includes phasing for the Metro Gold Line to simulate rail gate down time. The closure of Meridian Avenue south of Mission Street has the potential to improve intersection operations by removing the need to provide for a signal phase for northbound vehicles.

**Table 15** presents the 95th Percentile Queue Length of Meridian Avenue at Mission Street in the AM and PM peak hours for Existing Conditions, Scenario 3, and the difference in queue length between the two scenarios. Queues that exceed available storage are shown in orange.

As shown, Scenario 3 would eliminate the eastbound right-turn, southbound through, northbound lanes and westbound left-turn movements. While the intersection showed improved delay conditions in the LOS analysis, the 95<sup>th</sup> percentile queues would exceed storage in the eastbound and westbound through movements. The westbound right-turn move would have a reduction in the queue length, but still exceed the 50 feet of storage allocated in Scenario 3.

**Table 15: 95<sup>th</sup> Percentile Queue Length – Meridian Avenue at Mission Street**

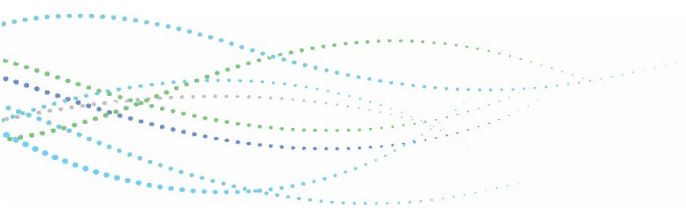
Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
AM Peak Hour	Existing	-	123	158	-	137	161	-	192	-	129	129	-
	Scenario 3	-	280	-	-	186	74	-	-	-	86	86	-
	<b>Difference</b>	-	<b>192</b>	<b>(161)</b>	-	<b>75</b>	<b>(77)</b>	-	<b>(200)</b>	-	<b>(136)</b>	<b>(51)</b>	-
PM Peak Hour	Existing	-	168	202	-	141	173	-	171	-	151	151	-
	Scenario 3	-	382	-	-	208	77	-	-	-	116	116	-
	<b>Difference</b>	-	<b>214</b>	<b>(202)</b>	-	<b>67</b>	<b>(96)</b>	-	<b>(171)</b>	-	<b>(35)</b>	<b>(35)</b>	-

**Table 16** shows the storage block time percentage of Meridian Avenue at Mission Street in the AM and PM peak hours for Existing Conditions, Scenario 3, and the difference between the two scenarios. As shown Scenario 3 would increase the storage block time in the westbound through movement.

**Table 16: Storage Block Time Percent – Meridian Avenue at Mission Street**

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
AM Peak Hour	Existing	-	-	-	-	-	-	-	-	-	-	-	-
	Scenario 3	-	-	-	-	11	-	-	-	-	-	-	-
	<b>Difference</b>	-	-	-	-	<b>11</b>	-	-	-	-	-	-	-
PM Peak Hour	Existing	-	-	-	-	-	-	-	-	-	-	-	-
	Scenario 3	-	-	-	-	15	-	-	-	-	-	-	-
	<b>Difference</b>	-	-	-	-	<b>15</b>	-	-	-	-	-	-	-

**Table 17** shows the upstream block time percentage of Meridian Avenue at Mission Street in the AM and PM peak hours for Existing Conditions, Scenario 3, and the difference between the two scenarios. As shown, Scenario 3 would have spillback on the eastbound through movement, similar to the conditions at the intersection of Mission Street with Fremont Avenue.





**Table 17: Upstream Block Time Percent – Meridian Avenue at Mission Street**

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
AM Peak Hour	Existing	-	-	-	-	-	-	-	-	-	-	-	-
	Scenario 3	4	4	-	-	1	-	-	-	-	-	-	-
	<b>Difference</b>	<b>4</b>	<b>4</b>	-	-	<b>1</b>	-	-	-	-	-	-	-
PM Peak Hour	Existing	-	-	-	-	-	-	-	-	-	-	-	-
	Scenario 3	10	10	-	-	2	-	-	-	-	-	-	-
	<b>Difference</b>	<b>10</b>	<b>10</b>	-	-	<b>2</b>	-	-	-	-	-	-	-

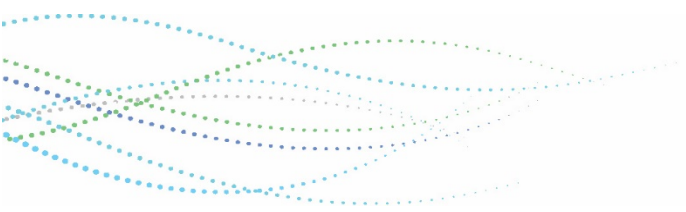
**Mission Street/ Orange Grove Avenue**

The intersection of Mission Street with Orange Grove Avenue is the western end of the studied lane reduction scenario. It is a good candidate location for a transition from a four-lane roadway to a two-lane roadway due to its offset north and south legs which provide an opportunity for an exclusive eastbound left-turn lane and provision of a bus turnout area in the westbound direction. The Scenarios 2 and 3 configuration for Orange Grove Avenue at Mission Street are:

- Extend eastbound left-turn storage from 40 feet to 115—the entire length of the section between Orange Grove Avenue (East) and Orange Grove Avenue (West)
- Extend westbound left-turn storage to the entire length of the section between Orange Grove Avenue (East) and Orange Grove Avenue (West)
- Reconfigure southbound left, shared left/right, and right-turn lane configuration to southbound left-turn, and two southbound right-turn lanes with the inside right turn indicated with signage as the lane to continue on Orange Grove Avenue south of Mission Street.
- Provision of a westbound bus bay between Orange Grove Avenue (East) and Orange Grove Avenue (West)
- **Figure 6** shows the existing configuration of the intersection and **Figure 7** illustrates the Scenario 3 conditions for the intersection.

**Table 18** presents the 95th Percentile Queue Length of Orange Grove Avenue (East) at Mission Street in the AM and PM peak hours for Existing Conditions, Scenario 3, and the difference in queue length between the two scenarios. Queues that exceed available storage are shown in orange.

As shown, Scenario 3 would increase the eastbound turning movement queuing, but would have a largely neutral effect on queue length as compared to the Existing Conditions. Since this shows the conditions of the eastern portion of the Orange Grove Avenue intersection, the eastbound storage are as shown in these calculations is constrained by the short segment. However, queue spillback would not have a significant impact on intersection operations as long as the queue spillback did not block the western portion of the Orange Grove Avenue at Mission Street intersection.





**Table 18: 95<sup>th</sup> Percentile Queue Length – Orange Grove Avenue at Mission Street**

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBLR	SBR
AM Peak Hour	Existing	61	159	97	-	82	114	-	-	-	85	198	74
	Scenario 3	95	61	61	-	82	82	-	-	-	99	62	73
	<b>Difference</b>	34	(98)	(36)	-	-	32	-	-	-	14	(136)	(1)
PM Peak Hour	Existing	72	151	97	-	99	136	-	-	-	69	206	81
	Scenario 3	128	120	120	-	196	196	-	-	-	100	57	95
	<b>Difference</b>	56	(31)	23	-	97	60	-	-	-	31	(149)	14

**Table 19** shows the storage block time percentage of Orange Grove Avenue at Mission Street in the AM and PM peak hours for Existing Conditions, Scenario 3, and the difference between the two scenarios. As shown Scenario 3 would reduce the storage block time in the eastbound and southbound movements.

**Table 19: Storage Block Time Percent – Orange Grove Avenue at Mission Street**

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBLR	SBR
AM Peak Hour	Existing	40	8	-	-	-	-	-	-	-	-	11	-
	Scenario 3	-	-	-	-	-	-	-	-	-	1	-	-
	<b>Difference</b>	<b>(40)</b>	<b>(8)</b>	-	-	-	-	-	-	-	<b>1</b>	<b>(11)</b>	-
PM Peak Hour	Existing	32	8	-	-	-	-	-	-	-	-	11	-
	Scenario 3	-	-	-	-	-	-	-	-	-	1	-	-
	<b>Difference</b>	<b>(32)</b>	<b>(8)</b>	-	-	-	-	-	-	-	<b>1</b>	-	-

**Table 20** shows the upstream block time percentage of Meridian Avenue at Mission Street in the AM and PM peak hours for Existing Conditions, Scenario 3, and the difference between the two scenarios. As shown, in the AM peak hour Scenario 3 would reduce the eastbound and southbound spillback. However, in the PM peak hour, the eastbound movements would see more spillback as compared to Existing Conditions.

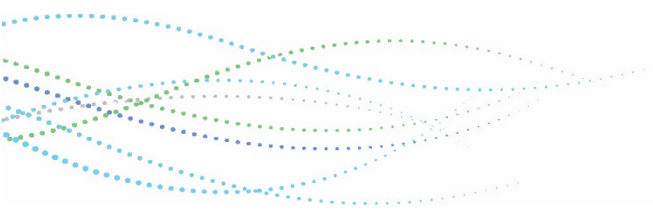
**Table 20: Upstream Block Time Percent – Orange Grove Avenue at Mission Street**

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBLR	SBR
AM Peak Hour	Existing	27	6	-	-	-	-	-	-	-	10	-	10
	Scenario 3	13	2	-	-	-	-	-	-	-	-	-	-
	<b>Difference</b>	<b>(14)</b>	<b>(4)</b>	-	-	-	-	-	-	-	<b>(10)</b>	-	<b>(10)</b>
PM Peak Hour	Existing	-	6	-	-	-	-	-	-	-	-	-	-
	Scenario 3	11	4	-	-	-	-	-	-	-	-	-	-
	<b>Difference</b>	<b>11</b>	<b>(2)</b>	-	-	-	-	-	-	-	-	-	-

### 6.1.3 Conceptual Plans for Mission Street Lane Reduction – Scenario 4

Conceptual plans for the South Pasadena Slow Streets Program were assessed as Scenario 4. The plans are included in Appendix C. The primary difference between Scenario 4 and the previously assessed scenarios for the Mission Street lane reduction is at the western transition point, which would occur as an eastbound lane reduction transition east of the intersection with Orange Grove as opposed to a lane drop at the Orange Grove intersection.

As shown in **Table 21**, changes to intersection level of service were similar to the other Mission Street lane reduction scenarios, with none significantly impacted by the lane reduction.





# Traffic Study of Meridian Avenue and Mission Street

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**Table 21: Meridian Avenue Closure and Mission Street Reduction (Scenario 4) Peak Hour Average Intersection Delay**

Study Intersection		Existing Conditions				Scenario 4 - Mission Lane Red.				Change in V/C		Significantly Impacted
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM	PM	
		LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C			
1	Mission Street/Fair Oaks Avenue	C	32.3	D	42.5	C	31.1	D	39.7	-1.2	-2.8	No
2	Mission Street/ Fremont Avenue	C	21.4	B	19.8	D	39.1	D	47.2	17.7	27.4	No
3	Mission Street/ Meridian Avenue	C	28.7	C	27.8	B	36.1	C	36.4	7.4	8.6	No
4	Mission Street/ Orange Grove Avenue	A	9.9	A	7.6	B	9.9	B	7.6	0	0	No
5	El Centro Street/ Fair Oaks Avenue	A	5.7	B	13.1	A	5.8	B	13.0	0.1	-0.1	No
6	El Centro Street/ Fremont Avenue	C	23.7	C	26.1	C	24.0	D	30.9	0.3	4.8	No
7	El Centro Street/ Meridian Avenue	B	13.0	B	10.9	A	13.0	A	10.9	0	0	No
8	El Centro Street/ Orange Grove Avenue	A	9.4	A	8.9	A	9.4	A	8.9	0	0	No
9	El Centro Street/ Pasadena Avenue	A	3.4	A	3.2	A	3.4	A	3.2	0	0	No
11	Monterey Road/ Fremont Avenue	D	38.1	C	33.7	D	38.1	D	31.6	0	-2.1	No
12	Monterey Road/ Meridian Avenue	D	52.8	D	35.8	D	52.8	C	35.8	0	0	No
13	Monterey Road/ Orange Grove Avenue	A	9.7	A	7.7	B	9.7	A	7.7	0	0	No
16	Hope Street/ Meridian Avenue	A	2.5	A	3.0	A	2.5	A	3.0	0	0	No
17	Grevelia Street/ Fremont Avenue	B	14.8	B	16.3	B	14.8	B	16.3	0	0	No
18	Grevelia Street/ Meridian Avenue	A	8.7	A	8.8	A	8.0	A	8.7	-0.7	-0.1	No
19	Mission Street/ Diamond Avenue	A	1.4	A	0.9	A	1.6	A	1.2	0.2	0.3	No
20	Mission Street/ Fairview Avenue	A	1.9	A	1.8	A	1.9	A	1.9	0	0.1	No
21	Mission Street/ Pasadena Avenue		0.0		0.0		0.0		0.0	0	0	No



6.1.3.1 Queuing and Stacking Analysis

were analyzed separately with three analysis tables of the queuing and stacking metrics for Scenario 4.

**Mission Street/Fair Oaks Avenue**

The intersection of Mission Street at Fair Oaks Avenue is a major intersection that provides direct access to Huntington Drive and SR-110. The intersection currently has high levels of delay and queues in the eastbound, westbound and southbound directions. Other issues encountered at the intersection are the southbound far-side bus stop, curb extensions constraining southbound right-turn options, and amount of green time to allow east-west flow given the much higher volumes of north/south volume at the intersection. While lower east/west volume does indicate lane reduction could accommodate the existing volume of traffic demand, the intersection has overall high levels of demand and geometric constraints indicating minimal alterations of Mission Street in the block between Fair Oaks Avenue and Mound Avenue should be considered to ensure vehicles can be accommodated without any stacking onto Fair Oaks Avenue.

Table 22 presents the 95th Percentile Queue Length of Fair Oaks Avenue at Mission Street in the AM and PM peak hours for Existing Conditions, Scenario 4, and the difference in queue length between the two scenarios. Queues that exceed available storage are shown in orange. As shown, Scenario 4 would have longer queues in the westbound through movement in both peak hours and the southbound through and right turn movement in the PM peak hour, albeit lesser than in Scenario 3. The other inbound movement of the northbound left-turn experiences a small addition to its 95th percentile queue length.

**Table 22: 95<sup>th</sup> Percentile Queue Length – Fair Oaks Avenue at Mission Street (Scenario 4)**

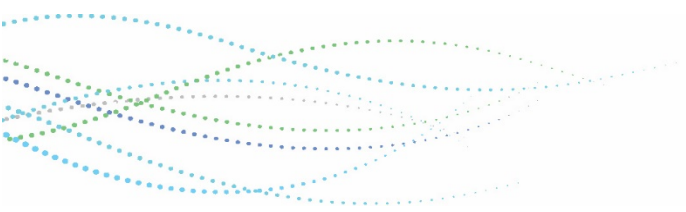
Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
AM Peak Hour	Existing	105	249	-	89	423	-	194	347	333	173	315	284
	Scenario 4	91	216	-	90	387	-	203	350	339	184	325	296
	<b>Difference</b>	<b>14</b>	<b>(33)</b>	-	<b>1</b>	<b>(46)</b>	-	<b>9</b>	<b>3</b>	<b>6</b>	<b>11</b>	<b>10</b>	<b>12</b>
PM Peak Hour	Existing	133	330	0	109	494	-	188	342	328	220	936	942
	Scenario 4	125	303	0	110	621	-	197	344	327	217	848	843
	<b>Difference</b>	<b>(8)</b>	<b>(27)</b>	-	<b>1</b>	<b>227</b>	-	<b>9</b>	<b>2</b>	<b>(1)</b>	<b>(3)</b>	<b>(88)</b>	<b>(101)</b>

Table 23 shows the storage block time percentage of Fair Oaks Avenue at Mission Street in the AM and PM peak hours for Existing Conditions, Scenario 4, and the difference between the two scenarios. As shown Scenario 4 would have a minor change on storage block time as compared to existing conditions.

**Table 23: Storage Block Time Percent – Fair Oaks Avenue at Mission Street (Scenario 4)**

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
AM Peak Hour	Existing	-	-	-	-	49	-	1	21	-	-	17	-
	Scenario 4	-	-	-	-	46	-	1	22	-	1	19	-
	<b>Difference</b>	-	-	-	-	<b>(3)</b>	-	-	<b>1</b>	-	<b>1</b>	<b>2</b>	-
PM Peak Hour	Existing	-	-	-	1	52	-	-	23	-	4	52	-
	Scenario 4	-	-	-	1	55	-	2	21	-	7	47	-
	<b>Difference</b>	-	-	-	-	<b>3</b>	-	<b>2</b>	<b>(2)</b>	-	<b>3</b>	<b>(5)</b>	-

Table 24 shows the upstream block time percentage of Fair Oaks Avenue at Mission Street in the AM and PM peak hours for Existing Conditions, Scenario 4, and the difference between the two scenarios. As shown,





Scenario 3 would reduce the amount of time the southbound through and right-turn movement are blocked.

**Table 24: Upstream Block Time Percent – Fair Oaks Avenue at Mission Street (Scenario 4)**

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
AM Peak Hour	Existing	-	-	-	-	-	-	-	3	2	-	-	-
	Scenario 4	-	-	-	-	-	-	-	3	2	-	-	-
	<b>Difference</b>	-	-	-	-	-	-	-	-	-	-	-	-
PM Peak Hour	Existing	-	1	-	-	-	-	-	3	2	-	40	40
	Scenario 4	-	-	-	-	3	-	-	3	2	-	26	24
	<b>Difference</b>	-	-	-	-	<b>3</b>	-	-	-	-	-	<b>(14)</b>	<b>(16)</b>

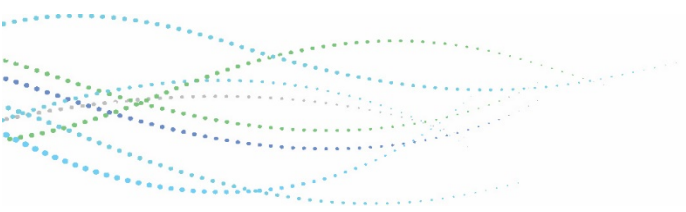
**Mission Street/ Fremont Avenue**

Similar to Fair Oaks Avenue, Fremont Avenue carries higher volumes of vehicles than Mission Street, which limits the amount of green time available for east-west operations. Turn pocket length on the east and westbound approaches need to be adequate to provide storage to move left-turning vehicles from through movements and prevent blockage of east-west through movements due to a queue spillback blockage. However Fremont Avenue is a constrained location with few options to reduce eastbound and westbound through lanes from a four to a two lane configuration and process the travel demand.

Table 25 presents the 95th Percentile Queue Length of Fremont Avenue at Mission Street in the AM and PM peak hours for Existing Conditions, Scenario 4, and the difference in queue length between the two scenarios. Queues that exceed available storage are shown in orange. Note that Scenario 4 includes the following expanded and additional storage:

- Extend eastbound left-turn storage from 75 to 125 feet
- Lane reduction though a lane drop of the westbound left-turn lane with extended westbound left-turn lane storage for the block between Mound Avenue and Fremont Avenue.

As shown, Scenario 4 would have longer queues in all movements with the exception of southbound left-turn.







**Table 25: 95<sup>th</sup> Percentile Queue Length – Fremont Avenue at Mission Street (Scenario 4)**

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
AM Peak Hour	Existing	71	113	180	81	132	162	87	350	123	117	469	74
	Scenario 4	180	469	469	113	358	358	91	330	123	116	521	79
	<b>Difference</b>	<b>109</b>	<b>356</b>	<b>289</b>	<b>32</b>	<b>226</b>	<b>196</b>	<b>4</b>	<b>(20)</b>	<b>-</b>	<b>(1)</b>	<b>52</b>	<b>5</b>
PM Peak Hour	Existing	82	196	276	88	126	155	90	366	98	122	849	120
	Scenario 4	187	650	650	356	347	347	91	369	105	122	907	121
	<b>Difference</b>	<b>105</b>	<b>454</b>	<b>374</b>	<b>268</b>	<b>221</b>	<b>192</b>	<b>1</b>	<b>3</b>	<b>7</b>	<b>-</b>	<b>58</b>	<b>1</b>

Table 26 shows the storage block time percentage of Fremont Avenue at Mission Street in the AM and PM peak hours for Existing Conditions, Scenario 4, and the difference between the two scenarios.

As shown Scenario 4 would increase the storage block time with the exception of the westbound through and left-turn lane which is extended as a drop lane from Mound Avenue. While the eastbound through blockage time is improved over Scenario 3, it is still present under Scenario 4.

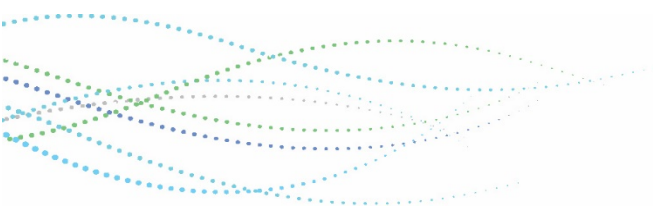
**Table 26: Storage Block Time Percent – Fremont Avenue at Mission Street (Scenario 4)**

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
AM Peak Hour	Existing	1	2	-	3	8	-	15	39	-	16	26	-
	Scenario 4	19	27	-	-	-	-	19	44	-	15	31	-
	<b>Difference</b>	<b>18</b>	<b>25</b>	<b>-</b>	<b>(3)</b>	<b>(8)</b>	<b>-</b>	<b>4</b>	<b>5</b>	<b>-</b>	<b>(1)</b>	<b>5</b>	<b>-</b>
PM Peak Hour	Existing	1	8	-	10	6	-	27	40	-	20	24	-
	Scenario 4	3	64	-	-	-	-	32	46	-	35	40	-
	<b>Difference</b>	<b>2</b>	<b>56</b>	<b>-</b>	<b>(10)</b>	<b>(6)</b>	<b>-</b>	<b>5</b>	<b>6</b>	<b>-</b>	<b>15</b>	<b>16</b>	<b>-</b>

Table 27 shows the upstream block time percentage of Fremont Avenue at Mission Street in the AM and PM peak hours for Existing Conditions, Scenario 4, and the difference between the two scenarios. As shown, in the PM peak hour Scenario 4 would have significant spillback on the eastbound through movement, southbound through movement.

**Table 27: Upstream Block Time Percent – Fremont Avenue at Mission Street (Scenario 4)**

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
AM Peak Hour	Existing	-	-	-	-	-	-	-	7	-	-	1	-
	Scenario 4	-	6	-	-	3	-	-	12	-	-	1	-
	<b>Difference</b>	<b>-</b>	<b>6</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>5</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
PM Peak Hour	Existing	-	-	-	-	-	-	-	6	-	-	23	-
	Scenario 4	-	12	-	13	5	-	-	8	-	-	43	-
	<b>Difference</b>	<b>-</b>	<b>12</b>	<b>-</b>	<b>13</b>	<b>5</b>	<b>-</b>	<b>-</b>	<b>2</b>	<b>-</b>	<b>-</b>	<b>20</b>	<b>-</b>







**Mission Street/ Meridian Avenue**

The Mission Street at Meridian Avenue intersection has a complex interaction with the Metro Gold Line tracks which cross in a diagonal direction. The analysis includes phasing for the Metro Gold Line to simulate rail gate down time.

**Table 28** presents the 95th Percentile Queue Length of Meridian Avenue at Mission Street in the AM and PM peak hours for Existing Conditions, Scenario 4, and the difference in queue length between the two scenarios. Queues that exceed available storage are shown in orange.

**Table 28: 95<sup>th</sup> Percentile Queue Length – Meridian Avenue at Mission Street (Scenario 4)**

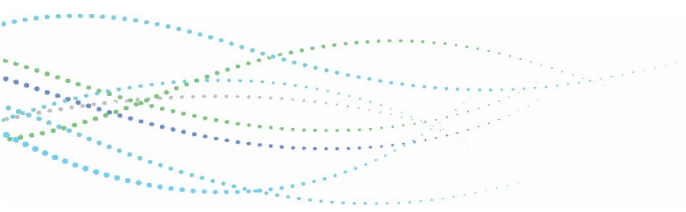
Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
AM Peak Hour	Existing	-	123	158	-	137	161	-	192	-	129	129	-
	Scenario 4	-	302	-	-	222	52	-	-	-	135	135	-
	<b>Difference</b>	-	<b>179</b>	<b>(158)</b>	-	<b>85</b>	<b>109</b>	-	<b>(192)</b>	-	<b>6</b>	<b>6</b>	-
PM Peak Hour	Existing	-	168	202	-	141	173	-	171	-	151	151	-
	Scenario 4	-	364	-	-	250	44	-	157	-	156	156	-
	<b>Difference</b>	-	<b>196</b>	<b>(202)</b>	-	<b>109</b>	<b>(129)</b>	-	<b>(14)</b>	-	<b>5</b>	<b>5</b>	-

**Table 29** shows the storage block time percentage of Meridian Avenue at Mission Street in the AM and PM peak hours for Existing Conditions, Scenario 4, and the difference between the two scenarios. As shown Scenario 4 would increase the AM peak hour storage block time in the westbound through movement.

**Table 29: Storage Block Time Percent – Meridian Avenue at Mission Street (Scenario 4)**

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
AM Peak Hour	Existing	-	-	-	-	-	-	-	-	-	-	-	-
	Scenario 4	-	-	-	-	11	-	-	-	-	-	-	-
	<b>Difference</b>	-	-	-	-	<b>11</b>	-	-	-	-	-	-	-
PM Peak Hour	Existing	-	-	-	-	-	-	-	-	-	-	-	-
	Scenario 4	-	-	-	-	-	-	-	-	-	-	-	-
	<b>Difference</b>	-	-	-	-	-	-	-	-	-	-	-	-

**Table 30** shows the upstream block time percentage of Meridian Avenue at Mission Street in the AM and PM peak hours for Existing Conditions, Scenario 4, and the difference between the two scenarios. As shown, there is spillback on the eastbound through and westbound movement.





**Table 39: Upstream Block Time Percent – Meridian Avenue at Mission Street (Scenario 4)**

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
AM Peak Hour	Existing	-	-	-	-	-	-	-	-	-	-	-	-
	Scenario 4	-	3	-	-	3	-	-	1	-	-	-	-
	<b>Difference</b>	-	<b>3</b>	-	-	<b>3</b>	-	-	<b>1</b>	-	-	-	-
PM Peak Hour	Existing	-	-	-	-	-	-	-	-	-	-	-	-
	Scenario 4	-	6	-	-	9	-	-	-	-	-	-	-
	<b>Difference</b>	-	<b>6</b>	-	-	<b>9</b>	-	-	-	-	-	-	-

**Mission Street/ Orange Grove Avenue**

The intersection of Mission Street with Orange Grove Avenue is the western end of the studied lane reduction Scenario 4, with the reduction transition occurring east of the intersection for eastbound traffic.

Table 31 presents the 95th Percentile Queue Length of Orange Grove Avenue (East) at Mission Street in the AM and PM peak hours for Existing Conditions Scenario 4, and the difference in queue length between the two scenarios. Queues that exceed available storage are shown in orange.

As shown, Scenario 4 would increase the southbound left/right shared lane queue in the AM peak hour and the eastbound right turning movement queue in the PM peak hour, but would have a largely neutral effect on queue length as compared to the Existing Conditions.

**Table 31: 95<sup>th</sup> Percentile Queue Length – Orange Grove Avenue at Mission Street (Scenario 4)**

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBLR	SBR
AM Peak Hour	Existing	61	159	97	-	82	114	-	-	-	85	198	74
	Scenario 4	70	162	108	-	86	108	-	-	-	75	231	77
	<b>Difference</b>	9	3	11	-	4	(6)	-	-	-	10	33	3
PM Peak Hour	Existing	72	151	97	-	99	136	-	-	-	69	206	81
	Scenario 4	72	138	118	-	95	125	-	-	-	62	203	74
	<b>Difference</b>	-	(13)	25	-	(4)	(9)	-	-	-	(7)	(3)	(7)

Table 32 shows the storage block time percentage of Orange Grove Avenue at Mission Street in the AM and PM peak hours for Existing Conditions, Scenario 4, and the difference between the two scenarios. As shown Scenario 4 would reduce the storage block time in the eastbound movements but slightly increases those for the southbound movements.

**Table 32: Storage Block Time Percent – Orange Grove Avenue at Mission Street (Scenario 4)**

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBLR	SBR
AM Peak Hour	Existing	40	8	-	-	-	-	-	-	-	-	11	-
	Scenario 4	40	6	-	-	-	-	-	-	-	-	15	-
	<b>Difference</b>	-	(2)	-	-	-	-	-	-	-	-	4	-
PM Peak Hour	Existing	32	8	-	-	-	-	-	-	-	-	11	-
	Scenario 4	31	3	-	-	-	-	-	-	-	-	13	-
	<b>Difference</b>	(1)	(5)	-	-	-	-	-	-	-	-	2	-

Table 33 shows the upstream block time percentage of Meridian Avenue at Mission Street in the AM and PM

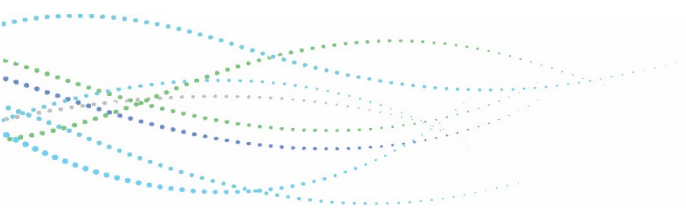




peak hours for Existing Conditions, Scenario 4, and the difference between the two scenarios. As shown, in the AM peak hour Scenario 4 would reduce the eastbound and southbound spillback with minimal change to the PM peak hour conditions.

**Table 33: Upstream Block Time Percent – Orange Grove Avenue at Mission Street (Scenario 4)**

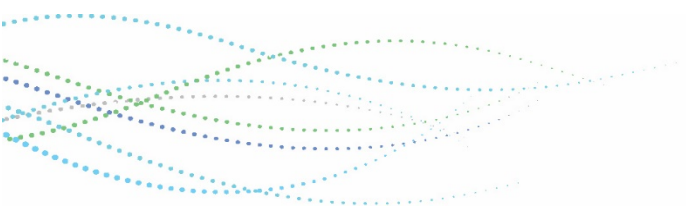
Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBLR	SBR
AM Peak Hour	Existing	27	6	-	-	-	-	-	-	-	10	-	10
	Scenario 4	-	10	6	-	-	-	-	-	-	-	1	-
	<b>Difference</b>	<b>(27)</b>	<b>4</b>	<b>6</b>	-	-	-	-	-	-	<b>(10)</b>	<b>1</b>	<b>(10)</b>
PM Peak Hour	Existing	-	6	-	-	-	-	-	-	-	-	-	-
	Scenario 4	-	4	1	-	-	-	-	-	-	-	-	-
	<b>Difference</b>	-	<b>(2)</b>	<b>1</b>	-	-	-	-	-	-	-	-	-





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## APPENDIX A: SYNCHRO OUTPUT SHEETS EXISTING CONDITIONS - AM PEAK HOUR



Lanes, Volumes, Timings  
1: Fair Oaks Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	171	99	32	229	150	84	1082	20	84	873	61
Future Volume (vph)	79	171	99	32	229	150	84	1082	20	84	873	61
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	10	16	12	10	11	12	10	11	12
Storage Length (ft)	0		0	75		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr <sub>t</sub>		0.945			0.941			0.997			0.990	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1391	1176	0	1391	1673	0	1652	3377	0	1652	3340	0
Fl <sub>t</sub> Permitted	0.151			0.580			0.950			0.950		
Satd. Flow (perm)	221	1176	0	849	1673	0	1652	3377	0	1652	3340	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32			31			2			9	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		427			434			375			355	
Travel Time (s)		9.7			9.9			8.5			8.1	
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.87	0.87	0.87	0.95	0.95	0.95
Bus Blockages (#/hr)	0	0	0	0	0	0	0	5	0	0	7	0
Parking (#/hr)		10	10									
Adj. Flow (vph)	86	186	108	34	241	158	97	1244	23	88	919	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	86	294	0	34	399	0	97	1267	0	88	983	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.35	1.65	1.24	1.35	1.06	1.24	1.09	1.06	1.00	1.09	1.06	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
1: Fair Oaks Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases	3	8			4		1	6		5	2	
Permitted Phases	8			4								
Detector Phase	3	8		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	4.0	10.0		10.0	10.0		9.0	10.0		9.0	10.0	
Minimum Split (s)	9.5	28.5		27.0	27.0		13.5	25.0		13.5	25.0	
Total Split (s)	11.0	38.0		27.0	27.0		15.0	47.0		15.0	47.0	
Total Split (%)	11.0%	38.0%		27.0%	27.0%		15.0%	47.0%		15.0%	47.0%	
Maximum Green (s)	8.0	34.0		23.0	23.0		12.0	43.0		12.0	43.0	
Yellow Time (s)	3.0	3.5		3.5	3.5		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	0.5		0.5	0.5		0.0	0.0		0.0	0.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.5	3.0		3.0	3.0		1.5	4.0		1.5	4.0	
Minimum Gap (s)	2.5	3.0		3.0	3.0		1.5	3.0		1.5	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)		7.0		6.0	6.0			7.0			7.0	
Flash Dont Walk (s)		17.0		17.0	17.0			13.0			13.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	33.3	32.3		23.5	23.5		10.3	49.1		10.0	48.9	
Actuated g/C Ratio	0.33	0.32		0.24	0.24		0.10	0.49		0.10	0.49	
v/c Ratio	0.54	0.73		0.17	0.96		0.57	0.76		0.53	0.60	
Control Delay	35.6	38.3		33.6	71.1		58.1	22.7		54.7	21.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.3		0.0	0.0	
Total Delay	35.6	38.3		33.6	71.1		58.1	23.0		54.7	21.9	
LOS	D	D		C	E		E	C		D	C	
Approach Delay		37.7			68.1			25.5			24.6	
Approach LOS		D			E			C			C	
Queue Length 50th (ft)	38	144		18	237		60	360		55	245	
Queue Length 95th (ft)	74	246		45	#429		116	310		103	330	
Internal Link Dist (ft)		347			354			295			275	
Turn Bay Length (ft)				75			150			150		
Base Capacity (vph)	166	421		199	417		198	1658		198	1636	
Starvation Cap Reductn	0	0		0	0		0	71		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.52	0.70		0.17	0.96		0.49	0.80		0.44	0.60	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow  
 Natural Cycle: 90

# Lanes, Volumes, Timings

## 1: Fair Oaks Ave & Mission St

12/28/2021

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 32.3

Intersection LOS: C

Intersection Capacity Utilization 81.8%


ICU Level of Service D

Analysis Period (min) 15

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























Queue shown is maximum after two cycles.

Splits and Phases: 1: Fair Oaks Ave & Mission St

 Ø1	 Ø2 (R)	 Ø3	 Ø4
15 s	47 s	11 s	27 s
 Ø5	 Ø6 (R)	 Ø8	
15 s	47 s	38 s	

Lanes, Volumes, Timings  
2: Fremont Ave & Mission St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	243	87	36	273	66	79	714	32	86	566	16
Future Volume (vph)	44	243	87	36	273	66	79	714	32	86	566	16
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	10	12	10	10	12	10	10	10	10	10	10
Storage Length (ft)	75		0	75		0	50		100	75		100
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.960			0.971				0.850			0.850
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1391	2460	0	1391	2488	0	1391	1464	1244	1391	1464	1244
Fl <sub>t</sub> Permitted	0.425			0.475			0.340			0.249		
Satd. Flow (perm)	622	2460	0	695	2488	0	498	1464	1244	365	1464	1244
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		84			49				31			27
Link Speed (mph)		30			30			30				30
Link Distance (ft)		613			414			375				744
Travel Time (s)		13.9			9.4			8.5				16.9
Peak Hour Factor	0.87	0.87	0.87	0.80	0.80	0.80	0.92	0.92	0.92	0.89	0.89	0.89
Bus Blockages (#/hr)	0	2	2	0	2	2	0	0	0	0	0	0
Parking (#/hr)		10	10		10	10						
Adj. Flow (vph)	51	279	100	45	341	83	86	776	35	97	636	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	379	0	45	424	0	86	776	35	97	636	18
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.35	1.50	1.24	1.35	1.50	1.24	1.35	1.35	1.35	1.35	1.35	1.35
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0



Lanes, Volumes, Timings  
2: Fremont Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	18.5	18.5		18.5	18.5		20.5	20.5	20.5	20.5	20.5	20.5
Total Split (s)	21.0	21.0		21.0	21.0		39.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	35.0%	35.0%		35.0%	35.0%		65.0%	65.0%	65.0%	65.0%	65.0%	65.0%
Maximum Green (s)	16.5	16.5		16.5	16.5		33.5	33.5	33.5	33.5	33.5	33.5
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5		4.5	4.5		5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		2.0	2.0		4.5	4.5	4.5	2.0	2.0	2.0
Minimum Gap (s)	3.0	3.0		2.0	2.0		3.5	3.5	3.5	2.0	2.0	2.0
Time Before Reduce (s)	1.5	1.5		0.0	0.0		2.0	2.0	2.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		8.0	8.0	8.0	8.0	8.0	8.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	13.3	13.3		13.3	13.3		36.7	36.7	36.7	36.7	36.7	36.7
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.61	0.61	0.61	0.61	0.61	0.61
v/c Ratio	0.37	0.62		0.29	0.72		0.28	0.87	0.05	0.43	0.71	0.02
Control Delay	26.8	20.4		23.4	25.9		14.7	24.6	7.2	15.5	15.3	2.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.8	0.0	0.0	1.1	0.0
Total Delay	26.8	20.4		23.4	25.9		14.7	25.5	7.2	15.5	16.4	2.2
LOS	C	C		C	C		B	C	A	B	B	A
Approach Delay		21.1			25.7			23.7			16.0	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)	16	49		14	65		21	220	3	16	137	0
Queue Length 95th (ft)	40	78		32	86		m34	m#368	m7	62	#345	5
Internal Link Dist (ft)		533			334			295			664	
Turn Bay Length (ft)	75			75			50		100	75		100
Base Capacity (vph)	171	737		191	719		304	894	772	223	894	770
Starvation Cap Reductn	0	0		0	0		0	22	0	0	0	0
Spillback Cap Reductn	0	3		0	0		0	0	0	0	96	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.52		0.24	0.59		0.28	0.89	0.05	0.43	0.80	0.02

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 18 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 60

# Lanes, Volumes, Timings

## 2: Fremont Ave & Mission St

12/28/2021

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 21.4

Intersection LOS: C

Intersection Capacity Utilization 81.7%

ICU Level of Service D

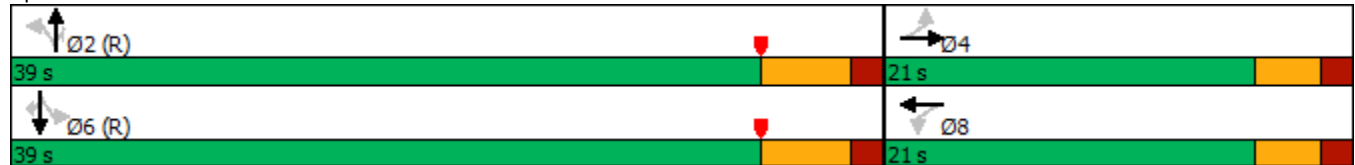
Analysis Period (min) 15

# 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.

Splits and Phases: 2: Fremont Ave & Mission St



Lanes, Volumes, Timings  
3: Meridian Ave & Mission St

12/28/2021



Lane Group	EBL2	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR2
Lane Configurations		↑↑			↑↑			↑			↑	
Traffic Volume (vph)	6	320	49	6	306	40	60	139	16	15	100	3
Future Volume (vph)	6	320	49	6	306	40	60	139	16	15	100	3
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	11	12	12	11	12	12	13	12	12	13	12
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.983			0.990			0.996	
Flt Protected		0.999			0.999			0.986			0.994	
Satd. Flow (prot)	0	2601	0	0	2617	0	0	1582	0	0	1605	0
Flt Permitted		0.948			0.948			0.887			0.947	
Satd. Flow (perm)	0	2468	0	0	2483	0	0	1423	0	0	1529	0
Right Turn on Red									No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		408			294			373			340	
Travel Time (s)		9.3			6.7			10.2			9.3	
Peak Hour Factor	0.90	0.90	0.90	0.82	0.82	0.82	0.80	0.80	0.80	0.80	0.80	0.80
Bus Blockages (#/hr)	0	2	2	0	0	0	0	0	0	0	0	0
Parking (#/hr)		10	10		10	10						
Adj. Flow (vph)	7	356	54	7	373	49	75	174	20	19	125	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	417	0	0	429	0	0	269	0	0	148	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.43	1.24	1.24	1.43	1.24	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		

Lanes, Volumes, Timings  
3: Meridian Ave & Mission St

12/28/2021



Lane Group	NET	SWT
Lane Configurations	↑	↑
Traffic Volume (vph)	8	8
Future Volume (vph)	8	8
Ideal Flow (vphpl)	1600	1600
Lane Width (ft)	12	12
Lane Util. Factor	1.00	1.00
Frt		
Flt Protected		
Satd. Flow (prot)	1569	1569
Flt Permitted		
Satd. Flow (perm)	1569	1569
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)	30	30
Link Distance (ft)	356	325
Travel Time (s)	8.1	7.4
Peak Hour Factor	0.92	0.92
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Adj. Flow (vph)	9	9
Shared Lane Traffic (%)		
Lane Group Flow (vph)	9	9
Enter Blocked Intersection	No	No
Lane Alignment	Left	Left
Median Width(ft)	0	0
Link Offset(ft)	0	0
Crosswalk Width(ft)	16	16
Two way Left Turn Lane		
Headway Factor	1.24	1.24
Turning Speed (mph)		
Number of Detectors	2	2
Detector Template	Thru	Thru
Leading Detector (ft)	100	100
Trailing Detector (ft)	0	0
Detector 1 Position(ft)	0	0
Detector 1 Size(ft)	6	6
Detector 1 Type	Cl+Ex	Cl+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(ft)	94	94
Detector 2 Size(ft)	6	6
Detector 2 Type	Cl+Ex	Cl+Ex
Detector 2 Channel		
Detector 2 Extend (s)	0.0	0.0
Turn Type	NA	NA
Protected Phases	9	9
Permitted Phases		

Lanes, Volumes, Timings  
3: Meridian Ave & Mission St

12/28/2021



Lane Group	EBL2	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR2
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	24.0	24.0		24.0	24.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	28.7	28.7		28.7	28.7		28.5	28.5		27.5	27.5	
Total Split (s)	40.0	40.0		40.0	40.0		40.0	40.0		40.0	40.0	
Total Split (%)	32.0%	32.0%		32.0%	32.0%		32.0%	32.0%		32.0%	32.0%	
Maximum Green (s)	35.3	35.3		35.3	35.3		35.8	35.8		35.8	35.8	
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	3.2		3.2	3.2	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.7			4.7			4.2			4.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0		3.5	3.5		3.5	3.5	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	12.0	12.0		16.0	16.0		19.0	19.0		18.0	18.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		30.4			30.4			20.6			20.6	
Actuated g/C Ratio		0.41			0.41			0.28			0.28	
v/c Ratio		0.41			0.42			0.67			0.34	
Control Delay		26.3			26.4			36.9			28.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		26.3			26.4			36.9			28.3	
LOS		C			C			D			C	
Approach Delay		26.3			26.4			36.9			28.3	
Approach LOS		C			C			D			C	
Queue Length 50th (ft)		32			33			62			31	
Queue Length 95th (ft)		211			193			238			131	
Internal Link Dist (ft)		328			214			293			260	
Turn Bay Length (ft)												
Base Capacity (vph)		1452			1461			849			912	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.29			0.29			0.32			0.16	

Intersection Summary

Area Type:	Other
Cycle Length:	125
Actuated Cycle Length:	73.4
Natural Cycle:	105
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.67
Intersection Signal Delay:	28.7
Intersection LOS:	C
Intersection Capacity Utilization:	85.4%
ICU Level of Service:	E
Analysis Period (min):	15

Lanes, Volumes, Timings  
 3: Meridian Ave & Mission St

12/28/2021

Splits and Phases: 3: Meridian Ave & Mission St

 Ø2 40 s	 Ø4 40 s	 Ø9 45 s
 Ø6 40 s	 Ø8 40 s	

Lanes, Volumes, Timings  
 3: Meridian Ave & Mission St

12/28/2021



Lane Group	NET	SWT
Detector Phase	9	9
Switch Phase		
Minimum Initial (s)	40.5	40.5
Minimum Split (s)	45.0	45.0
Total Split (s)	45.0	45.0
Total Split (%)	36.0%	36.0%
Maximum Green (s)	40.5	40.5
Yellow Time (s)	3.5	3.5
All-Red Time (s)	1.0	1.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	4.5	4.5
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)	49.6	49.6
Actuated g/C Ratio	0.68	0.68
v/c Ratio	0.01	0.01
Control Delay	21.4	21.4
Queue Delay	0.0	0.0
Total Delay	21.4	21.4
LOS	C	C
Approach Delay	21.4	21.4
Approach LOS	C	C
Queue Length 50th (ft)	0	0
Queue Length 95th (ft)	17	17
Internal Link Dist (ft)	276	245
Turn Bay Length (ft)		
Base Capacity (vph)	1059	1059
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.01	0.01
<b>Intersection Summary</b>		



Lanes, Volumes, Timings  
4: Mission St & Orange Grove Ave

12/28/2021



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	279	263	256	110	130	185
Future Volume (vph)	279	263	256	110	130	185
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	11	12	11	11
Storage Length (ft)	40			0	100	100
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	0.91
Frt			0.955		0.941	0.850
Flt Protected	0.950				0.971	
Satd. Flow (prot)	1391	2654	2545	0	2688	1173
Flt Permitted	0.506				0.971	
Satd. Flow (perm)	741	2654	2545	0	2688	1173
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			126		106	125
Link Speed (mph)		30	30		30	
Link Distance (ft)		161	588		432	
Travel Time (s)		3.7	13.4		9.8	
Peak Hour Factor	0.80	0.80	0.87	0.87	0.80	0.80
Bus Blockages (#/hr)	0	2	0	0	0	0
Parking (#/hr)		10	10	10		
Adj. Flow (vph)	349	329	294	126	163	231
Shared Lane Traffic (%)						46%
Lane Group Flow (vph)	349	329	420	0	269	125
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		22	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.35	1.43	1.43	1.24	1.30	1.30
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	6	6		20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			

Lanes, Volumes, Timings  
4: Mission St & Orange Grove Ave

12/28/2021



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Detector Phase	4	4	8		6	6
Switch Phase						
Minimum Initial (s)	30.0	30.0	30.0		4.0	4.0
Minimum Split (s)	35.0	35.0	35.0		24.0	24.0
Total Split (s)	36.0	36.0	36.0		24.0	24.0
Total Split (%)	60.0%	60.0%	60.0%		40.0%	40.0%
Maximum Green (s)	31.0	31.0	31.0		20.0	20.0
Yellow Time (s)	4.0	4.0	4.0		3.0	3.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Min	Min	Min		None	None
Walk Time (s)			20.0		8.0	8.0
Flash Dont Walk (s)			10.0		12.0	12.0
Pedestrian Calls (#/hr)			0		0	0
Act Effct Green (s)	30.6	30.6	30.6		8.3	8.3
Actuated g/C Ratio	0.64	0.64	0.64		0.17	0.17
v/c Ratio	0.74	0.19	0.25		0.49	0.41
Control Delay	20.3	4.3	3.3		14.0	8.8
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	20.3	4.3	3.3		14.0	8.8
LOS	C	A	A		B	A
Approach Delay		12.5	3.3		12.3	
Approach LOS		B	A		B	
Queue Length 50th (ft)	52	15	13		21	0
Queue Length 95th (ft)	#174	30	32		39	27
Internal Link Dist (ft)		81	508		352	
Turn Bay Length (ft)	40				100	100
Base Capacity (vph)	479	1717	1691		1184	562
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	0.73	0.19	0.25		0.23	0.22

Intersection Summary	
Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	48
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.74
Intersection Signal Delay:	9.9
Intersection Capacity Utilization	68.4%
Intersection LOS:	A
ICU Level of Service	C

# Lanes, Volumes, Timings

## 4: Mission St & Orange Grove Ave

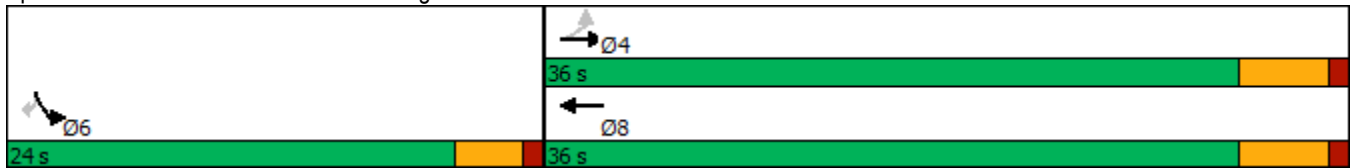
12/28/2021

Analysis Period (min) 15

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




















Queue shown is maximum after two cycles.

Splits and Phases: 4: Mission St & Orange Grove Ave



Lanes, Volumes, Timings  
5: Fair Oaks Ave & El Centro St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	26	26	5	25	2	76	1166	14	8	945	51
Future Volume (vph)	18	26	26	5	25	2	76	1166	14	8	945	51
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	11	12	10	11	12
Storage Length (ft)	0		0	0		0	75		0	75		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.950			0.990			0.998			0.992	
Flt Protected		0.987			0.993		0.950			0.950		
Satd. Flow (prot)	0	1422	0	0	1491	0	1652	3414	0	1652	3394	0
Flt Permitted		0.904			0.965		0.233			0.196		
Satd. Flow (perm)	0	1302	0	0	1449	0	405	3414	0	341	3394	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			3			2			9	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		420			404			386			375	
Travel Time (s)		11.5			11.0			8.8			8.5	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	23	33	33	6	31	3	83	1267	15	9	1005	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	89	0	0	40	0	83	1282	0	9	1059	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.30	1.24	1.24	1.30	1.24	1.09	1.04	1.00	1.09	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		1	6		5	2	

Lanes, Volumes, Timings  
5: Fair Oaks Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		4.0	10.0		4.0	10.0	
Minimum Split (s)	27.0	27.0		27.0	27.0		7.0	34.0		8.0	34.0	
Total Split (s)	29.0	29.0		29.0	29.0		9.0	63.0		8.0	62.0	
Total Split (%)	29.0%	29.0%		29.0%	29.0%		9.0%	63.0%		8.0%	62.0%	
Maximum Green (s)	24.5	24.5		24.5	24.5		6.0	59.0		4.0	58.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.0	0.0		1.0	0.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		3.0	4.0		4.0	4.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	2.0		2.5	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)	7.0	7.0		6.0	6.0			9.0			9.0	
Flash Dont Walk (s)	15.5	15.5		16.5	16.5			21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		11.5			11.5		83.5	81.8		79.6	76.3	
Actuated g/C Ratio		0.12			0.12		0.84	0.82		0.80	0.76	
v/c Ratio		0.51			0.24		0.20	0.46		0.03	0.41	
Control Delay		39.5			40.5		3.3	4.8		1.4	2.7	
Queue Delay		0.0			0.0		0.0	0.1		0.0	0.1	
Total Delay		39.5			40.5		3.3	4.9		1.4	2.8	
LOS		D			D		A	A		A	A	
Approach Delay		39.5			40.5			4.8			2.8	
Approach LOS		D			D			A			A	
Queue Length 50th (ft)		37			22		7	93		1	59	
Queue Length 95th (ft)		71			46		20	258		m1	47	
Internal Link Dist (ft)		340			324			306			295	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)		340			357		416	2792		338	2590	
Starvation Cap Reductn		0			0		0	0		0	510	
Spillback Cap Reductn		3			0		0	451		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.26			0.11		0.20	0.55		0.03	0.51	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 34 (34%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.51

Lanes, Volumes, Timings  
 5: Fair Oaks Ave & El Centro St

12/28/2021

Intersection Signal Delay: 5.7	Intersection LOS: A
Intersection Capacity Utilization 54.8%	ICU Level of Service A
Analysis Period (min) 15	

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

Splits and Phases: 5: Fair Oaks Ave & El Centro St

 Ø1 9 s	 Ø2 (R) 62 s	 Ø4 29 s
 Ø5 8 s	 Ø6 (R) 63 s	 Ø8 29 s

Lanes, Volumes, Timings  
6: Fremont Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Volume (vph)	19	86	43	16	69	24	45	782	8	5	670	14
Future Volume (vph)	19	86	43	16	69	24	45	782	8	5	670	14
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	10	12	12	10	12	12
Storage Length (ft)	0		0	0		0	75		0	75		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.961			0.970			0.998			0.997	
Fl <sub>t</sub> Protected		0.994			0.993		0.950			0.950		
Satd. Flow (prot)	0	1548	0	0	1561	0	1391	1565	0	1391	1564	0
Fl <sub>t</sub> Permitted		0.946			0.943		0.263			0.206		
Satd. Flow (perm)	0	1474	0	0	1483	0	385	1565	0	302	1564	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35			24			1			3	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		632			417			438			375	
Travel Time (s)		17.2			11.4			10.0			8.5	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.94	0.94	0.94	0.91	0.91	0.91
Adj. Flow (vph)	24	108	54	20	86	30	48	832	9	5	736	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	186	0	0	136	0	48	841	0	5	751	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.35	1.24	1.24	1.35	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	



Lanes, Volumes, Timings  
6: Fremont Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	23.0	23.0		23.0	23.0		37.0	37.0		37.0	37.0	
Total Split (%)	38.3%	38.3%		38.3%	38.3%		61.7%	61.7%		61.7%	61.7%	
Maximum Green (s)	18.0	18.0		18.0	18.0		32.0	32.0		32.0	32.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.5	4.5		4.5	4.5		4.0	4.0		4.0	4.0	
Minimum Gap (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	1.5	1.5		1.5	1.5		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		C-Min	C-Min		C-Min	C-Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		13.0			13.0		37.0	37.0		37.0	37.0	
Actuated g/C Ratio		0.22			0.22		0.62	0.62		0.62	0.62	
v/c Ratio		0.54			0.40		0.20	0.87		0.03	0.78	
Control Delay		21.7			18.9		9.3	24.8		4.2	16.3	
Queue Delay		1.6			0.9		0.0	1.8		0.0	5.9	
Total Delay		23.4			19.8		9.3	26.6		4.2	22.1	
LOS		C			B		A	C		A	C	
Approach Delay		23.4			19.8			25.7			22.0	
Approach LOS		C			B			C			C	
Queue Length 50th (ft)		48			35		6	212		0	220	
Queue Length 95th (ft)		77			59		27	#530		m1	#452	
Internal Link Dist (ft)		552			337			358			295	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)		466			461		237	966		186	966	
Starvation Cap Reductn		0			0		0	0		0	164	
Spillback Cap Reductn		150			150		0	44		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.59			0.44		0.20	0.91		0.03	0.94	

















Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 36 (60%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.87



Lanes, Volumes, Timings  
7: Meridian Ave & El Centro St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	105	94	23	110	24	71	174	31	12	137	6
Future Volume (vph)	17	105	94	23	110	24	71	174	31	12	137	6
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	12	13	12	12	13	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.941			0.979			0.985			0.995	
Flt Protected		0.996			0.993			0.987			0.996	
Satd. Flow (prot)	0	1519	0	0	1576	0	0	1576	0	0	1606	0
Flt Permitted		0.996			0.993			0.987			0.996	
Satd. Flow (perm)	0	1519	0	0	1576	0	0	1576	0	0	1606	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1194			309			450			373	
Travel Time (s)		32.6			8.4			12.3			10.2	
Peak Hour Factor	0.81	0.81	0.81	0.80	0.80	0.80	0.80	0.80	0.80	0.86	0.86	0.86
Adj. Flow (vph)	21	130	116	29	138	30	89	218	39	14	159	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	267	0	0	197	0	0	346	0	0	180	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	54.4%						ICU Level of Service A					
Analysis Period (min)	15											

Lanes, Volumes, Timings  
8: orange Grove Ave & El Centro St

12/28/2021





















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	↕
Traffic Volume (vph)	16	128	14	5	126	56	20	43	6	82	52	15
Future Volume (vph)	16	128	14	5	126	56	20	43	6	82	52	15
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	12	13	12	13	13	12
Storage Length (ft)	0		0	0		0	0		0	0		75
Storage Lanes	0		0	0		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.960			0.988			0.967	
Flt Protected		0.995			0.999			0.986		0.950		
Satd. Flow (prot)	0	1593	0	0	1555	0	0	1579	0	1540	1567	0
Flt Permitted		0.995			0.999			0.986		0.950		
Satd. Flow (perm)	0	1593	0	0	1555	0	0	1579	0	1540	1567	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		426			1194			450			376	
Travel Time (s)		11.6			32.6			12.3			10.3	
Peak Hour Factor	0.88	0.88	0.88	0.87	0.87	0.87	0.80	0.80	0.80	0.87	0.87	0.87
Adj. Flow (vph)	18	145	16	6	145	64	25	54	8	94	60	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	179	0	0	215	0	0	87	0	94	77	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.19	1.24	1.19	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	37.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
9: Pasadena Ave & El Centro St

12/28/2021























												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	2	29	0	35	1	95	70	64	55	1
Future Volume (vph)	1	0	2	29	0	35	1	95	70	64	55	1
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	12	14	12	14	12	11	14	12	11	12
Storage Length (ft)	0		0	0		0	0		75	100		0
Storage Lanes	0		0	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.899			0.926				0.850		0.998	
Flt Protected		0.988			0.978					0.950		
Satd. Flow (prot)	0	1393	0	0	1421	0	0	1516	1411	1490	1513	0
Flt Permitted		0.988			0.978					0.950		
Satd. Flow (perm)	0	1393	0	0	1421	0	0	1516	1411	1490	1513	0
Link Speed (mph)		30			25			30			30	
Link Distance (ft)		367			417			410			724	
Travel Time (s)		8.3			11.4			9.3			16.5	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	0
Adj. Flow (vph)	1	0	3	36	0	44	1	119	88	80	69	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	80	0	0	120	88	80	70	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.24	1.24	1.24	1.15	1.24	1.15	1.24	1.30	1.16	1.24	1.30	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.2%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
11: Fremont Ave & Monterey Rd

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	564	236	89	559	39	151	720	32	40	620	31
Future Volume (vph)	90	564	236	89	559	39	151	720	32	40	620	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	12	12	10	12	12	10	10	16	10	10	16
Storage Length (ft)	150		0	125		0	100		50	100		40
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25		25			
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.956			0.990				0.850			0.850
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	3383	0	1652	3504	0	1391	1464	1511	1391	1464	1511
Fl <sub>t</sub> Permitted	0.230			0.222			0.264			0.172		
Satd. Flow (perm)	400	3383	0	386	3504	0	387	1464	1511	252	1464	1511
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		109			12				36			36
Link Speed (mph)		35			35			30				30
Link Distance (ft)		666			643			396				474
Travel Time (s)		13.0			12.5			9.0				10.8
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.91	0.91	0.91	0.93	0.93	0.93
Adj. Flow (vph)	113	705	295	111	699	49	166	791	35	43	667	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	113	1000	0	111	748	0	166	791	35	43	667	33
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.09	1.00	1.00	1.09	1.00	1.00	1.35	1.35	1.06	1.35	1.35	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			4			2				2

Lanes, Volumes, Timings  
11: Fremont Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			4			2		2	2		2
Detector Phase	4	4		4	4		2	2	2	2	2	2
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	23.0	23.0		23.0	23.0		37.0	37.0	37.0	37.0	37.0	37.0
Total Split (%)	38.3%	38.3%		38.3%	38.3%		61.7%	61.7%	61.7%	61.7%	61.7%	61.7%
Maximum Green (s)	18.0	18.0		18.0	18.0		32.0	32.0	32.0	32.0	32.0	32.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.5	4.5		4.5	4.5		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Gap (s)	3.5	3.5		3.5	3.5		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	1.5	1.5		1.5	1.5		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	18.0	18.0		18.0	18.0		32.0	32.0	32.0	32.0	32.0	32.0
Actuated g/C Ratio	0.30	0.30		0.30	0.30		0.53	0.53	0.53	0.53	0.53	0.53
v/c Ratio	0.94	0.92		0.97	0.71		0.81	1.01	0.04	0.32	0.86	0.04
Control Delay	97.4	33.3		105.3	22.7		45.6	53.6	2.8	16.0	25.9	2.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	97.4	33.3		105.3	22.7		45.6	53.6	2.8	16.0	25.9	2.7
LOS	F	C		F	C		D	D	A	B	C	A
Approach Delay		39.8			33.4			50.5				24.3
Approach LOS		D			C			D				C
Queue Length 50th (ft)	39	163		39	123		45	~271	0	8	188	0
Queue Length 95th (ft)	#107	#206		#108	151		#151	#501	10	32	#394	9
Internal Link Dist (ft)		586			563			316				394
Turn Bay Length (ft)	150			125			100		50	100		40
Base Capacity (vph)	120	1091		115	1059		206	780	822	134	780	822
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.92		0.97	0.71		0.81	1.01	0.04	0.32	0.86	0.04

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 36 (60%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.01



# Lanes, Volumes, Timings

## 11: Fremont Ave & Monterey Rd

12/28/2021

Intersection Signal Delay: 38.1 Intersection LOS: D

Intersection Capacity Utilization 93.4% ICU Level of Service F

Analysis Period (min) 15

~ 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.

Splits and Phases: 11: Fremont Ave & Monterey Rd



Lanes, Volumes, Timings  
12: Meridian Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	911	194	31	795	15	304	219	48	70	158	16
Future Volume (vph)	36	911	194	31	795	15	304	219	48	70	158	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	12	10	11	12	12	13	12	12	13	12
Storage Length (ft)	225		0	175		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.974			0.997			0.989			0.991	
Fl <sub>t</sub> Protected	0.950			0.950				0.974			0.986	
Satd. Flow (prot)	1652	3332	0	1652	3411	0	0	1561	0	0	1584	0
Fl <sub>t</sub> Permitted	0.191			0.133				0.680			0.792	
Satd. Flow (perm)	332	3332	0	231	3411	0	0	1090	0	0	1272	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		52			4			9			7	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1211			592			371			479	
Travel Time (s)		23.6			11.5			10.1			13.1	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.95	0.95	0.95	0.91	0.91	0.91
Adj. Flow (vph)	45	1139	243	39	994	19	320	231	51	77	174	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	45	1382	0	39	1013	0	0	602	0	0	269	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.00	1.09	1.04	1.00	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	

Lanes, Volumes, Timings  
12: Meridian Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	30.0	30.0		30.0	30.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	35.0	35.0		35.0	35.0		24.5	24.5		24.5	24.5	
Total Split (s)	35.0	35.0		35.0	35.0		30.0	30.0		30.0	30.0	
Total Split (%)	53.8%	53.8%		53.8%	53.8%		46.2%	46.2%		46.2%	46.2%	
Maximum Green (s)	30.0	30.0		30.0	30.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	30.0	30.0		30.0	30.0			26.0			26.0	
Actuated g/C Ratio	0.46	0.46		0.46	0.46			0.40			0.40	
v/c Ratio	0.29	0.88		0.37	0.64			1.37			0.52	
Control Delay	17.4	24.0		23.6	15.7			200.9			19.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	17.4	24.0		23.6	15.7			200.9			19.0	
LOS	B	C		C	B			F			B	
Approach Delay		23.8			16.0			200.9			19.0	
Approach LOS		C			B			F			B	
Queue Length 50th (ft)	11	238		10	152			~325			76	
Queue Length 95th (ft)	30	267		31	176			#509			143	
Internal Link Dist (ft)		1131			512			291			399	
Turn Bay Length (ft)	225			175								
Base Capacity (vph)	153	1565		106	1576			441			513	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.29	0.88		0.37	0.64			1.37			0.52	

Intersection Summary

Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	65
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.37
Intersection Signal Delay:	52.8
Intersection LOS:	D
Intersection Capacity Utilization:	95.0%
ICU Level of Service:	F
Analysis Period (min):	15

~ Volume exceeds capacity, queue is theoretically infinite.

Lanes, Volumes, Timings  
12: Meridian Ave & Monterey Rd

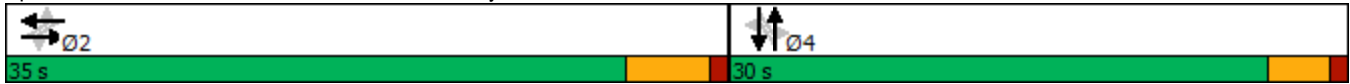
12/28/2021

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 12: Meridian Ave & Monterey Rd



Lanes, Volumes, Timings  
 13: Orange Grove Ave & Monterey Rd

12/28/2021









Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	1041	2	7	978	130	1	3	6	94	1	12
Future Volume (vph)	17	1041	2	7	978	130	1	3	6	94	1	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	12	10	11	12	12	13	12	12	13	12
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.982			0.917				0.985
Fl <sub>t</sub> Protected	0.950			0.950				0.996				0.958
Satd. Flow (prot)	1652	3421	0	1652	3360	0	0	1480	0	0	1530	0
Fl <sub>t</sub> Permitted	0.173			0.199				0.996				0.958
Satd. Flow (perm)	301	3421	0	346	3360	0	0	1480	0	0	1530	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					15			8				6
Link Speed (mph)		35			35			25				25
Link Distance (ft)		429			1211			316				446
Travel Time (s)		8.4			23.6			8.6				12.2
Peak Hour Factor	0.87	0.87	0.87	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	20	1197	2	8	1151	153	1	4	8	118	1	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	1199	0	8	1304	0	0	13	0	0	134	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.00	1.09	1.04	1.00	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases		2			6		3	3		4		4



Lanes, Volumes, Timings  
13: Orange Grove Ave & Monterey Rd

12/28/2021

Splits and Phases: 13: Orange Grove Ave & Monterey Rd

 Ø2 (R) 36 s		 Ø3 32 s	 Ø4 32 s
 Ø5 (R) 36 s			

Lanes, Volumes, Timings  
 16: Meridian Ave & Hope St

12/28/2021



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	3	53	169	16	60	115
Future Volume (vph)	3	53	169	16	60	115
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	13	12	12	13
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.873		0.988			
Flt Protected	0.997					0.983
Satd. Flow (prot)	1365	0	1601	0	0	1593
Flt Permitted	0.997					0.983
Satd. Flow (perm)	1365	0	1601	0	0	1593
Link Speed (mph)	25		25			25
Link Distance (ft)	299		340			399
Travel Time (s)	8.2		9.3			10.9
Peak Hour Factor	0.80	0.80	0.80	0.80	0.83	0.83
Adj. Flow (vph)	4	66	211	20	72	139
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	0	231	0	0	211
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.24	1.24	1.19	1.24	1.24	1.19
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free


















Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	36.9%
Analysis Period (min)	15
	ICU Level of Service A



Lanes, Volumes, Timings  
17: Fremont Ave & Grevelia St

12/28/2021

													
Lane Group	EBL2	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	NET	
Lane Configurations													
Traffic Volume (vph)	5	7	13	2	10	7	8	762	2	2	612	8	
Future Volume (vph)	5	7	13	2	10	7	8	762	2	2	612	8	
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Lane Width (ft)	12	12	12	12	12	12	12	14	12	12	14	12	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.930			0.951								
Flt Protected		0.990			0.994			0.999					
Satd. Flow (prot)	0	1444	0	0	1483	0	0	1672	0	0	1673	1569	
Flt Permitted		0.921			0.952			0.993			0.999		
Satd. Flow (perm)	0	1344	0	0	1420	0	0	1661	0	0	1672	1569	
Right Turn on Red	Yes												
Satd. Flow (RTOR)									62				
Link Speed (mph)					25					30			30
Link Distance (ft)					1201					446			255
Travel Time (s)					32.8					12.2			5.8
Peak Hour Factor	0.88	0.88	0.88	0.80	0.80	0.80	0.91	0.91	0.91	0.82	0.82	0.92	
Adj. Flow (vph)	6	8	15	3	13	9	9	837	2	2	746	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	29	0	0	25	0	0	848	0	0	748	9	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Left	
Median Width(ft)	0				0				0		0		
Link Offset(ft)	0				0				0		0		
Crosswalk Width(ft)	16				16				16				
Two way Left Turn Lane													
Headway Factor	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.15	1.24	1.24	1.15	1.24	
Turning Speed (mph)	15	9		15	9		15	9		15			
Number of Detectors	1	2	1		2	1		2	1		2	2	
Detector Template	Left	Thru	Left		Thru	Left		Thru	Left		Thru	Thru	
Leading Detector (ft)	20	100	20		100	20		100	20		100	100	
Trailing Detector (ft)	0	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20		6	20		6	20		6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel													
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	94				94				94				
Detector 2 Size(ft)	6				6				6				
Detector 2 Type	Cl+Ex				Cl+Ex				Cl+Ex				
Detector 2 Channel													
Detector 2 Extend (s)	0.0				0.0				0.0				
Turn Type	Perm	NA	Perm		NA	Perm		NA	Perm		NA	NA	
Protected Phases	4			8			2			6			
Permitted Phases	4			8			2			6			
Detector Phase	4	4	8		8	2		2	6		6	9	
Switch Phase													

Lanes, Volumes, Timings  
 17: Fremont Ave & Grevelia St

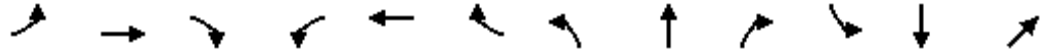
12/28/2021



Lane Group	SWT
Lane Configurations	↑
Traffic Volume (vph)	8
Future Volume (vph)	8
Ideal Flow (vphpl)	1600
Lane Width (ft)	12
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	1569
Flt Permitted	
Satd. Flow (perm)	1569
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	30
Link Distance (ft)	405
Travel Time (s)	9.2
Peak Hour Factor	0.92
Adj. Flow (vph)	9
Shared Lane Traffic (%)	
Lane Group Flow (vph)	9
Enter Blocked Intersection	No
Lane Alignment	Left
Median Width(ft)	0
Link Offset(ft)	0
Crosswalk Width(ft)	16
Two way Left Turn Lane	
Headway Factor	1.24
Turning Speed (mph)	
Number of Detectors	2
Detector Template	Thru
Leading Detector (ft)	100
Trailing Detector (ft)	0
Detector 1 Position(ft)	0
Detector 1 Size(ft)	6
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	94
Detector 2 Size(ft)	6
Detector 2 Type	Cl+Ex
Detector 2 Channel	
Detector 2 Extend (s)	0.0
Turn Type	NA
Protected Phases	9
Permitted Phases	
Detector Phase	9
Switch Phase	

Lanes, Volumes, Timings  
17: Fremont Ave & Grevelia St

12/28/2021



Lane Group	EBL2	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	NET
Minimum Initial (s)	10.0	10.0		6.0	6.0		40.0	40.0		40.0	40.0	40.5
Minimum Split (s)	20.0	20.0		11.0	11.0		45.0	45.0		45.0	45.0	45.0
Total Split (s)	25.0	25.0		25.0	25.0		45.0	45.0		45.0	45.0	45.0
Total Split (%)	21.7%	21.7%		21.7%	21.7%		39.1%	39.1%		39.1%	39.1%	39.1%
Maximum Green (s)	20.0	20.0		20.0	20.0		40.0	40.0		40.0	40.0	40.5
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		5.0			5.0			5.0			5.0	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.5	3.5		3.5	3.5		0.2	0.2		0.2	0.2	3.0
Recall Mode	None	None		None	None		Max	Max		Max	Max	None
Walk Time (s)	7.0	7.0								7.0	7.0	
Flash Dont Walk (s)	8.0	8.0								7.0	7.0	
Pedestrian Calls (#/hr)	0	0								0	0	
Act Effct Green (s)		10.9			8.3			53.5			53.5	45.1
Actuated g/C Ratio		0.16			0.13			0.81			0.81	0.68
v/c Ratio		0.13			0.14			0.63			0.55	0.01
Control Delay		31.7			32.8			14.4			14.1	11.6
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		31.7			32.8			14.4			14.1	11.6
LOS		C			C			B			B	B
Approach Delay		31.7			32.8			14.4			14.1	11.6
Approach LOS		C			C			B			B	B
Queue Length 50th (ft)		6			6			0			0	0
Queue Length 95th (ft)		46			37			#946			#725	14
Internal Link Dist (ft)		1121			366			175			537	229
Turn Bay Length (ft)												
Base Capacity (vph)		439			464			1355			1352	1069
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		0.07			0.05			0.63			0.55	0.01






Intersection Summary

Area Type: Other  
 Cycle Length: 115  
 Actuated Cycle Length: 66.2  
 Natural Cycle: 130  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.63  
 Intersection Signal Delay: 14.8      Intersection LOS: B  
 Intersection Capacity Utilization 108.8%      ICU Level of Service G  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Lanes, Volumes, Timings  
 17: Fremont Ave & Grevelia St

12/28/2021

Splits and Phases: 17: Fremont Ave & Grevelia St



















 Ø2 45 s	 Ø4 25 s	 Ø9 45 s
 Ø6 45 s	 Ø8 25 s	



Lane Group	SWT
Minimum Initial (s)	40.5
Minimum Split (s)	45.0
Total Split (s)	45.0
Total Split (%)	39.1%
Maximum Green (s)	40.5
Yellow Time (s)	3.5
All-Red Time (s)	1.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.5
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	45.1
Actuated g/C Ratio	0.68
v/c Ratio	0.01
Control Delay	11.6
Queue Delay	0.0
Total Delay	11.6
LOS	B
Approach Delay	11.6
Approach LOS	B
Queue Length 50th (ft)	0
Queue Length 95th (ft)	14
Internal Link Dist (ft)	325
Turn Bay Length (ft)	
Base Capacity (vph)	1069
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.01
<b>Intersection Summary</b>	

















Lanes, Volumes, Timings  
18: Meridian Ave & Grevelia St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	18	13	2	14	2	15	146	5	2	99	6
Future Volume (vph)	5	18	13	2	14	2	15	146	5	2	99	6
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	12	10	10	12	10	10
Storage Length (ft)	0		0	0		0	0		100	0		100
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.952			0.983				0.850			0.850
Flt Protected		0.993			0.994			0.995			0.999	
Satd. Flow (prot)	0	1532	0	0	1584	0	0	1457	1244	0	1463	1244
Flt Permitted		0.993			0.994			0.995			0.999	
Satd. Flow (perm)	0	1532	0	0	1584	0	0	1457	1244	0	1463	1244
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		441			1201			251			624	
Travel Time (s)		12.0			32.8			6.8			17.0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.84	0.84	0.84	0.80	0.80	0.80
Adj. Flow (vph)	6	23	16	3	18	3	18	174	6	3	124	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	45	0	0	24	0	0	192	6	0	127	8
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.35	1.35	1.24	1.35	1.35
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	26.9%						ICU Level of Service A					
Analysis Period (min)	15											

Lanes, Volumes, Timings  
19: Diamond Ave & Mission St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	345	6	15	326	1	26	0	46	0	0	0
Future Volume (vph)	0	345	6	15	326	1	26	0	46	0	0	0
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	11	12	12	11	12	10	12	12	12	12	12
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997						0.914				
Flt Protected					0.998			0.982				
Satd. Flow (prot)	0	2657	0	0	2660	0	0	1408	0	0	1569	0
Flt Permitted					0.998			0.982				
Satd. Flow (perm)	0	2657	0	0	2660	0	0	1408	0	0	1569	0
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		294			324			374			223	
Travel Time (s)		6.7			7.4			10.2			5.1	
Peak Hour Factor	0.84	0.84	0.84	0.88	0.88	0.88	0.87	0.87	0.87	0.25	0.25	0.25
Parking (#/hr)		10	10		10	10						
Adj. Flow (vph)	0	411	7	17	370	1	30	0	53	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	418	0	0	388	0	0	83	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.43	1.24	1.24	1.43	1.24	1.35	1.24	1.24	1.24	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	35.6%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings  
20: Fairview Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Traffic Volume (vph)	14	349	28	21	323	24	3	5	13	12	19	16
Future Volume (vph)	14	349	28	21	323	24	3	5	13	12	19	16
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	11	12	12	11	12	12	12	12	12	12	12
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989			0.990			0.917			0.954	
Flt Protected		0.998			0.997			0.992			0.987	
Satd. Flow (prot)	0	2630	0	0	2630	0	0	1427	0	0	1477	0
Flt Permitted		0.998			0.997			0.992			0.987	
Satd. Flow (perm)	0	2630	0	0	2630	0	0	1427	0	0	1477	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		324			613			381			228	
Travel Time (s)		7.4			13.9			10.4			6.2	
Peak Hour Factor	0.94	0.94	0.94	0.86	0.86	0.86	0.80	0.80	0.80	0.80	0.80	0.80
Parking (#/hr)		10	10		10	10						
Adj. Flow (vph)	15	371	30	24	376	28	4	6	16	15	24	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	416	0	0	428	0	0	26	0	0	59	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.43	1.24	1.24	1.43	1.24	1.24	1.24	1.24	1.24	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	40.5%
Analysis Period (min)	15
	ICU Level of Service A



Lanes, Volumes, Timings  
 21: Pasadena Ave & Mission St

12/28/2021



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	210	23	97	141	29	102
Future Volume (vph)	210	23	97	141	29	102
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	13	13	12	12	11	14
Storage Length (ft)		0	0		100	100
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1621	1378	1490	1569	1441	2493
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1621	1378	1490	1569	1441	2493
Link Speed (mph)	30			30	30	
Link Distance (ft)	267			367	724	
Travel Time (s)	6.1			8.3	16.5	
Peak Hour Factor	0.88	0.88	0.80	0.80	0.80	0.80
Bus Blockages (#/hr)	0	0	0	0	0	2
Adj. Flow (vph)	239	26	121	176	36	128
Shared Lane Traffic (%)						
Lane Group Flow (vph)	239	26	121	176	36	128
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane					Yes	
Headway Factor	1.19	1.19	1.24	1.24	1.30	1.15
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Free	Free	

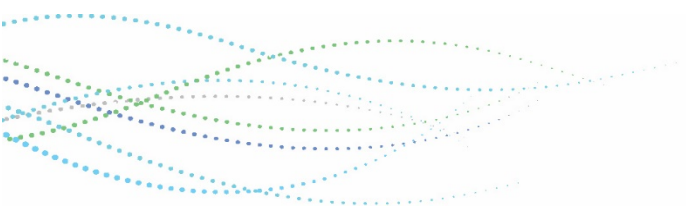
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	32.8%
ICU Level of Service	A
Analysis Period (min)	15



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## APPENDIX A: SYNCHRO OUTPUT SHEETS EXISTING CONDITIONS - PM PEAK HOUR



Lanes, Volumes, Timings  
1: Fair Oaks Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	260	101	45	240	126	79	935	51	131	1236	95
Future Volume (vph)	109	260	101	45	240	126	79	935	51	131	1236	95
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	10	16	12	10	11	12	10	11	12
Storage Length (ft)	0		0	75		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr <sub>t</sub>		0.958			0.948			0.992			0.989	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1391	1192	0	1391	1685	0	1652	3360	0	1652	3336	0
Fl <sub>t</sub> Permitted	0.152			0.428			0.950			0.950		
Satd. Flow (perm)	223	1192	0	627	1685	0	1652	3360	0	1652	3336	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			24			7			10	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		427			434			375			355	
Travel Time (s)		9.7			9.9			8.5			8.1	
Peak Hour Factor	0.86	0.86	0.86	0.96	0.96	0.96	0.95	0.95	0.95	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	5	0	0	7	0
Parking (#/hr)		10	10									
Adj. Flow (vph)	127	302	117	47	250	131	83	984	54	142	1343	103
Shared Lane Traffic (%)												
Lane Group Flow (vph)	127	419	0	47	381	0	83	1038	0	142	1446	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.35	1.65	1.24	1.35	1.06	1.24	1.09	1.06	1.00	1.09	1.06	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
1: Fair Oaks Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases	3	8			4		1	6		5	2	
Permitted Phases	8			4								
Detector Phase	3	8		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	4.0	10.0		10.0	10.0		9.0	10.0		9.0	10.0	
Minimum Split (s)	8.5	28.5		27.0	27.0		13.5	25.0		13.5	25.0	
Total Split (s)	12.0	39.0		27.0	27.0		15.0	46.0		15.0	46.0	
Total Split (%)	12.0%	39.0%		27.0%	27.0%		15.0%	46.0%		15.0%	46.0%	
Maximum Green (s)	9.0	35.0		23.0	23.0		12.0	42.0		12.0	42.0	
Yellow Time (s)	3.0	3.5		3.5	3.5		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	0.5		0.5	0.5		0.0	0.0		0.0	0.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.5	3.0		3.0	3.0		1.5	4.0		1.5	4.0	
Minimum Gap (s)	2.5	3.0		3.0	3.0		1.5	3.0		1.5	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)		7.0		6.0	6.0			7.0			7.0	
Flash Dont Walk (s)		17.0		17.0	17.0			13.0			13.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	36.0	35.0		23.3	23.3		9.9	42.9		11.1	46.5	
Actuated g/C Ratio	0.36	0.35		0.23	0.23		0.10	0.43		0.11	0.46	
v/c Ratio	0.70	0.97		0.32	0.93		0.51	0.72		0.77	0.93	
Control Delay	45.0	69.7		39.4	66.0		64.5	22.6		70.6	38.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.6		0.0	0.0	
Total Delay	45.0	69.7		39.4	66.0		64.5	23.2		70.6	38.3	
LOS	D	E		D	E		E	C		E	D	
Approach Delay		63.9			63.1			26.3			41.2	
Approach LOS		E			E			C			D	
Queue Length 50th (ft)	56	250		25	226		52	298		88	453	
Queue Length 95th (ft)	#108	#418		62	#409		m107	368		#180	#657	
Internal Link Dist (ft)		347			354			295			275	
Turn Bay Length (ft)				75			150			150		
Base Capacity (vph)	185	430		146	411		198	1444		198	1555	
Starvation Cap Reductn	0	0		0	0		0	137		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.69	0.97		0.32	0.93		0.42	0.79		0.72	0.93	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow  
 Natural Cycle: 90

# Lanes, Volumes, Timings

## 1: Fair Oaks Ave & Mission St

12/28/2021

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 42.5 Intersection LOS: D

Intersection Capacity Utilization 89.9% ICU Level of Service E







Analysis Period (min) 15

# 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.

Splits and Phases: 1: Fair Oaks Ave & Mission St

 Ø1	 Ø2 (R)	 Ø3	 Ø4
15 s	46 s	12 s	27 s
 Ø5	 Ø6 (R)	 Ø8	
15 s	46 s	39 s	

Lanes, Volumes, Timings  
2: Fremont Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↖	↕	↖	↖	↕	↖
Traffic Volume (vph)	38	329	125	46	320	74	102	708	26	115	588	28
Future Volume (vph)	38	329	125	46	320	74	102	708	26	115	588	28
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	10	12	10	10	12	10	10	10	10	10	10
Storage Length (ft)	75		0	75		0	50		100	75		100
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.959			0.972				0.850			0.850
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1391	2458	0	1391	2491	0	1391	1464	1244	1391	1464	1244
Fl <sub>t</sub> Permitted	0.451			0.354			0.313			0.233		
Satd. Flow (perm)	660	2458	0	518	2491	0	458	1464	1244	341	1464	1244
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		90			46				27			31
Link Speed (mph)		30			30			30				30
Link Distance (ft)		613			414			375				744
Travel Time (s)		13.9			9.4			8.5				16.9
Peak Hour Factor	0.88	0.88	0.88	0.95	0.95	0.95	0.92	0.92	0.92	0.90	0.90	0.90
Bus Blockages (#/hr)	0	2	2	0	2	2	0	0	0	0	0	0
Parking (#/hr)		10	10		10	10						
Adj. Flow (vph)	43	374	142	48	337	78	111	770	28	128	653	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	516	0	48	415	0	111	770	28	128	653	31
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.35	1.50	1.24	1.35	1.50	1.24	1.35	1.35	1.35	1.35	1.35	1.35
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
2: Fremont Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	18.5	18.5		18.5	18.5		20.5	20.5	20.5	20.5	20.5	20.5
Total Split (s)	21.0	21.0		21.0	21.0		39.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	35.0%	35.0%		35.0%	35.0%		65.0%	65.0%	65.0%	65.0%	65.0%	65.0%
Maximum Green (s)	16.5	16.5		16.5	16.5		33.5	33.5	33.5	33.5	33.5	33.5
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5		4.5	4.5		5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		2.0	2.0		4.5	4.5	4.5	2.0	2.0	2.0
Minimum Gap (s)	3.0	3.0		2.0	2.0		3.5	3.5	3.5	2.0	2.0	2.0
Time Before Reduce (s)	1.5	1.5		0.0	0.0		2.0	2.0	2.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		8.0	8.0	8.0	8.0	8.0	8.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	15.0	15.0		15.0	15.0		35.0	35.0	35.0	35.0	35.0	35.0
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.58	0.58	0.58	0.58	0.58	0.58
v/c Ratio	0.26	0.76		0.37	0.63		0.42	0.90	0.04	0.65	0.77	0.04
Control Delay	21.9	24.6		27.1	22.1		4.9	15.7	0.3	29.7	18.3	2.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	1.4	0.0	0.0	1.1	0.0
Total Delay	21.9	24.7		27.1	22.1		4.9	17.1	0.3	29.7	19.4	2.8
LOS	C	C		C	C		A	B	A	C	B	A
Approach Delay		24.4			22.6			15.0			20.4	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	12	71		14	59		5	36	0	29	168	0
Queue Length 95th (ft)	35	116		42	100		m8	m#68	m0	#117	#368	9
Internal Link Dist (ft)		533			334			295			664	
Turn Bay Length (ft)	75			75			50		100	75		100
Base Capacity (vph)	181	741		142	718		266	853	736	198	853	738
Starvation Cap Reductn	0	0		0	0		0	20	0	0	0	0
Spillback Cap Reductn	0	1		0	0		0	0	0	0	61	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.70		0.34	0.58		0.42	0.92	0.04	0.65	0.82	0.04

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 9 (15%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 60

# Lanes, Volumes, Timings

## 2: Fremont Ave & Mission St

12/28/2021

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 19.8 Intersection LOS: B

Intersection Capacity Utilization 87.4% ICU Level of Service E

Analysis Period (min) 15

# 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.

Splits and Phases: 2: Fremont Ave & Mission St





Lanes, Volumes, Timings  
3: Meridian Ave & Mission St

12/28/2021



Lane Group	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR2	NET
Lane Configurations	↑↑			↑↑			↑			↑		↑
Traffic Volume (vph)	474	46	6	389	32	41	97	35	39	107	13	8
Future Volume (vph)	474	46	6	389	32	41	97	35	39	107	13	8
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	11	12	12	11	12	12	13	12	12	13	12	12
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.987			0.989			0.972			0.989		
Flt Protected				0.999			0.988			0.988		
Satd. Flow (prot)	2620	0	0	2633	0	0	1557	0	0	1584	0	1569
Flt Permitted				0.948			0.901			0.889		
Satd. Flow (perm)	2620	0	0	2499	0	0	1420	0	0	1425	0	1569
Right Turn on Red								No			No	
Satd. Flow (RTOR)												
Link Speed (mph)	30			30			25			25		30
Link Distance (ft)	408			294			373			340		356
Travel Time (s)	9.3			6.7			10.2			9.3		8.1
Peak Hour Factor	0.96	0.96	0.88	0.88	0.88	0.80	0.80	0.80	0.86	0.86	0.86	0.92
Bus Blockages (#/hr)	2	2	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)	10	10		10	10							
Adj. Flow (vph)	494	48	7	442	36	51	121	44	45	124	15	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	542	0	0	485	0	0	216	0	0	184	0	9
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left
Median Width(ft)	0			0			0			0		0
Link Offset(ft)	0			0			0			0		0
Crosswalk Width(ft)	16			16			16			16		16
Two way Left Turn Lane												
Headway Factor	1.43	1.24	1.24	1.43	1.24	1.24	1.19	1.24	1.24	1.19	1.24	1.24
Turning Speed (mph)		9	15		9	15		9	15		9	
Number of Detectors	2		1	2		1	2		1	2		2
Detector Template	Thru		Left	Thru		Left	Thru		Left	Thru		Thru
Leading Detector (ft)	100		20	100		20	100		20	100		100
Trailing Detector (ft)	0		0	0		0	0		0	0		0
Detector 1 Position(ft)	0		0	0		0	0		0	0		0
Detector 1 Size(ft)	6		20	6		20	6		20	6		6
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Detector 1 Queue (s)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Detector 1 Delay (s)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Detector 2 Position(ft)	94			94			94			94		94
Detector 2 Size(ft)	6			6			6			6		6
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		0.0
Turn Type	NA		Perm	NA		Perm	NA		Perm	NA		NA
Protected Phases	2			6			8			4		9
Permitted Phases			6			8			4			

Lanes, Volumes, Timings  
 3: Meridian Ave & Mission St

12/28/2021



Lane Group	SWT
Lane Configurations	↑
Traffic Volume (vph)	8
Future Volume (vph)	8
Ideal Flow (vphpl)	1600
Lane Width (ft)	12
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	1569
Flt Permitted	
Satd. Flow (perm)	1569
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	30
Link Distance (ft)	325
Travel Time (s)	7.4
Peak Hour Factor	0.92
Bus Blockages (#/hr)	0
Parking (#/hr)	
Adj. Flow (vph)	9
Shared Lane Traffic (%)	
Lane Group Flow (vph)	9
Enter Blocked Intersection	No
Lane Alignment	Left
Median Width(ft)	0
Link Offset(ft)	0
Crosswalk Width(ft)	16
Two way Left Turn Lane	
Headway Factor	1.24
Turning Speed (mph)	
Number of Detectors	2
Detector Template	Thru
Leading Detector (ft)	100
Trailing Detector (ft)	0
Detector 1 Position(ft)	0
Detector 1 Size(ft)	6
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	94
Detector 2 Size(ft)	6
Detector 2 Type	Cl+Ex
Detector 2 Channel	
Detector 2 Extend (s)	0.0
Turn Type	NA
Protected Phases	9
Permitted Phases	

Lanes, Volumes, Timings  
3: Meridian Ave & Mission St

12/28/2021



Lane Group	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR2	NET
Detector Phase	2		6	6		8	8		4	4		9
Switch Phase												
Minimum Initial (s)	24.0		24.0	24.0		5.0	5.0		5.0	5.0		40.5
Minimum Split (s)	28.7		28.7	28.7		28.5	28.5		28.5	28.5		45.0
Total Split (s)	35.2		35.2	35.2		39.8	39.8		35.2	35.2		45.0
Total Split (%)	29.3%		29.3%	29.3%		33.2%	33.2%		29.3%	29.3%		37.5%
Maximum Green (s)	30.5		30.5	30.5		35.6	35.6		31.0	31.0		40.5
Yellow Time (s)	3.2		3.2	3.2		3.2	3.2		3.2	3.2		3.5
All-Red Time (s)	1.5		1.5	1.5		1.0	1.0		1.0	1.0		1.0
Lost Time Adjust (s)	0.0			0.0			0.0			0.0		0.0
Total Lost Time (s)	4.7			4.7			4.2			4.2		4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0		1.0	1.0		3.5	3.5		3.5	3.5		3.0
Recall Mode	Min		Min	Min		None	None		None	None		None
Walk Time (s)	5.0		5.0	5.0		5.0	5.0		5.0	5.0		
Flash Dont Walk (s)	12.0		16.0	16.0		19.0	19.0		18.0	18.0		
Pedestrian Calls (#/hr)	0		0	0		0	0		0	0		
Act Effct Green (s)	30.9			30.9			17.9			17.9		49.7
Actuated g/C Ratio	0.43			0.43			0.25			0.25		0.70
v/c Ratio	0.48			0.45			0.61			0.51		0.01
Control Delay	25.2			24.9			36.3			33.5		20.0
Queue Delay	0.0			0.0			0.0			0.0		0.0
Total Delay	25.2			24.9			36.3			33.5		20.0
LOS	C			C			D			C		B
Approach Delay	25.2			24.9			36.3			33.5		20.0
Approach LOS	C			C			D			C		B
Queue Length 50th (ft)	40			35			48			39		0
Queue Length 95th (ft)	266			231			191			177		16
Internal Link Dist (ft)	328			214			293			260		276
Turn Bay Length (ft)												
Base Capacity (vph)	1378			1315			872			875		1096
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	0.39			0.37			0.25			0.21		0.01

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	71.2
Natural Cycle:	105
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.61
Intersection Signal Delay:	27.8
Intersection LOS:	C
Intersection Capacity Utilization:	79.8%
ICU Level of Service:	D
Analysis Period (min):	15

Lanes, Volumes, Timings  
 3: Meridian Ave & Mission St

12/28/2021

Splits and Phases: 3: Meridian Ave & Mission St



Lanes, Volumes, Timings  
 3: Meridian Ave & Mission St

12/28/2021



Lane Group	SWT
Detector Phase	9
Switch Phase	
Minimum Initial (s)	40.5
Minimum Split (s)	45.0
Total Split (s)	45.0
Total Split (%)	37.5%
Maximum Green (s)	40.5
Yellow Time (s)	3.5
All-Red Time (s)	1.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.5
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	49.7
Actuated g/C Ratio	0.70
v/c Ratio	0.01
Control Delay	20.0
Queue Delay	0.0
Total Delay	20.0
LOS	B
Approach Delay	20.0
Approach LOS	B
Queue Length 50th (ft)	0
Queue Length 95th (ft)	16
Internal Link Dist (ft)	245
Turn Bay Length (ft)	
Base Capacity (vph)	1096
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.01
<b>Intersection Summary</b>	

Lanes, Volumes, Timings  
4: Mission St & Orange Grove Ave

12/28/2021



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	213	350	346	120	147	211
Future Volume (vph)	213	350	346	120	147	211
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	11	12	11	11
Storage Length (ft)	40			0	100	100
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	0.91
Fr <sub>t</sub>			0.961		0.940	0.850
Fl <sub>t</sub> Protected	0.950				0.971	
Satd. Flow (prot)	1391	2654	2561	0	2685	1173
Fl <sub>t</sub> Permitted	0.458				0.971	
Satd. Flow (perm)	671	2654	2561	0	2685	1173
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			119		104	123
Link Speed (mph)		30	30		30	
Link Distance (ft)		161	588		432	
Travel Time (s)		3.7	13.4		9.8	
Peak Hour Factor	0.85	0.85	0.89	0.89	0.93	0.93
Bus Blockages (#/hr)	0	2	0	0	0	0
Parking (#/hr)		10	10	10		
Adj. Flow (vph)	251	412	389	135	158	227
Shared Lane Traffic (%)						46%
Lane Group Flow (vph)	251	412	524	0	262	123
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		22	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.35	1.43	1.43	1.24	1.30	1.30
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	6	6		20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			

Lanes, Volumes, Timings  
4: Mission St & Orange Grove Ave

12/28/2021



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Detector Phase	4	4	8		6	6
Switch Phase						
Minimum Initial (s)	30.0	30.0	30.0		4.0	4.0
Minimum Split (s)	35.0	35.0	36.0		24.0	24.0
Total Split (s)	36.0	36.0	36.0		24.0	24.0
Total Split (%)	60.0%	60.0%	60.0%		40.0%	40.0%
Maximum Green (s)	31.0	31.0	31.0		20.0	20.0
Yellow Time (s)	4.0	4.0	4.0		3.0	3.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Min	Min	Min		None	None
Walk Time (s)			20.0		8.0	8.0
Flash Dont Walk (s)			10.0		12.0	12.0
Pedestrian Calls (#/hr)			0		0	0
Act Effct Green (s)	30.3	30.3	30.3		8.2	8.2
Actuated g/C Ratio	0.64	0.64	0.64		0.17	0.17
v/c Ratio	0.59	0.24	0.31		0.48	0.40
Control Delay	13.4	4.5	3.8		13.8	8.7
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	13.4	4.5	3.8		13.8	8.7
LOS	B	A	A		B	A
Approach Delay		7.9	3.8		12.2	
Approach LOS		A	A		B	
Queue Length 50th (ft)	31	20	20		20	0
Queue Length 95th (ft)	99	39	44		46	36
Internal Link Dist (ft)		81	508		352	
Turn Bay Length (ft)	40				100	100
Base Capacity (vph)	438	1734	1715		1192	565
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	0.24	0.31		0.22	0.22

Intersection Summary

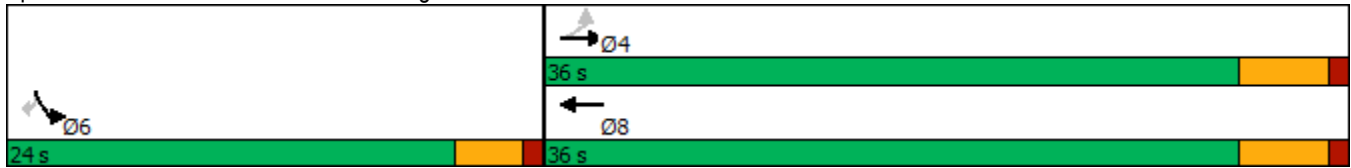
Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	47.5
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.59
Intersection Signal Delay:	7.6
Intersection Capacity Utilization:	69.3%
Intersection LOS:	A
ICU Level of Service:	C

Lanes, Volumes, Timings  
4: Mission St & Orange Grove Ave

12/28/2021

Analysis Period (min) 15

Splits and Phases: 4: Mission St & Orange Grove Ave





Lanes, Volumes, Timings  
5: Fair Oaks Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕↔		↕	↕↔	
Traffic Volume (vph)	43	38	98	17	29	24	61	998	24	18	1309	55
Future Volume (vph)	43	38	98	17	29	24	61	998	24	18	1309	55
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	11	12	10	11	12
Storage Length (ft)	0		0	0		0	75		0	75		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr <sub>t</sub>		0.926			0.953			0.996			0.994	
Fl <sub>t</sub> Protected		0.988			0.988		0.950			0.950		
Satd. Flow (prot)	0	1387	0	0	1428	0	1652	3408	0	1652	3401	0
Fl <sub>t</sub> Permitted		0.914			0.865		0.122			0.235		
Satd. Flow (perm)	0	1283	0	0	1250	0	212	3408	0	409	3401	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		58			25			4			7	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		420			404			386			375	
Travel Time (s)		11.5			11.0			8.8			8.5	
Peak Hour Factor	0.88	0.88	0.88	0.80	0.80	0.80	0.96	0.96	0.96	0.94	0.94	0.94
Adj. Flow (vph)	49	43	111	21	36	30	64	1040	25	19	1393	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	203	0	0	87	0	64	1065	0	19	1452	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.30	1.24	1.24	1.30	1.24	1.09	1.04	1.00	1.09	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		1	6		5	2	

Lanes, Volumes, Timings  
5: Fair Oaks Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		4.0	10.0		4.0	10.0	
Minimum Split (s)	27.0	27.0		27.0	27.0		7.0	34.0		8.0	34.0	
Total Split (s)	29.0	29.0		29.0	29.0		9.0	63.0		8.0	62.0	
Total Split (%)	29.0%	29.0%		29.0%	29.0%		9.0%	63.0%		8.0%	62.0%	
Maximum Green (s)	24.5	24.5		24.5	24.5		6.0	59.0		4.0	58.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.0	0.0		1.0	0.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		3.0	4.0		4.0	4.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	2.0		2.5	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)	7.0	7.0		6.0	6.0			9.0			9.0	
Flash Dont Walk (s)	15.5	15.5		16.5	16.5			21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		17.2			17.2		74.4	70.8		71.1	67.1	
Actuated g/C Ratio		0.17			0.17		0.74	0.71		0.71	0.67	
v/c Ratio		0.76			0.37		0.27	0.44		0.05	0.64	
Control Delay		45.1			29.5		7.0	8.3		4.1	10.6	
Queue Delay		0.1			0.0		0.0	0.1		0.0	0.8	
Total Delay		45.1			29.5		7.0	8.4		4.1	11.4	
LOS		D			C		A	A		A	B	
Approach Delay		45.1			29.5			8.3			11.3	
Approach LOS		D			C			A			B	
Queue Length 50th (ft)		89			35		9	110		5	227	
Queue Length 95th (ft)		152			63		25	251		m2	m91	
Internal Link Dist (ft)		340			324			306			295	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)		358			325		245	2415		352	2285	
Starvation Cap Reductn		0			0		0	0		0	478	
Spillback Cap Reductn		4			1		0	275		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.57			0.27		0.26	0.50		0.05	0.80	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 6 (6%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.76

Lanes, Volumes, Timings  
 5: Fair Oaks Ave & El Centro St

12/28/2021

Intersection Signal Delay: 13.1	Intersection LOS: B
Intersection Capacity Utilization 68.1%	ICU Level of Service C
Analysis Period (min) 15	

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

Splits and Phases: 5: Fair Oaks Ave & El Centro St

 Ø1	 Ø2 (R)	 Ø4
9 s	62 s	29 s
 Ø5	 Ø6 (R)	 Ø8
8 s	63 s	29 s

Lanes, Volumes, Timings  
6: Fremont Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Volume (vph)	33	90	58	31	64	37	24	766	25	24	713	22
Future Volume (vph)	33	90	58	31	64	37	24	766	25	24	713	22
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	10	12	12	10	12	12
Storage Length (ft)	0		0	0		0	75		0	75		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.957			0.962			0.995			0.995	
Fl <sub>t</sub> Protected		0.991			0.988		0.950			0.950		
Satd. Flow (prot)	0	1537	0	0	1541	0	1391	1561	0	1391	1561	0
Fl <sub>t</sub> Permitted		0.927			0.890		0.253			0.183		
Satd. Flow (perm)	0	1438	0	0	1388	0	370	1561	0	268	1561	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		40			32			4			4	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		632			417			438			375	
Travel Time (s)		17.2			11.4			10.0			8.5	
Peak Hour Factor	0.84	0.84	0.84	0.82	0.82	0.82	0.91	0.91	0.91	0.97	0.97	0.97
Adj. Flow (vph)	39	107	69	38	78	45	26	842	27	25	735	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	215	0	0	161	0	26	869	0	25	758	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.35	1.24	1.24	1.35	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	

Lanes, Volumes, Timings  
6: Fremont Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	22.0	22.0		22.0	22.0		38.0	38.0		38.0	38.0	
Total Split (%)	36.7%	36.7%		36.7%	36.7%		63.3%	63.3%		63.3%	63.3%	
Maximum Green (s)	17.0	17.0		17.0	17.0		33.0	33.0		33.0	33.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.5	4.5		4.5	4.5		4.0	4.0		4.0	4.0	
Minimum Gap (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	1.5	1.5		1.5	1.5		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		C-Min	C-Min		C-Min	C-Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		13.5			13.5		36.5	36.5		36.5	36.5	
Actuated g/C Ratio		0.22			0.22		0.61	0.61		0.61	0.61	
v/c Ratio		0.61			0.48		0.12	0.91		0.15	0.80	
Control Delay		23.6			19.9		8.0	30.0		9.4	15.6	
Queue Delay		0.0			0.0		0.0	7.5		0.0	0.6	
Total Delay		23.6			19.9		8.0	37.5		9.4	16.2	
LOS		C			B		A	D		A	B	
Approach Delay		23.6			19.9			36.6			16.0	
Approach LOS		C			B			D			B	
Queue Length 50th (ft)		55			40		4	244		3	135	
Queue Length 95th (ft)		98			72		15	#544		m6	m#430	
Internal Link Dist (ft)		552			337			358			295	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)		436			416		224	950		162	950	
Starvation Cap Reductn		0			0		0	0		0	37	
Spillback Cap Reductn		1			1		0	65		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.49			0.39		0.12	0.98		0.15	0.83	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 36 (60%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.91



Lanes, Volumes, Timings  
7: Meridian Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	10	93	72	36	85	51	47	112	47	13	138	8
Future Volume (vph)	10	93	72	36	85	51	47	112	47	13	138	8
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	12	13	12	12	13	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.945			0.960			0.969			0.993	
Flt Protected		0.997			0.990			0.989			0.996	
Satd. Flow (prot)	0	1527	0	0	1541	0	0	1553	0	0	1603	0
Flt Permitted		0.997			0.990			0.989			0.996	
Satd. Flow (perm)	0	1527	0	0	1541	0	0	1553	0	0	1603	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1194			309			450			373	
Travel Time (s)		32.6			8.4			12.3			10.2	
Peak Hour Factor	0.80	0.80	0.80	0.87	0.87	0.87	0.80	0.80	0.80	0.85	0.85	0.85
Adj. Flow (vph)	13	116	90	41	98	59	59	140	59	15	162	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	219	0	0	198	0	0	258	0	0	186	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	58.5%
ICU Level of Service	B
Analysis Period (min)	15

Lanes, Volumes, Timings  
8: orange Grove Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	↕
Traffic Volume (vph)	16	123	7	9	75	56	13	52	7	45	37	12
Future Volume (vph)	16	123	7	9	75	56	13	52	7	45	37	12
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	12	13	12	13	13	12
Storage Length (ft)	0		0	0		0	0		0	0		75
Storage Lanes	0		0	0		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.993			0.946			0.986			0.963	
Fl <sub>t</sub> Protected		0.995			0.997			0.991		0.950		
Satd. Flow (prot)	0	1602	0	0	1529	0	0	1584	0	1540	1561	0
Fl <sub>t</sub> Permitted		0.995			0.997			0.991		0.950		
Satd. Flow (perm)	0	1602	0	0	1529	0	0	1584	0	1540	1561	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		426			1194			450			376	
Travel Time (s)		11.6			32.6			12.3			10.3	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.82	0.82	0.82	0.92	0.92	0.92
Adj. Flow (vph)	20	154	9	11	94	70	16	63	9	49	40	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	183	0	0	175	0	0	88	0	49	53	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.19	1.24	1.19	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	32.0%
ICU Level of Service	A
Analysis Period (min)	15



Lanes, Volumes, Timings  
9: Pasadena Ave & El Centro St

12/28/2021

























Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑	↗	↘	↑	
Traffic Volume (vph)	0	0	0	36	0	38	0	84	29	25	69	1
Future Volume (vph)	0	0	0	36	0	38	0	84	29	25	69	1
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	12	14	12	14	12	11	14	12	11	12
Storage Length (ft)	0		0	0		0	0		75	100		0
Storage Lanes	0		0	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.930				0.850		0.998	
Fl <sub>t</sub> Protected					0.976					0.950		
Satd. Flow (prot)	0	1569	0	0	1424	0	0	1516	1411	1490	1513	0
Fl <sub>t</sub> Permitted					0.976					0.950		
Satd. Flow (perm)	0	1569	0	0	1424	0	0	1516	1411	1490	1513	0
Link Speed (mph)		30			25			30			30	
Link Distance (ft)		367			417			410			724	
Travel Time (s)		8.3			11.4			9.3			16.5	
Peak Hour Factor	0.25	0.25	0.25	0.89	0.89	0.89	0.88	0.88	0.88	0.80	0.80	0.80
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	0
Adj. Flow (vph)	0	0	0	40	0	43	0	95	33	31	86	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	83	0	0	95	33	31	87	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.24	1.24	1.24	1.15	1.24	1.15	1.24	1.30	1.16	1.24	1.30	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	20.1%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
11: Fremont Ave & Monterey Rd

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	596	177	49	618	36	161	716	32	67	682	49
Future Volume (vph)	68	596	177	49	618	36	161	716	32	67	682	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	12	12	10	12	12	10	10	16	10	10	16
Storage Length (ft)	150		0	125		0	100		50	100		40
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25		25			
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.966			0.992				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	3419	0	1652	3511	0	1391	1464	1511	1391	1464	1511
Flt Permitted	0.258			0.222			0.237			0.182		
Satd. Flow (perm)	449	3419	0	386	3511	0	347	1464	1511	266	1464	1511
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		66			10				36			36
Link Speed (mph)		35			35			30				30
Link Distance (ft)		666			643			396				474
Travel Time (s)		13.0			12.5			9.0				10.8
Peak Hour Factor	0.87	0.87	0.87	0.93	0.93	0.93	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	78	685	203	53	665	39	175	778	35	69	703	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	78	888	0	53	704	0	175	778	35	69	703	51
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.09	1.00	1.00	1.09	1.00	1.00	1.35	1.35	1.06	1.35	1.35	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			4			2				2

Lanes, Volumes, Timings  
 11: Fremont Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			4			2		2	2		2
Detector Phase	4	4		4	4		2	2	2	2	2	2
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	23.0	23.0		23.0	23.0		37.0	37.0	37.0	37.0	37.0	37.0
Total Split (%)	38.3%	38.3%		38.3%	38.3%		61.7%	61.7%	61.7%	61.7%	61.7%	61.7%
Maximum Green (s)	18.0	18.0		18.0	18.0		32.0	32.0	32.0	32.0	32.0	32.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.5	4.5		4.5	4.5		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Gap (s)	3.5	3.5		3.5	3.5		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	1.5	1.5		1.5	1.5		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	18.0	18.0		18.0	18.0		32.0	32.0	32.0	32.0	32.0	32.0
Actuated g/C Ratio	0.30	0.30		0.30	0.30		0.53	0.53	0.53	0.53	0.53	0.53
v/c Ratio	0.58	0.83		0.46	0.66		0.95	1.00	0.04	0.49	0.90	0.06
Control Delay	39.7	26.7		33.2	21.7		75.0	49.3	2.8	24.3	31.0	3.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.7	26.7		33.2	21.7		75.0	49.3	2.8	24.3	31.0	3.8
LOS	D	C		C	C		E	D	A	C	C	A
Approach Delay		27.7			22.5			52.2				28.8
Approach LOS		C			C			D				C
Queue Length 50th (ft)	24	144		15	113		54	254	0	14	207	2
Queue Length 95th (ft)	#77	#210		#57	166		#169	#490	10	#68	#426	15
Internal Link Dist (ft)		586			563			316				394
Turn Bay Length (ft)	150			125			100		50	100		40
Base Capacity (vph)	134	1071		115	1060		185	780	822	141	780	822
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.83		0.46	0.66		0.95	1.00	0.04	0.49	0.90	0.06

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 36 (60%), Referenced to phase 2:NBSB and 6:, Start of Yellow  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.00

Lanes, Volumes, Timings  
11: Fremont Ave & Monterey Rd

12/28/2021

Intersection Signal Delay: 33.7	Intersection LOS: C
Intersection Capacity Utilization 95.3%	ICU Level of Service F
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 11: Fremont Ave & Monterey Rd



Lanes, Volumes, Timings  
12: Meridian Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	775	194	45	830	23	239	146	52	31	193	14
Future Volume (vph)	23	775	194	45	830	23	239	146	52	31	193	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	12	10	11	12	12	13	12	12	13	12
Storage Length (ft)	225		0	175		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.970			0.996			0.984			0.992	
Fl <sub>t</sub> Protected	0.950			0.950				0.973			0.994	
Satd. Flow (prot)	1652	3319	0	1652	3408	0	0	1552	0	0	1598	0
Fl <sub>t</sub> Permitted	0.230			0.185				0.651			0.919	
Satd. Flow (perm)	400	3319	0	322	3408	0	0	1038	0	0	1478	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		63			6			13			6	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1211			592			371			479	
Travel Time (s)		23.6			11.5			10.1			13.1	
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.87	0.87	0.87	0.85	0.85	0.85
Adj. Flow (vph)	24	824	206	48	892	25	275	168	60	36	227	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	1030	0	48	917	0	0	503	0	0	279	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.00	1.09	1.04	1.00	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	

Lanes, Volumes, Timings  
 12: Meridian Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	30.0	30.0		30.0	30.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	35.0	35.0		35.0	35.0		24.0	24.0		24.0	24.0	
Total Split (s)	35.0	35.0		35.0	35.0		30.0	30.0		30.0	30.0	
Total Split (%)	53.8%	53.8%		53.8%	53.8%		46.2%	46.2%		46.2%	46.2%	
Maximum Green (s)	30.0	30.0		30.0	30.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	30.0	30.0		30.0	30.0			26.0			26.0	
Actuated g/C Ratio	0.46	0.46		0.46	0.46			0.40			0.40	
v/c Ratio	0.13	0.66		0.32	0.58			1.19			0.47	
Control Delay	12.3	15.1		18.6	14.7			129.4			17.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	12.3	15.1		18.6	14.7			129.4			17.3	
LOS	B	B		B	B			F			B	
Approach Delay		15.1			14.8			129.4			17.3	
Approach LOS		B			B			F			B	
Queue Length 50th (ft)	5	146		11	132			~246			77	
Queue Length 95th (ft)	19	208		39	185			#398			128	
Internal Link Dist (ft)		1131			512			291			399	
Turn Bay Length (ft)	225			175								
Base Capacity (vph)	184	1565		148	1576			423			594	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.13	0.66		0.32	0.58			1.19			0.47	

Intersection Summary

Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	65
Natural Cycle:	75
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.19
Intersection Signal Delay:	35.8
Intersection LOS:	D
Intersection Capacity Utilization:	91.9%
ICU Level of Service:	F
Analysis Period (min):	15

~ Volume exceeds capacity, queue is theoretically infinite.

Lanes, Volumes, Timings  
12: Meridian Ave & Monterey Rd

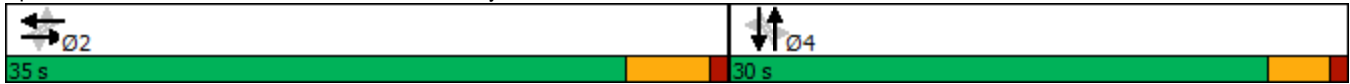
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Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 12: Meridian Ave & Monterey Rd



Lanes, Volumes, Timings  
 13: Orange Grove Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	911	1	12	975	96	1	0	12	69	5	9
Future Volume (vph)	15	911	1	12	975	96	1	0	12	69	5	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	12	10	11	12	12	13	12	12	13	12
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.987			0.873				0.985
Fl <sub>t</sub> Protected	0.950			0.950				0.997				0.960
Satd. Flow (prot)	1652	3421	0	1652	3377	0	0	1411	0	0	1533	0
Fl <sub>t</sub> Permitted	0.220			0.254				0.997				0.960
Satd. Flow (perm)	382	3421	0	442	3377	0	0	1411	0	0	1533	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					11			79				7
Link Speed (mph)		35			35			25				25
Link Distance (ft)		429			1211			316				446
Travel Time (s)		8.4			23.6			8.6				12.2
Peak Hour Factor	0.89	0.89	0.89	0.94	0.94	0.94	0.80	0.80	0.80	0.90	0.90	0.90
Adj. Flow (vph)	17	1024	1	13	1037	102	1	0	15	77	6	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	1025	0	13	1139	0	0	16	0	0	93	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.00	1.09	1.04	1.00	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases		2			6		3	3		4	4	



Lanes, Volumes, Timings  
 13: Orange Grove Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2				6							
Detector Phase	2	2			6	6	3	3			4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0	5.0	5.0	5.0			5.0	5.0
Minimum Split (s)	24.0	24.0			24.0	24.0	31.5	31.5			31.5	31.5
Total Split (s)	26.0	26.0			26.0	26.0	32.0	32.0			32.0	32.0
Total Split (%)	28.9%	28.9%			28.9%	28.9%	35.6%	35.6%			35.6%	35.6%
Maximum Green (s)	21.0	21.0			21.0	21.0	27.5	27.5			27.5	27.5
Yellow Time (s)	4.0	4.0			4.0	4.0	3.5	3.5			3.5	3.5
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0			1.0	1.0
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0				0.0	
Total Lost Time (s)	5.0	5.0			5.0	5.0	4.5				4.5	
Lead/Lag							Lead	Lead			Lag	Lag
Lead-Lag Optimize?							Yes	Yes			Yes	Yes
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode	C-Min	C-Min			C-Min	C-Min	None	None			None	None
Walk Time (s)	7.0	7.0			7.0	7.0	7.0	7.0			7.0	7.0
Flash Dont Walk (s)	12.0	12.0			12.0	12.0	20.0	20.0			20.0	20.0
Pedestrian Calls (#/hr)	0	0			0	0	0	0			0	0
Act Effct Green (s)	69.1	69.1			69.1	69.1	5.5				10.4	
Actuated g/C Ratio	0.77	0.77			0.77	0.77	0.06				0.12	
v/c Ratio	0.06	0.39			0.04	0.44	0.10				0.51	
Control Delay	6.5	6.0			6.2	6.4	1.2				43.2	
Queue Delay	0.0	0.0			0.0	0.0	0.0				0.0	
Total Delay	6.5	6.0			6.2	6.4	1.2				43.2	
LOS	A	A			A	A	A				D	
Approach Delay	6.0				6.4		1.2				43.2	
Approach LOS	A				A		A				D	
Queue Length 50th (ft)	2	74			1	86	0				47	
Queue Length 95th (ft)	12	195			10	230	0				90	
Internal Link Dist (ft)	349				1131		236				366	
Turn Bay Length (ft)	75				75							
Base Capacity (vph)	293	2628			339	2596	486				473	
Starvation Cap Reductn	0	0			0	0	0				0	
Spillback Cap Reductn	0	0			0	0	0				0	
Storage Cap Reductn	0	0			0	0	0				0	
Reduced v/c Ratio	0.06	0.39			0.04	0.44	0.03				0.20	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow  
 Natural Cycle: 100  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.51  
 Intersection Signal Delay: 7.7  
 Intersection Capacity Utilization 50.1%  
 Analysis Period (min) 15  
 Intersection LOS: A  
 ICU Level of Service A

Lanes, Volumes, Timings  
 13: Orange Grove Ave & Monterey Rd

12/28/2021

Splits and Phases: 13: Orange Grove Ave & Monterey Rd

 Ø2 (R)	 Ø3	 Ø4
26 s	32 s	32 s
 Ø5 (R)		
26 s		

Lanes, Volumes, Timings  
16: Meridian Ave & Hope St

12/28/2021



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	10	70	116	13	52	149
Future Volume (vph)	10	70	116	13	52	149
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	13	12	12	13
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.882		0.986			
Flt Protected	0.994					0.987
Satd. Flow (prot)	1375	0	1598	0	0	1600
Flt Permitted	0.994					0.987
Satd. Flow (perm)	1375	0	1598	0	0	1600
Link Speed (mph)	25		25			25
Link Distance (ft)	299		340			399
Travel Time (s)	8.2		9.3			10.9
Peak Hour Factor	0.83	0.83	0.82	0.82	0.93	0.93
Adj. Flow (vph)	12	84	141	16	56	160
Shared Lane Traffic (%)						
Lane Group Flow (vph)	96	0	157	0	0	216
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.24	1.24	1.19	1.24	1.24	1.19
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	36.7%
	ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings  
17: Fremont Ave & Grevelia St

12/28/2021



Lane Group	EBL2	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR2
Lane Configurations												
Traffic Volume (vph)	5	10	23	1	6	10	6	765	8	3	675	7
Future Volume (vph)	5	10	23	1	6	10	6	765	8	3	675	7
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	12	12	12	12	12	14	12	12	14	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.918			0.920			0.999			0.999	
Flt Protected		0.994			0.998							
Satd. Flow (prot)	0	1431	0	0	1440	0	0	1672	0	0	1672	0
Flt Permitted		0.953			0.983			0.996			0.998	
Satd. Flow (perm)	0	1372	0	0	1419	0	0	1665	0	0	1668	0
Right Turn on Red									Yes			Yes
Satd. Flow (RTOR)								62			62	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		1201			446			255			617	
Travel Time (s)		32.8			12.2			5.8			14.0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.94	0.94	0.94	0.96	0.96	0.96
Adj. Flow (vph)	6	13	29	1	8	13	6	814	9	3	703	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	48	0	0	22	0	0	829	0	0	713	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.15	1.24	1.24	1.15	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												

Lanes, Volumes, Timings  
17: Fremont Ave & Grevelia St

12/28/2021



Lane Group	NET	SWT
Lane Configurations	↑	↑
Traffic Volume (vph)	8	8
Future Volume (vph)	8	8
Ideal Flow (vphpl)	1600	1600
Lane Width (ft)	12	12
Lane Util. Factor	1.00	1.00
Frt		
Flt Protected		
Satd. Flow (prot)	1569	1569
Flt Permitted		
Satd. Flow (perm)	1569	1569
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)	30	30
Link Distance (ft)	309	405
Travel Time (s)	7.0	9.2
Peak Hour Factor	0.92	0.92
Adj. Flow (vph)	9	9
Shared Lane Traffic (%)		
Lane Group Flow (vph)	9	9
Enter Blocked Intersection	No	No
Lane Alignment	Left	Left
Median Width(ft)	0	0
Link Offset(ft)	0	0
Crosswalk Width(ft)	16	16
Two way Left Turn Lane		
Headway Factor	1.24	1.24
Turning Speed (mph)		
Number of Detectors	2	2
Detector Template	Thru	Thru
Leading Detector (ft)	100	100
Trailing Detector (ft)	0	0
Detector 1 Position(ft)	0	0
Detector 1 Size(ft)	6	6
Detector 1 Type	Cl+Ex	Cl+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(ft)	94	94
Detector 2 Size(ft)	6	6
Detector 2 Type	Cl+Ex	Cl+Ex
Detector 2 Channel		
Detector 2 Extend (s)	0.0	0.0
Turn Type	NA	NA
Protected Phases	9	9
Permitted Phases		
Detector Phase	9	9
Switch Phase		

Lanes, Volumes, Timings  
17: Fremont Ave & Grevelia St

12/28/2021



Lane Group	EBL2	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR2
Minimum Initial (s)	10.0	10.0		6.0	6.0		40.0	40.0		40.0	40.0	
Minimum Split (s)	20.0	20.0		11.0	11.0		45.0	45.0		45.0	45.0	
Total Split (s)	25.0	25.0		25.0	25.0		45.0	45.0		45.0	45.0	
Total Split (%)	21.7%	21.7%		21.7%	21.7%		39.1%	39.1%		39.1%	39.1%	
Maximum Green (s)	20.0	20.0		20.0	20.0		40.0	40.0		40.0	40.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.5	3.5		3.5	3.5		0.2	0.2		0.2	0.2	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0								7.0	7.0	
Flash Dont Walk (s)	8.0	8.0								8.0	8.0	
Pedestrian Calls (#/hr)	0	0								0	0	
Act Effct Green (s)		11.2			9.4			51.6			51.6	
Actuated g/C Ratio		0.16			0.13			0.74			0.74	
v/c Ratio		0.22			0.12			0.67			0.57	
Control Delay		33.3			32.7			16.4			14.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		33.3			32.7			16.4			14.6	
LOS		C			C			B			B	
Approach Delay		33.3			32.7			16.4			14.6	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)		15			7			144			107	
Queue Length 95th (ft)		60			34			#944			#761	
Internal Link Dist (ft)		1121			366			175			537	
Turn Bay Length (ft)												
Base Capacity (vph)		415			429			1246			1248	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.12			0.05			0.67			0.57	






Intersection Summary

Area Type: Other  
 Cycle Length: 115  
 Actuated Cycle Length: 69.8  
 Natural Cycle: 130  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.67  
 Intersection Signal Delay: 16.3      Intersection LOS: B  
 Intersection Capacity Utilization 107.6%      ICU Level of Service G  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Lanes, Volumes, Timings  
 17: Fremont Ave & Grevelia St

12/28/2021

Splits and Phases: 17: Fremont Ave & Grevelia St

 Ø2	 Ø4	 Ø9
45 s	25 s	45 s
 Ø6	 Ø8	
45 s	25 s	

Lanes, Volumes, Timings  
 17: Fremont Ave & Grevelia St

12/28/2021





















Lane Group	NET	SWT
Minimum Initial (s)	40.5	40.5
Minimum Split (s)	45.0	45.0
Total Split (s)	45.0	45.0
Total Split (%)	39.1%	39.1%
Maximum Green (s)	40.5	40.5
Yellow Time (s)	3.5	3.5
All-Red Time (s)	1.0	1.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	4.5	4.5
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)	42.8	42.8
Actuated g/C Ratio	0.61	0.61
v/c Ratio	0.01	0.01
Control Delay	12.6	12.6
Queue Delay	0.0	0.0
Total Delay	12.6	12.6
LOS	B	B
Approach Delay	12.6	12.6
Approach LOS	B	B
Queue Length 50th (ft)	1	1
Queue Length 95th (ft)	15	15
Internal Link Dist (ft)	229	325
Turn Bay Length (ft)		
Base Capacity (vph)	961	961
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.01	0.01
<b>Intersection Summary</b>		



















Lanes, Volumes, Timings  
18: Meridian Ave & Grevelia St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	17	13	2	14	3	21	124	14	7	155	1
Future Volume (vph)	1	17	13	2	14	3	21	124	14	7	155	1
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	12	10	10	12	10	10
Storage Length (ft)	0		0	0		0	0		100	0		100
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.943			0.978				0.850			0.850
Flt Protected		0.999			0.994			0.993			0.998	
Satd. Flow (prot)	0	1527	0	0	1576	0	0	1454	1244	0	1461	1244
Flt Permitted		0.999			0.994			0.993			0.998	
Satd. Flow (perm)	0	1527	0	0	1576	0	0	1454	1244	0	1461	1244
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		441			1201			251			624	
Travel Time (s)		12.0			32.8			6.8			17.0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.93	0.93	0.93	0.83	0.83	0.83
Adj. Flow (vph)	1	21	16	3	18	4	23	133	15	8	187	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	38	0	0	25	0	0	156	15	0	195	1
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.35	1.35	1.24	1.35	1.35
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	32.6%						ICU Level of Service A					
Analysis Period (min)	15											

Lanes, Volumes, Timings  
19: Diamond Ave & Mission St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	515	33	23	411	6	16	1	25	0	0	0
Future Volume (vph)	0	515	33	23	411	6	16	1	25	0	0	0
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	11	12	12	11	12	10	12	12	12	12	12
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.998			0.920				
Flt Protected					0.997			0.981				
Satd. Flow (prot)	0	2641	0	0	2652	0	0	1416	0	0	1569	0
Flt Permitted					0.997			0.981				
Satd. Flow (perm)	0	2641	0	0	2652	0	0	1416	0	0	1569	0
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		294			324			374			223	
Travel Time (s)		6.7			7.4			10.2			5.1	
Peak Hour Factor	0.96	0.96	0.96	0.95	0.95	0.95	0.80	0.80	0.80	0.25	0.25	0.25
Parking (#/hr)		10	10		10	10						
Adj. Flow (vph)	0	536	34	24	433	6	20	1	31	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	570	0	0	463	0	0	52	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.43	1.24	1.24	1.43	1.24	1.35	1.24	1.24	1.24	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	44.1%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings  
20: Fairview Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔	
Traffic Volume (vph)	20	468	52	33	386	31	7	2	14	10	8	47
Future Volume (vph)	20	468	52	33	386	31	7	2	14	10	8	47
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	11	12	12	11	12	12	12	12	12	12	12
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985			0.990			0.915			0.902	
Flt Protected		0.998			0.996			0.985			0.993	
Satd. Flow (prot)	0	2620	0	0	2628	0	0	1414	0	0	1405	0
Flt Permitted		0.998			0.996			0.985			0.993	
Satd. Flow (perm)	0	2620	0	0	2628	0	0	1414	0	0	1405	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		324			613			381			228	
Travel Time (s)		7.4			13.9			10.4			6.2	
Peak Hour Factor	0.90	0.90	0.90	0.86	0.86	0.86	0.83	0.83	0.83	0.89	0.89	0.89
Parking (#/hr)		10	10		10	10						
Adj. Flow (vph)	22	520	58	38	449	36	8	2	17	11	9	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	600	0	0	523	0	0	27	0	0	73	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.43	1.24	1.24	1.43	1.24	1.24	1.24	1.24	1.24	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	48.2%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings  
21: Pasadena Ave & Mission St

12/28/2021



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	263	29	66	263	46	76
Future Volume (vph)	263	29	66	263	46	76
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	13	13	12	12	11	14
Storage Length (ft)		0	0		100	100
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1621	1378	1490	1569	1441	2493
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1621	1378	1490	1569	1441	2493
Link Speed (mph)	30			30	30	
Link Distance (ft)	267			367	724	
Travel Time (s)	6.1			8.3	16.5	
Peak Hour Factor	0.80	0.80	0.89	0.89	0.91	0.91
Bus Blockages (#/hr)	0	0	0	0	0	2
Adj. Flow (vph)	329	36	74	296	51	84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	329	36	74	296	51	84
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane					Yes	
Headway Factor	1.19	1.19	1.24	1.24	1.30	1.15
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Free	Free	

Intersection Summary

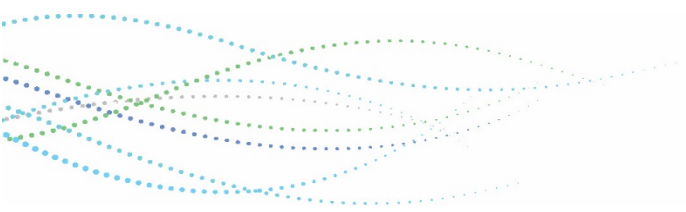
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	34.1%
ICU Level of Service	A
Analysis Period (min)	15



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## APPENDIX A: SYNCHRO OUTPUT SHEETS

### SCENARIO 1: AM PEAK HOUR



Lanes, Volumes, Timings  
1: Fair Oaks Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	171	99	32	229	150	84	1083	20	84	873	61
Future Volume (vph)	79	171	99	32	229	150	84	1083	20	84	873	61
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	10	16	12	10	11	12	10	11	12
Storage Length (ft)	0		0	75		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.945			0.941			0.997			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1391	1176	0	1391	1673	0	1652	3377	0	1652	3340	0
Flt Permitted	0.146			0.567			0.950			0.950		
Satd. Flow (perm)	214	1176	0	830	1673	0	1652	3377	0	1652	3340	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33			32			2			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		427			434			375			355	
Travel Time (s)		9.7			9.9			8.5			8.1	
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.87	0.87	0.87	0.95	0.95	0.95
Bus Blockages (#/hr)	0	0	0	0	0	0	0	5	0	0	7	0
Parking (#/hr)		10	10									
Adj. Flow (vph)	86	186	108	34	241	158	97	1245	23	88	919	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	86	294	0	34	399	0	97	1268	0	88	983	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.35	1.65	1.24	1.35	1.06	1.24	1.09	1.06	1.00	1.09	1.06	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
1: Fair Oaks Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases	3	8			4		1	6		5	2	
Permitted Phases	8			4								
Detector Phase	3	8		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	4.0	10.0		10.0	10.0		9.0	10.0		9.0	10.0	
Minimum Split (s)	9.5	28.5		27.0	27.0		13.5	25.0		13.5	25.0	
Total Split (s)	9.8	40.8		31.0	31.0		15.8	45.4		13.8	43.4	
Total Split (%)	9.8%	40.8%		31.0%	31.0%		15.8%	45.4%		13.8%	43.4%	
Maximum Green (s)	6.8	36.8		27.0	27.0		12.8	41.4		10.8	39.4	
Yellow Time (s)	3.0	3.5		3.5	3.5		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	0.5		0.5	0.5		0.0	0.0		0.0	0.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.5	3.0		3.0	3.0		1.5	4.0		1.5	4.0	
Minimum Gap (s)	2.5	3.0		3.0	3.0		1.5	3.0		1.5	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)		7.0		6.0	6.0			7.0			7.0	
Flash Dont Walk (s)		17.0		17.0	17.0			13.0			13.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	33.9	32.9		25.1	25.1		10.4	48.7		9.8	48.0	
Actuated g/C Ratio	0.34	0.33		0.25	0.25		0.10	0.49		0.10	0.48	
v/c Ratio	0.58	0.72		0.16	0.90		0.56	0.77		0.55	0.61	
Control Delay	37.3	35.9		30.4	57.7		58.4	24.1		56.2	23.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.3		0.0	0.0	
Total Delay	37.3	35.9		30.4	57.7		58.4	24.3		56.2	23.6	
LOS	D	D		C	E		E	C		E	C	
Approach Delay		36.2			55.6			26.8			26.2	
Approach LOS		D			E			C			C	
Queue Length 50th (ft)	36	137		17	222		60	380		55	260	
Queue Length 95th (ft)	71	234		43	#384		116	#474		105	353	
Internal Link Dist (ft)		347			354			295			275	
Turn Bay Length (ft)				75			150			150		
Base Capacity (vph)	152	453		224	475		211	1646		178	1608	
Starvation Cap Reductn	0	0		0	0		0	62		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.57	0.65		0.15	0.84		0.46	0.80		0.49	0.61	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow  
 Natural Cycle: 90

Lanes, Volumes, Timings  
 1: Fair Oaks Ave & Mission St

12/28/2021

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 31.5 Intersection LOS: C








Intersection Capacity Utilization 81.8% ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Fair Oaks Ave & Mission St

 Ø1	 Ø2 (R)	 Ø3	 Ø4
15.8 s	43.4 s	9.8 s	31 s
 Ø5	 Ø6 (R)	 Ø8	
13.8 s	45.4 s	40.8 s	



Lanes, Volumes, Timings  
2: Fremont Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	243	97	36	273	66	99	744	32	86	586	26
Future Volume (vph)	44	243	97	36	273	66	99	744	32	86	586	26
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	10	12	10	10	12	10	10	10	10	10	10
Storage Length (ft)	75		0	75		0	50		100	75		100
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.957			0.971				0.850			0.850
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1391	2453	0	1391	2488	0	1391	1464	1244	1391	1464	1244
Fl <sub>t</sub> Permitted	0.414			0.453			0.333			0.238		
Satd. Flow (perm)	606	2453	0	663	2488	0	488	1464	1244	348	1464	1244
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		92			46				32			29
Link Speed (mph)		30			30			30				30
Link Distance (ft)		613			414			375				744
Travel Time (s)		13.9			9.4			8.5				16.9
Peak Hour Factor	0.87	0.87	0.87	0.80	0.80	0.80	0.92	0.92	0.92	0.89	0.89	0.89
Bus Blockages (#/hr)	0	2	2	0	2	2	0	0	0	0	0	0
Parking (#/hr)		10	10		10	10						
Adj. Flow (vph)	51	279	111	45	341	83	108	809	35	97	658	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	390	0	45	424	0	108	809	35	97	658	29
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.35	1.50	1.24	1.35	1.50	1.24	1.35	1.35	1.35	1.35	1.35	1.35
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
2: Fremont Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	18.5	18.5		18.5	18.5		20.5	20.5	20.5	20.5	20.5	20.5
Total Split (s)	18.5	18.5		18.5	18.5		41.5	41.5	41.5	41.5	41.5	41.5
Total Split (%)	30.8%	30.8%		30.8%	30.8%		69.2%	69.2%	69.2%	69.2%	69.2%	69.2%
Maximum Green (s)	14.0	14.0		14.0	14.0		36.0	36.0	36.0	36.0	36.0	36.0
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5		4.5	4.5		5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		2.0	2.0		4.5	4.5	4.5	2.0	2.0	2.0
Minimum Gap (s)	3.0	3.0		2.0	2.0		3.5	3.5	3.5	2.0	2.0	2.0
Time Before Reduce (s)	1.5	1.5		0.0	0.0		2.0	2.0	2.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		8.0	8.0	8.0	8.0	8.0	8.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	12.4	12.4		12.4	12.4		37.6	37.6	37.6	37.6	37.6	37.6
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.63	0.63	0.63	0.63	0.63	0.63
v/c Ratio	0.41	0.67		0.33	0.77		0.35	0.88	0.04	0.45	0.72	0.04
Control Delay	30.6	22.6		26.7	30.1		14.2	23.8	5.8	14.9	14.2	2.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	1.9	0.0	0.0	1.9	0.0
Total Delay	30.6	22.6		26.7	30.1		14.2	25.7	5.8	14.9	16.1	2.3
LOS	C	C		C	C		B	C	A	B	B	A
Approach Delay		23.5			29.8			23.7			15.4	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)	16	50		14	66		29	234	3	16	146	0
Queue Length 95th (ft)	43	85		34	93		m39	m#309	m5	58	274	8
Internal Link Dist (ft)		533			334			295			664	
Turn Bay Length (ft)	75			75			50		100	75		100
Base Capacity (vph)	141	642		154	615		305	917	791	217	917	790
Starvation Cap Reductn	0	0		0	0		0	37	0	0	0	0
Spillback Cap Reductn	0	4		0	0		0	0	0	0	130	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.61		0.29	0.69		0.35	0.92	0.04	0.45	0.84	0.04

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 18 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 65

# Lanes, Volumes, Timings

## 2: Fremont Ave & Mission St

12/28/2021

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 22.3

Intersection LOS: C

Intersection Capacity Utilization 83.8%

ICU Level of Service E

Analysis Period (min) 15

# 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.

Splits and Phases: 2: Fremont Ave & Mission St

 Ø2 (R)	 Ø4
41.5 s	18.5 s
 Ø6 (R)	 Ø8
41.5 s	18.5 s

Lanes, Volumes, Timings  
3: Mission St & Meridian Ave

12/28/2021



Lane Group	EBL2	EBT	WBT	WBR	SBL	SBR2	NET	SWT
Lane Configurations		↑↑	↑↑		↑↑		↑	↑
Traffic Volume (vph)	16	330	326	50	45	33	8	8
Future Volume (vph)	16	330	326	50	45	33	8	8
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	11	11	12	12	12	12	12
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.980		0.943			
Flt Protected		0.998			0.972			
Satd. Flow (prot)	0	2649	2612	0	1438	0	1569	1569
Flt Permitted		0.930			0.972			
Satd. Flow (perm)	0	2469	2612	0	1438	0	1569	1569
Right Turn on Red						No		
Satd. Flow (RTOR)								
Link Speed (mph)		30	30		25		30	30
Link Distance (ft)		408	294		340		356	325
Travel Time (s)		9.3	6.7		9.3		8.1	7.4
Peak Hour Factor	0.90	0.90	0.82	0.82	0.80	0.80	0.92	0.92
Bus Blockages (#/hr)	0	2	0	0	0	0	0	0
Parking (#/hr)		10	10	10				
Adj. Flow (vph)	18	367	398	61	56	41	9	9
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	385	459	0	97	0	9	9
Enter Blocked Intersection	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right	Left	Left
Median Width(ft)		0	0		12		0	0
Link Offset(ft)		0	0		0		0	0
Crosswalk Width(ft)		16	16		16		16	16
Two way Left Turn Lane								
Headway Factor	1.24	1.43	1.43	1.24	1.24	1.24	1.24	1.24
Turning Speed (mph)	15			9	15	9		
Number of Detectors	1	2	2		1		2	2
Detector Template	Left	Thru	Thru		Left		Thru	Thru
Leading Detector (ft)	20	100	100		20		100	100
Trailing Detector (ft)	0	0	0		0		0	0
Detector 1 Position(ft)	0	0	0		0		0	0
Detector 1 Size(ft)	20	6	6		20		6	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel								
Detector 1 Extend (s)	0.0	0.0	0.0		0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0		0.0	0.0
Detector 2 Position(ft)		94	94				94	94
Detector 2 Size(ft)		6	6				6	6
Detector 2 Type		Cl+Ex	Cl+Ex				Cl+Ex	Cl+Ex
Detector 2 Channel								
Detector 2 Extend (s)		0.0	0.0				0.0	0.0
Turn Type	Perm	NA	NA		Prot		NA	NA
Protected Phases		2	6		4		9	9
Permitted Phases	2							

Lanes, Volumes, Timings  
3: Mission St & Meridian Ave

12/28/2021



Lane Group	EBL2	EBT	WBT	WBR	SBL	SBR2	NET	SWT
Detector Phase	2	2	6		4		9	9
Switch Phase								
Minimum Initial (s)	24.0	24.0	24.0		5.0		40.5	40.5
Minimum Split (s)	28.7	28.7	28.7		27.5		45.0	45.0
Total Split (s)	49.0	49.0	49.0		31.0		45.0	45.0
Total Split (%)	39.2%	39.2%	39.2%		24.8%		36.0%	36.0%
Maximum Green (s)	44.3	44.3	44.3		26.8		40.5	40.5
Yellow Time (s)	3.2	3.2	3.2		3.2		3.5	3.5
All-Red Time (s)	1.5	1.5	1.5		1.0		1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0
Total Lost Time (s)		4.7	4.7		4.2		4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	1.0	1.0	1.0		3.5		3.0	3.0
Recall Mode	Min	Min	Min		None		None	None
Walk Time (s)	5.0	5.0	5.0		5.0			
Flash Dont Walk (s)	12.0	12.0	16.0		18.0			
Pedestrian Calls (#/hr)	0	0	0		0			
Act Effct Green (s)		33.2	33.2		11.1		44.7	44.7
Actuated g/C Ratio		0.60	0.60		0.20		0.81	0.81
v/c Ratio		0.26	0.29		0.34		0.01	0.01
Control Delay		13.2	13.3		25.9		8.5	8.5
Queue Delay		0.0	0.0		0.0		0.0	0.0
Total Delay		13.2	13.3		25.9		8.5	8.5
LOS		B	B		C		A	A
Approach Delay		13.2	13.3		25.9		8.5	8.5
Approach LOS		B	B		C		A	A
Queue Length 50th (ft)		18	23		19		0	0
Queue Length 95th (ft)		157	166		91		13	13
Internal Link Dist (ft)		328	214		260		276	245
Turn Bay Length (ft)								
Base Capacity (vph)		2146	2270		770		1270	1270
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		0.18	0.20		0.13		0.01	0.01

Intersection Summary

Area Type: Other

Cycle Length: 125

Actuated Cycle Length: 55.2

Natural Cycle: 105

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.34

Intersection Signal Delay: 14.5

Intersection LOS: B

Intersection Capacity Utilization 75.2%





ICU Level of Service D

Analysis Period (min) 15

Lanes, Volumes, Timings  
 3: Mission St & Meridian Ave

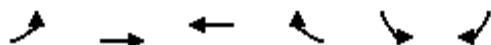
12/28/2021

Splits and Phases: 3: Mission St & Meridian Ave

		
<p>49 s</p>	<p>31 s</p>	<p>45 s</p>
		
<p>49 s</p>		

Lanes, Volumes, Timings  
4: Mission St & Orange Grove Ave

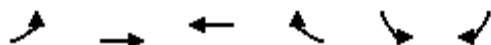
12/28/2021



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	279	263	256	110	120	185
Future Volume (vph)	279	263	256	110	120	185
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	11	12	11	11
Storage Length (ft)	40			0	100	100
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	0.91
Fr <sub>t</sub>			0.955		0.937	0.850
Fl <sub>t</sub> Protected	0.950				0.972	
Satd. Flow (prot)	1391	2654	2545	0	2679	1173
Fl <sub>t</sub> Permitted	0.506				0.972	
Satd. Flow (perm)	741	2654	2545	0	2679	1173
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			126		109	122
Link Speed (mph)		30	30		30	
Link Distance (ft)		161	588		432	
Travel Time (s)		3.7	13.4		9.8	
Peak Hour Factor	0.80	0.80	0.87	0.87	0.80	0.80
Bus Blockages (#/hr)	0	2	0	0	0	0
Parking (#/hr)		10	10	10		
Adj. Flow (vph)	349	329	294	126	150	231
Shared Lane Traffic (%)						47%
Lane Group Flow (vph)	349	329	420	0	259	122
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		22	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.35	1.43	1.43	1.24	1.30	1.30
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	6	6		20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			

Lanes, Volumes, Timings  
4: Mission St & Orange Grove Ave

12/28/2021



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Detector Phase	4	4	8		6	6
Switch Phase						
Minimum Initial (s)	30.0	30.0	30.0		4.0	4.0
Minimum Split (s)	35.0	35.0	35.0		24.0	24.0
Total Split (s)	36.0	36.0	36.0		24.0	24.0
Total Split (%)	60.0%	60.0%	60.0%		40.0%	40.0%
Maximum Green (s)	31.0	31.0	31.0		20.0	20.0
Yellow Time (s)	4.0	4.0	4.0		3.0	3.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Min	Min	Min		None	None
Walk Time (s)			20.0		8.0	8.0
Flash Dont Walk (s)			10.0		12.0	12.0
Pedestrian Calls (#/hr)			0		0	0
Act Effct Green (s)	30.6	30.6	30.6		8.1	8.1
Actuated g/C Ratio	0.64	0.64	0.64		0.17	0.17
v/c Ratio	0.74	0.19	0.25		0.47	0.41
Control Delay	20.0	4.2	3.2		13.6	8.9
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	20.0	4.2	3.2		13.6	8.9
LOS	C	A	A		B	A
Approach Delay		12.3	3.2		12.1	
Approach LOS		B	A		B	
Queue Length 50th (ft)	51	15	13		19	0
Queue Length 95th (ft)	#172	29	31		37	27
Internal Link Dist (ft)		81	508		352	
Turn Bay Length (ft)	40				100	100
Base Capacity (vph)	481	1724	1698		1186	562
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	0.73	0.19	0.25		0.22	0.22

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	47.8
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.74
Intersection Signal Delay:	9.7
Intersection Capacity Utilization	68.0%
Intersection LOS:	A
ICU Level of Service	C



# Lanes, Volumes, Timings

## 4: Mission St & Orange Grove Ave

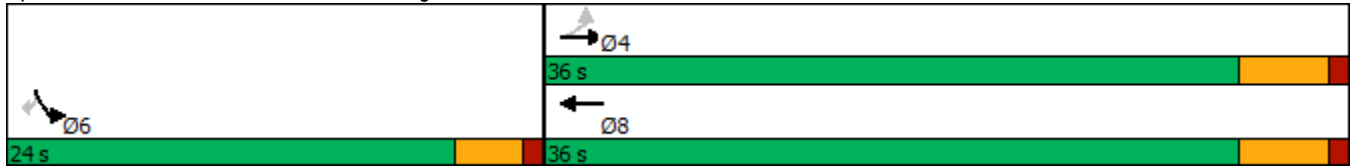
12/28/2021

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Mission St & Orange Grove Ave



Lanes, Volumes, Timings  
5: Fair Oaks Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕↔		↕	↕↔	
Traffic Volume (vph)	18	26	26	5	25	3	76	1166	14	8	945	51
Future Volume (vph)	18	26	26	5	25	3	76	1166	14	8	945	51
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	11	12	10	11	12
Storage Length (ft)	0		0	0		0	75		0	75		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr <sub>t</sub>		0.950			0.987			0.998			0.992	
Fl <sub>t</sub> Protected		0.987			0.993		0.950			0.950		
Satd. Flow (prot)	0	1422	0	0	1486	0	1652	3414	0	1652	3394	0
Fl <sub>t</sub> Permitted		0.904			0.966		0.233			0.196		
Satd. Flow (perm)	0	1302	0	0	1446	0	405	3414	0	341	3394	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			4			2			9	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		420			404			386			375	
Travel Time (s)		11.5			11.0			8.8			8.5	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	23	33	33	6	31	4	83	1267	15	9	1005	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	89	0	0	41	0	83	1282	0	9	1059	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.30	1.24	1.24	1.30	1.24	1.09	1.04	1.00	1.09	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		1	6		5	2	

Lanes, Volumes, Timings  
5: Fair Oaks Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		4.0	10.0		4.0	10.0	
Minimum Split (s)	27.0	27.0		27.0	27.0		7.0	34.0		8.0	34.0	
Total Split (s)	29.0	29.0		29.0	29.0		9.0	63.0		8.0	62.0	
Total Split (%)	29.0%	29.0%		29.0%	29.0%		9.0%	63.0%		8.0%	62.0%	
Maximum Green (s)	24.5	24.5		24.5	24.5		6.0	59.0		4.0	58.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.0	0.0		1.0	0.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		3.0	4.0		4.0	4.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	2.0		2.5	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)	7.0	7.0		6.0	6.0			9.0			9.0	
Flash Dont Walk (s)	15.5	15.5		16.5	16.5			21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		11.5			11.5		83.5	81.8		79.6	76.3	
Actuated g/C Ratio		0.12			0.12		0.84	0.82		0.80	0.76	
v/c Ratio		0.51			0.24		0.20	0.46		0.03	0.41	
Control Delay		39.5			39.9		3.3	4.8		1.4	2.7	
Queue Delay		0.0			0.0		0.0	0.1		0.0	0.1	
Total Delay		39.5			39.9		3.3	5.0		1.4	2.8	
LOS		D			D		A	A		A	A	
Approach Delay		39.5			39.9			4.9			2.8	
Approach LOS		D			D			A			A	
Queue Length 50th (ft)		37			22		7	93		1	60	
Queue Length 95th (ft)		71			46		20	258		m1	47	
Internal Link Dist (ft)		340			324			306			295	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)		340			357		416	2792		338	2590	
Starvation Cap Reductn		0			0		0	0		0	570	
Spillback Cap Reductn		4			0		0	533		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.26			0.11		0.20	0.57		0.03	0.52	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 34 (34%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.51

Lanes, Volumes, Timings  
 5: Fair Oaks Ave & El Centro St

12/28/2021

Intersection Signal Delay: 5.8	Intersection LOS: A
Intersection Capacity Utilization 54.8%	ICU Level of Service A
Analysis Period (min) 15	



















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

Splits and Phases: 5: Fair Oaks Ave & El Centro St

 Ø1 9 s	 Ø2 (R) 62 s	 Ø4 29 s
 Ø5 8 s	 Ø6 (R) 63 s	 Ø8 29 s

Lanes, Volumes, Timings  
6: Fremont Ave & El Centro St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	86	33	16	69	24	25	832	8	5	687	27
Future Volume (vph)	19	86	33	16	69	24	25	832	8	5	687	27
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	10	12	12	10	12	12
Storage Length (ft)	0		0	0		0	75		0	75		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.968			0.970			0.998			0.994	
Flt Protected		0.993			0.993		0.950			0.950		
Satd. Flow (prot)	0	1558	0	0	1561	0	1391	1565	0	1391	1559	0
Flt Permitted		0.941			0.942		0.246			0.179		
Satd. Flow (perm)	0	1476	0	0	1481	0	360	1565	0	262	1559	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26			24			1				5
Link Speed (mph)		25			25			30				30
Link Distance (ft)		632			417			438				375
Travel Time (s)		17.2			11.4			10.0				8.5
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.94	0.94	0.94	0.91	0.91	0.91
Adj. Flow (vph)	24	108	41	20	86	30	27	885	9	5	755	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	173	0	0	136	0	27	894	0	5	785	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.35	1.24	1.24	1.35	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	

Lanes, Volumes, Timings  
6: Fremont Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	22.0	22.0		22.0	22.0		38.0	38.0		38.0	38.0	
Total Split (%)	36.7%	36.7%		36.7%	36.7%		63.3%	63.3%		63.3%	63.3%	
Maximum Green (s)	17.0	17.0		17.0	17.0		33.0	33.0		33.0	33.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.5	4.5		4.5	4.5		4.0	4.0		4.0	4.0	
Minimum Gap (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	1.5	1.5		1.5	1.5		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		C-Min	C-Min		C-Min	C-Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		12.6			12.6		37.4	37.4		37.4	37.4	
Actuated g/C Ratio		0.21			0.21		0.62	0.62		0.62	0.62	
v/c Ratio		0.52			0.41		0.12	0.92		0.03	0.81	
Control Delay		22.7			19.6		7.7	29.5		4.8	17.8	
Queue Delay		1.7			1.0		0.0	4.2		0.0	9.8	
Total Delay		24.5			20.6		7.7	33.7		4.8	27.6	
LOS		C			C		A	C		A	C	
Approach Delay		24.5			20.6			32.9			27.4	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)		47			35		3	240		0	236	
Queue Length 95th (ft)		77			61		16	#566		m1	#473	
Internal Link Dist (ft)		552			337			358			295	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)		436			436		224	975		163	973	
Starvation Cap Reductn		0			0		0	0		0	166	
Spillback Cap Reductn		141			141		0	46		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.59			0.46		0.12	0.96		0.03	0.97	

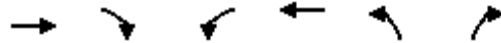
Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 36 (60%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.92



Lanes, Volumes, Timings  
7: Meridian Ave & El Centro St

12/28/2021



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	115	124	53	110	71	21
Future Volume (vph)	115	124	53	110	71	21
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	13	12	12	13	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.930			0.969		
Flt Protected				0.984	0.963	
Satd. Flow (prot)	1507	0	0	1595	1464	0
Flt Permitted				0.984	0.963	
Satd. Flow (perm)	1507	0	0	1595	1464	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	1194			309	450	
Travel Time (s)	32.6			8.4	12.3	
Peak Hour Factor	0.81	0.81	0.80	0.80	0.80	0.80
Adj. Flow (vph)	142	153	66	138	89	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	295	0	0	204	115	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.19	1.24	1.24	1.19	1.24	1.24
Turning Speed (mph)	9		15	15		9
Sign Control	Stop			Stop	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	42.7% ICU Level of Service A
Analysis Period (min)	15



Lanes, Volumes, Timings  
8: orange Grove Ave & El Centro St

12/28/2021





















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	↕
Traffic Volume (vph)	16	121	14	5	120	56	20	83	6	112	82	15
Future Volume (vph)	16	121	14	5	120	56	20	83	6	112	82	15
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	12	13	12	13	13	12
Storage Length (ft)	0		0	0		0	0		0	0		75
Storage Lanes	0		0	0		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987			0.958			0.992			0.977	
Flt Protected		0.995			0.999			0.991		0.950		
Satd. Flow (prot)	0	1592	0	0	1551	0	0	1593	0	1540	1584	0
Flt Permitted		0.995			0.999			0.991		0.950		
Satd. Flow (perm)	0	1592	0	0	1551	0	0	1593	0	1540	1584	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		426			1194			450			376	
Travel Time (s)		11.6			32.6			12.3			10.3	
Peak Hour Factor	0.88	0.88	0.88	0.87	0.87	0.87	0.80	0.80	0.80	0.87	0.87	0.87
Adj. Flow (vph)	18	138	16	6	138	64	25	104	8	129	94	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	172	0	0	208	0	0	137	0	129	111	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.19	1.24	1.19	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	38.5%
ICU Level of Service	A
Analysis Period (min)	15























Lanes, Volumes, Timings  
9: Pasadena Ave & El Centro St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	2	19	0	35	1	105	70	64	65	1
Future Volume (vph)	1	0	2	19	0	35	1	105	70	64	65	1
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	12	14	12	14	12	11	14	12	11	12
Storage Length (ft)	0		0	0		0	0		75	100		0
Storage Lanes	0		0	1		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.899			0.865				0.850		0.998	
Flt Protected		0.988		0.950						0.950		
Satd. Flow (prot)	0	1393	0	1590	0	0	0	1516	1411	1490	1513	0
Flt Permitted		0.988		0.950						0.950		
Satd. Flow (perm)	0	1393	0	1590	0	0	0	1516	1411	1490	1513	0
Link Speed (mph)		30			25			30			30	
Link Distance (ft)		367			417			410			724	
Travel Time (s)		8.3			11.4			9.3			16.5	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	0
Adj. Flow (vph)	1	0	3	24	0	44	1	131	88	80	81	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	24	44	0	0	132	88	80	82	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		14			14			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.24	1.24	1.24	1.15	1.24	1.15	1.24	1.30	1.16	1.24	1.30	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization Err%	ICU Level of Service H											
Analysis Period (min)	15											

Lanes, Volumes, Timings  
11: Fremont Ave & Monterey Rd

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	564	236	89	559	39	151	750	32	40	640	31
Future Volume (vph)	90	564	236	89	559	39	151	750	32	40	640	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	12	12	10	12	12	10	10	16	10	10	16
Storage Length (ft)	150		0	125		0	100		50	100		40
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.956			0.990				0.850			0.850
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	3383	0	1652	3504	0	1391	1464	1511	1391	1464	1511
Fl <sub>t</sub> Permitted	0.235			0.235			0.260			0.164		
Satd. Flow (perm)	409	3383	0	409	3504	0	381	1464	1511	240	1464	1511
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		107			12				36			36
Link Speed (mph)		35			35			30				30
Link Distance (ft)		666			643			396				474
Travel Time (s)		13.0			12.5			9.0				10.8
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.91	0.91	0.91	0.93	0.93	0.93
Adj. Flow (vph)	113	705	295	111	699	49	166	824	35	43	688	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	113	1000	0	111	748	0	166	824	35	43	688	33
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.09	1.00	1.00	1.09	1.00	1.00	1.35	1.35	1.06	1.35	1.35	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			4			2				2

Lanes, Volumes, Timings  
 11: Fremont Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			4			2		2	2		2
Detector Phase	4	4		4	4		2	2	2	2	2	2
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	22.0	22.0		22.0	22.0		38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	36.7%	36.7%		36.7%	36.7%		63.3%	63.3%	63.3%	63.3%	63.3%	63.3%
Maximum Green (s)	17.0	17.0		17.0	17.0		33.0	33.0	33.0	33.0	33.0	33.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.5	4.5		4.5	4.5		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Gap (s)	3.5	3.5		3.5	3.5		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	1.5	1.5		1.5	1.5		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	17.0	17.0		17.0	17.0		33.0	33.0	33.0	33.0	33.0	33.0
Actuated g/C Ratio	0.28	0.28		0.28	0.28		0.55	0.55	0.55	0.55	0.55	0.55
v/c Ratio	0.98	0.97		0.97	0.75		0.79	1.02	0.04	0.33	0.85	0.04
Control Delay	110.2	42.4		105.7	24.8		43.2	55.3	2.7	15.8	25.0	2.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	110.2	42.4		105.7	24.8		43.2	55.3	2.7	15.8	25.0	2.5
LOS	F	D		F	C		D	E	A	B	C	A
Approach Delay		49.3			35.3			51.5				23.5
Approach LOS		D			D			D				C
Queue Length 50th (ft)	40	168		39	126		43	~290	0	8	190	0
Queue Length 95th (ft)	#109	#232		#107	155		#150	#520	10	32	#403	9
Internal Link Dist (ft)		586			563			316				394
Turn Bay Length (ft)	150			125			100		50	100		40
Base Capacity (vph)	115	1035		115	1001		209	805	847	132	805	847
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.97		0.97	0.75		0.79	1.02	0.04	0.33	0.85	0.04

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 36 (60%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.02

# Lanes, Volumes, Timings

## 11: Fremont Ave & Monterey Rd

12/28/2021

Intersection Signal Delay: 41.5 Intersection LOS: D

Intersection Capacity Utilization 94.9% ICU Level of Service F

Analysis Period (min) 15

~ 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.

Splits and Phases: 11: Fremont Ave & Monterey Rd



Lanes, Volumes, Timings  
12: Meridian Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	921	204	31	805	5	344	149	48	50	118	6
Future Volume (vph)	26	921	204	31	805	5	344	149	48	50	118	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	12	10	11	12	12	13	12	12	13	12
Storage Length (ft)	225		0	175		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.973			0.999			0.988			0.995	
Fl <sub>t</sub> Protected	0.950			0.950				0.969			0.986	
Satd. Flow (prot)	1652	3329	0	1652	3418	0	0	1552	0	0	1590	0
Fl <sub>t</sub> Permitted	0.192			0.133				0.704			0.824	
Satd. Flow (perm)	334	3329	0	231	3418	0	0	1127	0	0	1329	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		54			1			9			3	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1211			592			371			479	
Travel Time (s)		23.6			11.5			10.1			13.1	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.95	0.95	0.95	0.91	0.91	0.91
Adj. Flow (vph)	33	1151	255	39	1006	6	362	157	51	55	130	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	1406	0	39	1012	0	0	570	0	0	192	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.00	1.09	1.04	1.00	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	

Lanes, Volumes, Timings  
 12: Meridian Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	30.0	30.0		30.0	30.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	35.0	35.0		35.0	35.0		24.5	24.5		24.5	24.5	
Total Split (s)	35.0	35.0		35.0	35.0		30.0	30.0		30.0	30.0	
Total Split (%)	53.8%	53.8%		53.8%	53.8%		46.2%	46.2%		46.2%	46.2%	
Maximum Green (s)	30.0	30.0		30.0	30.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0			0.0		
Total Lost Time (s)	5.0	5.0		5.0	5.0		4.0			4.0		
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	30.0	30.0		30.0	30.0		26.0			26.0		
Actuated g/C Ratio	0.46	0.46		0.46	0.46		0.40			0.40		
v/c Ratio	0.21	0.90		0.37	0.64		1.25			0.36		
Control Delay	14.9	25.3		23.6	15.7		152.5			15.9		
Queue Delay	0.0	0.0		0.0	0.0		0.0			0.0		
Total Delay	14.9	25.3		23.6	15.7		152.5			15.9		
LOS	B	C		C	B		F			B		
Approach Delay	25.0			16.0			152.5			15.9		
Approach LOS	C			B			F			B		
Queue Length 50th (ft)	7	246		10	152		~291			50		
Queue Length 95th (ft)	22	274		31	176		#471			98		
Internal Link Dist (ft)	1131			512			291			399		
Turn Bay Length (ft)	225			175								
Base Capacity (vph)	154	1565		106	1578		456			533		
Starvation Cap Reductn	0	0		0	0		0			0		
Spillback Cap Reductn	0	0		0	0		0			0		
Storage Cap Reductn	0	0		0	0		0			0		
Reduced v/c Ratio	0.21	0.90		0.37	0.64		1.25			0.36		

Intersection Summary

Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	65
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.25
Intersection Signal Delay:	43.9
Intersection LOS:	D
Intersection Capacity Utilization:	89.3%
ICU Level of Service:	E
Analysis Period (min):	15
~ Volume exceeds capacity, queue is theoretically infinite.	

# Lanes, Volumes, Timings

## 12: Meridian Ave & Monterey Rd

12/28/2021

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 12: Meridian Ave & Monterey Rd





Lanes, Volumes, Timings  
 13: Orange Grove Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	1041	2	7	978	170	1	3	6	104	1	32
Future Volume (vph)	17	1041	2	7	978	170	1	3	6	104	1	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	12	10	11	12	12	13	12	12	13	12
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.978			0.917				0.968
Fl <sub>t</sub> Protected	0.950			0.950				0.996				0.963
Satd. Flow (prot)	1652	3421	0	1652	3346	0	0	1480	0	0	1511	0
Fl <sub>t</sub> Permitted	0.157			0.194				0.996				0.963
Satd. Flow (perm)	273	3421	0	337	3346	0	0	1480	0	0	1511	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					21			8				15
Link Speed (mph)		35			35			25				25
Link Distance (ft)		429			1211			316				446
Travel Time (s)		8.4			23.6			8.6				12.2
Peak Hour Factor	0.87	0.87	0.87	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	20	1197	2	8	1151	200	1	4	8	130	1	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	1199	0	8	1351	0	0	13	0	0	171	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.00	1.09	1.04	1.00	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases		2			6		3	3		4		4

Lanes, Volumes, Timings  
 13: Orange Grove Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2				6							
Detector Phase	2	2			6	6	3	3			4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0	5.0	5.0	5.0			5.0	5.0
Minimum Split (s)	24.0	24.0			24.0	24.0	31.5	31.5			31.5	31.5
Total Split (s)	37.0	37.0			37.0	37.0	31.5	31.5			31.5	31.5
Total Split (%)	37.0%	37.0%			37.0%	37.0%	31.5%	31.5%			31.5%	31.5%
Maximum Green (s)	32.0	32.0			32.0	32.0	27.0	27.0			27.0	27.0
Yellow Time (s)	4.0	4.0			4.0	4.0	3.5	3.5			3.5	3.5
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0			1.0	1.0
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0				0.0	
Total Lost Time (s)	5.0	5.0			5.0	5.0	4.5				4.5	
Lead/Lag							Lead	Lead			Lag	Lag
Lead-Lag Optimize?							Yes	Yes			Yes	Yes
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode	C-Min	C-Min			C-Min	C-Min	None	None			None	None
Walk Time (s)	7.0	7.0			7.0	7.0	7.0	7.0			7.0	7.0
Flash Dont Walk (s)	12.0	12.0			12.0	12.0	20.0	20.0			20.0	20.0
Pedestrian Calls (#/hr)	0	0			0	0	0	0			0	0
Act Effct Green (s)	72.4	72.4			72.4	72.4	6.2				15.7	
Actuated g/C Ratio	0.72	0.72			0.72	0.72	0.06				0.16	
v/c Ratio	0.10	0.48			0.03	0.56	0.13				0.69	
Control Delay	8.8	8.2			7.7	9.0	32.4				49.7	
Queue Delay	0.0	0.0			0.0	0.0	0.0				0.0	
Total Delay	8.8	8.2			7.7	9.0	32.4				49.7	
LOS	A	A			A	A	C				D	
Approach Delay	8.2				9.0		32.4				49.7	
Approach LOS	A				A		C				D	
Queue Length 50th (ft)	3	129			1	156	3				95	
Queue Length 95th (ft)	19	305			9	351	19				132	
Internal Link Dist (ft)	349				1131		236				366	
Turn Bay Length (ft)	75				75							
Base Capacity (vph)	197	2476			244	2428	405				418	
Starvation Cap Reductn	0	0			0	0	0				0	
Spillback Cap Reductn	0	0			0	0	0				0	
Storage Cap Reductn	0	0			0	0	0				0	
Reduced v/c Ratio	0.10	0.48			0.03	0.56	0.03				0.41	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow  
 Natural Cycle: 110  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.69  
 Intersection Signal Delay: 11.3  
 Intersection Capacity Utilization 56.3%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service B

Lanes, Volumes, Timings  
 13: Orange Grove Ave & Monterey Rd

12/28/2021

Splits and Phases: 13: Orange Grove Ave & Monterey Rd



Lanes, Volumes, Timings  
 16: Meridian Ave & Hope St

12/28/2021




















Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	3	53	69	16	60	85
Future Volume (vph)	3	53	69	16	60	85
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	13	12	12	13
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.873		0.975			
Flt Protected	0.997					0.980
Satd. Flow (prot)	1365	0	1580	0	0	1588
Flt Permitted	0.997					0.980
Satd. Flow (perm)	1365	0	1580	0	0	1588
Link Speed (mph)	25		25			25
Link Distance (ft)	299		340			399
Travel Time (s)	8.2		9.3			10.9
Peak Hour Factor	0.80	0.80	0.80	0.80	0.83	0.83
Adj. Flow (vph)	4	66	86	20	72	102
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	0	106	0	0	174
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.24	1.24	1.19	1.24	1.24	1.19
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	26.7%
	ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings  
17: Fremont Ave & Grevelia St

12/28/2021

												
Lane Group	EBL2	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	NET
Lane Configurations												
Traffic Volume (vph)	5	7	13	2	10	7	8	792	2	2	632	8
Future Volume (vph)	5	7	13	2	10	7	8	792	2	2	632	8
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	12	12	12	12	12	14	12	12	14	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.930			0.951							
Flt Protected		0.990			0.994			0.999				
Satd. Flow (prot)	0	1444	0	0	1483	0	0	1672	0	0	1673	1569
Flt Permitted		0.921			0.952			0.993			0.999	
Satd. Flow (perm)	0	1344	0	0	1420	0	0	1661	0	0	1672	1569
Right Turn on Red	Yes											
Satd. Flow (RTOR)	62											
Link Speed (mph)	25				25				30		30	
Link Distance (ft)	1201				446				255		617	
Travel Time (s)	32.8				12.2				5.8		14.0	
Peak Hour Factor	0.88	0.88	0.88	0.80	0.80	0.80	0.91	0.91	0.91	0.82	0.82	0.92
Adj. Flow (vph)	6	8	15	3	13	9	9	870	2	2	771	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	29	0	0	25	0	0	881	0	0	773	9
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Left
Median Width(ft)	0				0				0		0	
Link Offset(ft)	0				0				0		0	
Crosswalk Width(ft)	16				16				16		16	
Two way Left Turn Lane												
Headway Factor	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.15	1.24	1.24	1.15	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		
Number of Detectors	1	2		1	2		1	2		1	2	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Thru
Leading Detector (ft)	20	100		20	100		20	100		20	100	100
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	6
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	94
Detector 2 Size(ft)		6			6			6			6	6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	NA
Protected Phases		4			8			2			6	9
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	9
Switch Phase												

Lanes, Volumes, Timings  
 17: Fremont Ave & Grevelia St

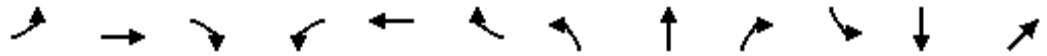
12/28/2021



Lane Group	SWT
Lane Configurations	↑
Traffic Volume (vph)	8
Future Volume (vph)	8
Ideal Flow (vphpl)	1600
Lane Width (ft)	12
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	1569
Flt Permitted	
Satd. Flow (perm)	1569
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	30
Link Distance (ft)	405
Travel Time (s)	9.2
Peak Hour Factor	0.92
Adj. Flow (vph)	9
Shared Lane Traffic (%)	
Lane Group Flow (vph)	9
Enter Blocked Intersection	No
Lane Alignment	Left
Median Width(ft)	0
Link Offset(ft)	0
Crosswalk Width(ft)	16
Two way Left Turn Lane	
Headway Factor	1.24
Turning Speed (mph)	
Number of Detectors	2
Detector Template	Thru
Leading Detector (ft)	100
Trailing Detector (ft)	0
Detector 1 Position(ft)	0
Detector 1 Size(ft)	6
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	94
Detector 2 Size(ft)	6
Detector 2 Type	Cl+Ex
Detector 2 Channel	
Detector 2 Extend (s)	0.0
Turn Type	NA
Protected Phases	9
Permitted Phases	
Detector Phase	9
Switch Phase	

Lanes, Volumes, Timings  
17: Fremont Ave & Grevelia St

12/28/2021



Lane Group	EBL2	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	NET
Minimum Initial (s)	10.0	10.0		6.0	6.0		40.0	40.0		40.0	40.0	40.5
Minimum Split (s)	20.0	20.0		11.0	11.0		45.0	45.0		45.0	45.0	45.0
Total Split (s)	25.0	25.0		25.0	25.0		45.0	45.0		45.0	45.0	45.0
Total Split (%)	21.7%	21.7%		21.7%	21.7%		39.1%	39.1%		39.1%	39.1%	39.1%
Maximum Green (s)	20.0	20.0		20.0	20.0		40.0	40.0		40.0	40.0	40.5
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		5.0			5.0			5.0			5.0	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.5	3.5		3.5	3.5		0.2	0.2		0.2	0.2	3.0
Recall Mode	None	None		None	None		Max	Max		Max	Max	None
Walk Time (s)	7.0	7.0								7.0	7.0	
Flash Dont Walk (s)	8.0	8.0								7.0	7.0	
Pedestrian Calls (#/hr)	0	0								0	0	
Act Effct Green (s)		10.9			8.3			53.5			53.5	45.1
Actuated g/C Ratio		0.16			0.13			0.81			0.81	0.68
v/c Ratio		0.13			0.14			0.65			0.57	0.01
Control Delay		31.7			32.8			14.8			14.4	11.6
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		31.7			32.8			14.8			14.4	11.6
LOS		C			C			B			B	B
Approach Delay		31.7			32.8			14.8			14.4	11.6
Approach LOS		C			C			B			B	B
Queue Length 50th (ft)		6			6			0			0	0
Queue Length 95th (ft)		46			37			#996			#761	14
Internal Link Dist (ft)		1121			366			175			537	229
Turn Bay Length (ft)												
Base Capacity (vph)		439			464			1355			1352	1069
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		0.07			0.05			0.65			0.57	0.01






Intersection Summary

Area Type: Other  
 Cycle Length: 115  
 Actuated Cycle Length: 66.2  
 Natural Cycle: 140  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.65  
 Intersection Signal Delay: 15.2      Intersection LOS: B  
 Intersection Capacity Utilization 110.7%      ICU Level of Service H  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Lanes, Volumes, Timings  
 17: Fremont Ave & Grevelia St

12/28/2021

Splits and Phases: 17: Fremont Ave & Grevelia St

 Ø2	 Ø4	 Ø9
45 s	25 s	45 s
 Ø6	 Ø8	
45 s	25 s	





Lane Group	SWT
Minimum Initial (s)	40.5
Minimum Split (s)	45.0
Total Split (s)	45.0
Total Split (%)	39.1%
Maximum Green (s)	40.5
Yellow Time (s)	3.5
All-Red Time (s)	1.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.5
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	45.1
Actuated g/C Ratio	0.68
v/c Ratio	0.01
Control Delay	11.6
Queue Delay	0.0
Total Delay	11.6
LOS	B
Approach Delay	11.6
Approach LOS	B
Queue Length 50th (ft)	0
Queue Length 95th (ft)	14
Internal Link Dist (ft)	325
Turn Bay Length (ft)	
Base Capacity (vph)	1069
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.01
<b>Intersection Summary</b>	

Lanes, Volumes, Timings  
18: Meridian Ave & Grevelia St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	↕
Traffic Volume (vph)	5	18	13	2	14	2	15	86	5	2	59	6
Future Volume (vph)	5	18	13	2	14	2	15	86	5	2	59	6
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	12	10	10	12	10	10
Storage Length (ft)	0		0	0		0	0		100	0		100
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.952			0.983				0.850			0.850
Flt Protected		0.993			0.994			0.993			0.998	
Satd. Flow (prot)	0	1532	0	0	1584	0	0	1454	1244	0	1461	1244
Flt Permitted		0.993			0.994			0.993			0.998	
Satd. Flow (perm)	0	1532	0	0	1584	0	0	1454	1244	0	1461	1244
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		441			1201			251			624	
Travel Time (s)		12.0			32.8			6.8			17.0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.84	0.84	0.84	0.80	0.80	0.80
Adj. Flow (vph)	6	23	16	3	18	3	18	102	6	3	74	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	45	0	0	24	0	0	120	6	0	77	8
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.35	1.35	1.24	1.35	1.35
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.1%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings  
 19: Diamond Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↑			↑	
Traffic Volume (vph)	0	355	6	25	336	1	26	0	46	0	0	0
Future Volume (vph)	0	355	6	25	336	1	26	0	46	0	0	0
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	11	12	12	11	12	10	12	12	12	12	12
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998						0.914				
Flt Protected					0.997			0.982				
Satd. Flow (prot)	0	2660	0	0	2657	0	0	1408	0	0	1569	0
Flt Permitted					0.997			0.982				
Satd. Flow (perm)	0	2660	0	0	2657	0	0	1408	0	0	1569	0
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		294			324			374			223	
Travel Time (s)		6.7			7.4			10.2			5.1	
Peak Hour Factor	0.84	0.84	0.84	0.88	0.88	0.88	0.87	0.87	0.87	0.25	0.25	0.25
Parking (#/hr)		10	10		10	10						
Adj. Flow (vph)	0	423	7	28	382	1	30	0	53	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	430	0	0	411	0	0	83	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.43	1.24	1.24	1.43	1.24	1.35	1.24	1.24	1.24	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	38.9%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
20: Fairview Ave & Mission St

12/28/2021



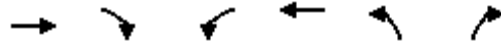
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Traffic Volume (vph)	14	359	28	31	343	24	3	5	13	12	19	16
Future Volume (vph)	14	359	28	31	343	24	3	5	13	12	19	16
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	11	12	12	11	12	12	12	12	12	12	12
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989			0.991			0.917			0.954	
Flt Protected		0.998			0.996			0.992			0.987	
Satd. Flow (prot)	0	2630	0	0	2630	0	0	1427	0	0	1477	0
Flt Permitted		0.998			0.996			0.992			0.987	
Satd. Flow (perm)	0	2630	0	0	2630	0	0	1427	0	0	1477	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		324			613			381			228	
Travel Time (s)		7.4			13.9			10.4			6.2	
Peak Hour Factor	0.94	0.94	0.94	0.86	0.86	0.86	0.80	0.80	0.80	0.80	0.80	0.80
Parking (#/hr)		10	10		10	10						
Adj. Flow (vph)	15	382	30	36	399	28	4	6	16	15	24	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	427	0	0	463	0	0	26	0	0	59	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.43	1.24	1.24	1.43	1.24	1.24	1.24	1.24	1.24	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	41.9%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
 21: Pasadena Ave & Mission St

12/28/2021



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑↑	↑	↑	↑	↑↑
Traffic Volume (vph)	210	23	107	141	29	112
Future Volume (vph)	210	23	107	141	29	112
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	13	13	12	12	11	14
Storage Length (ft)		0	0		100	100
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1621	1378	1490	1569	1441	2493
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1621	1378	1490	1569	1441	2493
Link Speed (mph)	30			30	30	
Link Distance (ft)	267			367	724	
Travel Time (s)	6.1			8.3	16.5	
Peak Hour Factor	0.88	0.88	0.80	0.80	0.80	0.80
Bus Blockages (#/hr)	0	0	0	0	0	2
Adj. Flow (vph)	239	26	134	176	36	140
Shared Lane Traffic (%)						
Lane Group Flow (vph)	239	26	134	176	36	140
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane					Yes	
Headway Factor	1.19	1.19	1.24	1.24	1.30	1.15
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Free	Free	

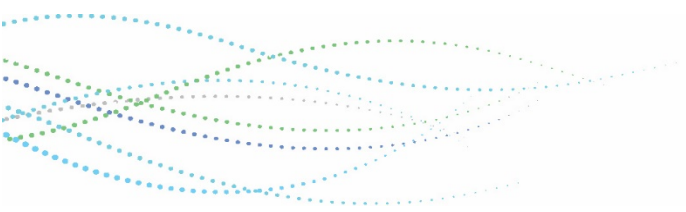
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	33.5%
ICU Level of Service	A
Analysis Period (min)	15



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## APPENDIX A: SYNCHRO OUTPUT SHEETS SCENARIO 1 - PM PEAK HOUR



Lanes, Volumes, Timings  
1: Fair Oaks Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	260	101	45	240	126	79	935	51	131	1236	95
Future Volume (vph)	109	260	101	45	240	126	79	935	51	131	1236	95
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	10	16	12	10	11	12	10	11	12
Storage Length (ft)	0		0	75		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr <sub>t</sub>		0.958			0.948			0.992			0.989	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1391	1192	0	1391	1685	0	1652	3360	0	1652	3336	0
Fl <sub>t</sub> Permitted	0.166			0.402			0.950			0.950		
Satd. Flow (perm)	243	1192	0	589	1685	0	1652	3360	0	1652	3336	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			25			7			10	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		427			434			375			355	
Travel Time (s)		9.7			9.9			8.5			8.1	
Peak Hour Factor	0.86	0.86	0.86	0.96	0.96	0.96	0.95	0.95	0.95	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	5	0	0	7	0
Parking (#/hr)		10	10									
Adj. Flow (vph)	127	302	117	47	250	131	83	984	54	142	1343	103
Shared Lane Traffic (%)												
Lane Group Flow (vph)	127	419	0	47	381	0	83	1038	0	142	1446	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.35	1.65	1.24	1.35	1.06	1.24	1.09	1.06	1.00	1.09	1.06	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
1: Fair Oaks Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases	3	8			4		1	6		5	2	
Permitted Phases	8			4								
Detector Phase	3	8		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	4.0	10.0		10.0	10.0		9.0	10.0		9.0	10.0	
Minimum Split (s)	8.5	28.5		27.0	27.0		13.5	25.0		13.5	25.0	
Total Split (s)	10.2	39.0		28.8	28.8		13.6	45.4		15.6	47.4	
Total Split (%)	10.2%	39.0%		28.8%	28.8%		13.6%	45.4%		15.6%	47.4%	
Maximum Green (s)	7.2	35.0		24.8	24.8		10.6	41.4		12.6	43.4	
Yellow Time (s)	3.0	3.5		3.5	3.5		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	0.5		0.5	0.5		0.0	0.0		0.0	0.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.5	3.0		3.0	3.0		1.5	4.0		1.5	4.0	
Minimum Gap (s)	2.5	3.0		3.0	3.0		1.5	3.0		1.5	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)		7.0		6.0	6.0			7.0			7.0	
Flash Dont Walk (s)		17.0		17.0	17.0			13.0			13.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	36.0	35.0		24.8	24.8		9.6	42.5		11.5	46.8	
Actuated g/C Ratio	0.36	0.35		0.25	0.25		0.10	0.42		0.12	0.47	
v/c Ratio	0.75	0.97		0.32	0.87		0.52	0.72		0.75	0.92	
Control Delay	51.5	69.7		38.1	55.8		65.4	23.0		67.0	37.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.6		0.0	0.0	
Total Delay	51.5	69.7		38.1	55.8		65.4	23.7		67.0	37.3	
LOS	D	E		D	E		E	C		E	D	
Approach Delay		65.5			53.9			26.8			40.0	
Approach LOS		E			D			C			D	
Queue Length 50th (ft)	56	250		25	220		52	301		88	453	
Queue Length 95th (ft)	#111	#418		61	#388		m107	372		#173	#641	
Internal Link Dist (ft)		347			354			295			275	
Turn Bay Length (ft)				75			150			150		
Base Capacity (vph)	170	430		146	436		175	1432		208	1565	
Starvation Cap Reductn	0	0		0	0		0	134		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.75	0.97		0.32	0.87		0.47	0.80		0.68	0.92	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow  
 Natural Cycle: 90



# Lanes, Volumes, Timings

## 1: Fair Oaks Ave & Mission St

12/28/2021

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 41.3

Intersection LOS: D

Intersection Capacity Utilization 89.9%

ICU Level of Service E




Analysis Period (min) 15

# 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.

Splits and Phases: 1: Fair Oaks Ave & Mission St

 Ø1	 Ø2 (R)	 Ø3	 Ø4
13.6 s	47.4 s	10.2 s	28.8 s
 Ø5	 Ø6 (R)	 Ø8	
15.6 s	45.4 s	39 s	

Lanes, Volumes, Timings  
2: Fremont Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	329	135	46	320	74	122	738	26	115	608	38
Future Volume (vph)	38	329	135	46	320	74	122	738	26	115	608	38
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	10	12	10	10	12	10	10	10	10	10	10
Storage Length (ft)	75		0	75		0	50		100	75		100
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.956			0.972				0.850			0.850
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1391	2450	0	1391	2491	0	1391	1464	1244	1391	1464	1244
Fl <sub>t</sub> Permitted	0.438			0.324			0.311			0.229		
Satd. Flow (perm)	641	2450	0	474	2491	0	455	1464	1244	335	1464	1244
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		97			44				27			42
Link Speed (mph)		30			30			30				30
Link Distance (ft)		613			414			375				744
Travel Time (s)		13.9			9.4			8.5				16.9
Peak Hour Factor	0.88	0.88	0.88	0.95	0.95	0.95	0.92	0.92	0.92	0.90	0.90	0.90
Bus Blockages (#/hr)	0	2	2	0	2	2	0	0	0	0	0	0
Parking (#/hr)		10	10		10	10						
Adj. Flow (vph)	43	374	153	48	337	78	133	802	28	128	676	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	527	0	48	415	0	133	802	28	128	676	42
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.35	1.50	1.24	1.35	1.50	1.24	1.35	1.35	1.35	1.35	1.35	1.35
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
2: Fremont Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	18.5	18.5		18.5	18.5		20.5	20.5	20.5	20.5	20.5	20.5
Total Split (s)	18.5	18.5		18.5	18.5		41.5	41.5	41.5	41.5	41.5	41.5
Total Split (%)	30.8%	30.8%		30.8%	30.8%		69.2%	69.2%	69.2%	69.2%	69.2%	69.2%
Maximum Green (s)	14.0	14.0		14.0	14.0		36.0	36.0	36.0	36.0	36.0	36.0
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5		4.5	4.5		5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		2.0	2.0		4.5	4.5	4.5	2.0	2.0	2.0
Minimum Gap (s)	3.0	3.0		2.0	2.0		3.5	3.5	3.5	2.0	2.0	2.0
Time Before Reduce (s)	1.5	1.5		0.0	0.0		2.0	2.0	2.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		8.0	8.0	8.0	8.0	8.0	8.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	13.6	13.6		13.6	13.6		36.4	36.4	36.4	36.4	36.4	36.4
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.61	0.61	0.61	0.61	0.61	0.61
v/c Ratio	0.30	0.84		0.45	0.69		0.48	0.90	0.04	0.63	0.76	0.05
Control Delay	25.3	32.0		35.5	25.8		3.6	12.1	0.1	26.5	16.4	2.1
Queue Delay	0.0	0.1		0.0	0.0		0.0	3.3	0.0	0.0	1.3	0.0
Total Delay	25.3	32.1		35.5	25.8		3.6	15.4	0.1	26.5	17.8	2.1
LOS	C	C		D	C		A	B	A	C	B	A
Approach Delay		31.5			26.8			13.3			18.3	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)	13	77		15	64		4	26	0	26	157	0
Queue Length 95th (ft)	38	#148		#52	107		m5	m29	m0	#112	#323	9
Internal Link Dist (ft)		533			334			295			664	
Turn Bay Length (ft)	75			75			50		100	75		100
Base Capacity (vph)	149	646		110	614		276	888	765	203	888	771
Starvation Cap Reductn	0	0		0	0		0	41	0	0	0	0
Spillback Cap Reductn	0	2		0	0		0	0	0	0	79	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.82		0.44	0.68		0.48	0.95	0.04	0.63	0.84	0.05

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 9 (15%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 65

# Lanes, Volumes, Timings

## 2: Fremont Ave & Mission St

12/28/2021

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 20.7 Intersection LOS: C

Intersection Capacity Utilization 89.6% ICU Level of Service E

Analysis Period (min) 15

# 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.

Splits and Phases: 2: Fremont Ave & Mission St

 Ø2 (R)	 Ø4
41.5 s	18.5 s
 Ø6 (R)	 Ø8
41.5 s	18.5 s

Lanes, Volumes, Timings  
3: Mission St & Meridian Ave

12/28/2021



Lane Group	EBL2	EBT	WBT	WBR	SBL	SBR2	NET	SWT
Lane Configurations		↑↑	↑↑		↑↑		↑	↑
Traffic Volume (vph)	10	484	409	42	69	43	8	8
Future Volume (vph)	10	484	409	42	69	43	8	8
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	11	11	12	12	12	12	12
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.986		0.948			
Flt Protected		0.999			0.970			
Satd. Flow (prot)	0	2652	2628	0	1442	0	1569	1569
Flt Permitted		0.945			0.970			
Satd. Flow (perm)	0	2508	2628	0	1442	0	1569	1569
Right Turn on Red							No	
Satd. Flow (RTOR)								
Link Speed (mph)		30	30		25		30	30
Link Distance (ft)		408	294		340		356	325
Travel Time (s)		9.3	6.7		9.3		8.1	7.4
Peak Hour Factor	0.96	0.96	0.88	0.88	0.86	0.86	0.92	0.92
Bus Blockages (#/hr)	0	2	0	0	0	0	0	0
Parking (#/hr)		10	10	10				
Adj. Flow (vph)	10	504	465	48	80	50	9	9
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	514	513	0	130	0	9	9
Enter Blocked Intersection	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right	Left	Left
Median Width(ft)		0	0		12		0	0
Link Offset(ft)		0	0		0		0	0
Crosswalk Width(ft)		16	16		16		16	16
Two way Left Turn Lane								
Headway Factor	1.24	1.43	1.43	1.24	1.24	1.24	1.24	1.24
Turning Speed (mph)	15			9	15	9		
Number of Detectors	1	2	2		1		2	2
Detector Template	Left	Thru	Thru		Left		Thru	Thru
Leading Detector (ft)	20	100	100		20		100	100
Trailing Detector (ft)	0	0	0		0		0	0
Detector 1 Position(ft)	0	0	0		0		0	0
Detector 1 Size(ft)	20	6	6		20		6	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel								
Detector 1 Extend (s)	0.0	0.0	0.0		0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0		0.0	0.0
Detector 2 Position(ft)		94	94				94	94
Detector 2 Size(ft)		6	6				6	6
Detector 2 Type		Cl+Ex	Cl+Ex				Cl+Ex	Cl+Ex
Detector 2 Channel								
Detector 2 Extend (s)		0.0	0.0				0.0	0.0
Turn Type	Perm	NA	NA		Prot		NA	NA
Protected Phases		2	6		4		9	9
Permitted Phases	2							

Lanes, Volumes, Timings  
3: Mission St & Meridian Ave

12/28/2021



Lane Group	EBL2	EBT	WBT	WBR	SBL	SBR2	NET	SWT
Detector Phase	2	2	6		4		9	9
Switch Phase								
Minimum Initial (s)	24.0	24.0	24.0		5.0		40.5	40.5
Minimum Split (s)	28.7	28.7	28.7		28.5		45.0	45.0
Total Split (s)	46.0	46.0	46.0		29.0		45.0	45.0
Total Split (%)	38.3%	38.3%	38.3%		24.2%		37.5%	37.5%
Maximum Green (s)	41.3	41.3	41.3		24.8		40.5	40.5
Yellow Time (s)	3.2	3.2	3.2		3.2		3.5	3.5
All-Red Time (s)	1.5	1.5	1.5		1.0		1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0
Total Lost Time (s)		4.7	4.7		4.2		4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	1.0	1.0	1.0		3.5		3.0	3.0
Recall Mode	Min	Min	Min		None		None	None
Walk Time (s)	5.0	5.0	5.0		5.0			
Flash Dont Walk (s)	12.0	12.0	16.0		18.0			
Pedestrian Calls (#/hr)	0	0	0		0			
Act Effct Green (s)		33.8	33.8		12.9		46.1	46.1
Actuated g/C Ratio		0.59	0.59		0.23		0.80	0.80
v/c Ratio		0.35	0.33		0.40		0.01	0.01
Control Delay		14.5	14.2		27.0		11.1	11.1
Queue Delay		0.0	0.0		0.0		0.0	0.0
Total Delay		14.5	14.2		27.0		11.1	11.1
LOS		B	B		C		B	B
Approach Delay		14.5	14.2		27.0		11.1	11.1
Approach LOS		B	B		C		B	B
Queue Length 50th (ft)		29	28		27		0	0
Queue Length 95th (ft)		224	214		133		15	15
Internal Link Dist (ft)		328	214		260		276	245
Turn Bay Length (ft)								
Base Capacity (vph)		2056	2155		710		1261	1261
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		0.25	0.24		0.18		0.01	0.01





Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	57.3
Natural Cycle:	105
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.40
Intersection Signal Delay:	15.7
Intersection Capacity Utilization:	76.9%
Analysis Period (min):	15
Intersection LOS:	B
ICU Level of Service:	D

Lanes, Volumes, Timings  
 3: Mission St & Meridian Ave

12/28/2021

Splits and Phases: 3: Mission St & Meridian Ave

 Ø2	 Ø4	 Ø9
46 s	29 s	45 s
 Ø6		
46 s		

Lanes, Volumes, Timings  
4: Mission St & Orange Grove Ave

12/28/2021

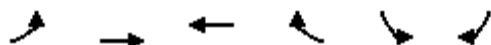


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	213	330	346	120	137	241
Future Volume (vph)	213	330	346	120	137	241
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	11	12	11	11
Storage Length (ft)	40			0	100	100
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	0.91
Fr <sub>t</sub>			0.961		0.930	0.850
Fl <sub>t</sub> Protected	0.950				0.974	
Satd. Flow (prot)	1391	2654	2561	0	2665	1173
Fl <sub>t</sub> Permitted	0.458				0.974	
Satd. Flow (perm)	671	2654	2561	0	2665	1173
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			119		130	129
Link Speed (mph)		30	30		30	
Link Distance (ft)		161	588		432	
Travel Time (s)		3.7	13.4		9.8	
Peak Hour Factor	0.85	0.85	0.89	0.89	0.93	0.93
Bus Blockages (#/hr)	0	2	0	0	0	0
Parking (#/hr)		10	10	10		
Adj. Flow (vph)	251	388	389	135	147	259
Shared Lane Traffic (%)						50%
Lane Group Flow (vph)	251	388	524	0	277	129
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		22	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.35	1.43	1.43	1.24	1.30	1.30
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	6	6		20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			



Lanes, Volumes, Timings  
4: Mission St & Orange Grove Ave

12/28/2021



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Detector Phase	4	4	8		6	6
Switch Phase						
Minimum Initial (s)	30.0	30.0	30.0		4.0	4.0
Minimum Split (s)	35.0	35.0	36.0		24.0	24.0
Total Split (s)	36.0	36.0	36.0		24.0	24.0
Total Split (%)	60.0%	60.0%	60.0%		40.0%	40.0%
Maximum Green (s)	31.0	31.0	31.0		20.0	20.0
Yellow Time (s)	4.0	4.0	4.0		3.0	3.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Min	Min	Min		None	None
Walk Time (s)			20.0		8.0	8.0
Flash Dont Walk (s)			10.0		12.0	12.0
Pedestrian Calls (#/hr)			0		0	0
Act Effct Green (s)	30.2	30.2	30.2		8.1	8.1
Actuated g/C Ratio	0.64	0.64	0.64		0.17	0.17
v/c Ratio	0.59	0.23	0.31		0.49	0.42
Control Delay	13.3	4.4	3.8		12.8	8.8
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	13.3	4.4	3.8		12.8	8.8
LOS	B	A	A		B	A
Approach Delay		7.9	3.8		11.5	
Approach LOS		A	A		B	
Queue Length 50th (ft)	31	18	19		18	0
Queue Length 95th (ft)	99	37	44		44	37
Internal Link Dist (ft)		81	508		352	
Turn Bay Length (ft)	40				100	100
Base Capacity (vph)	439	1739	1719		1201	570
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	0.22	0.30		0.23	0.23

Intersection Summary

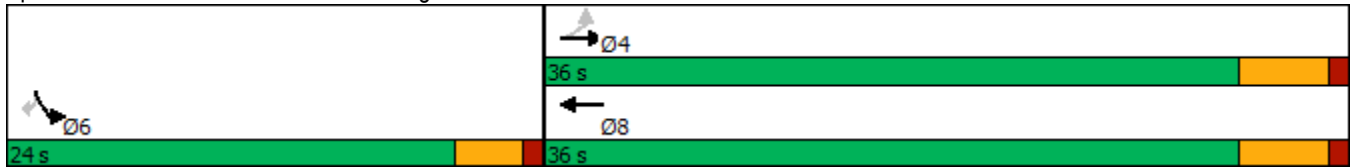
Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	47.4
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.59
Intersection Signal Delay:	7.5
Intersection Capacity Utilization:	69.3%
Intersection LOS:	A
ICU Level of Service:	C

Lanes, Volumes, Timings  
4: Mission St & Orange Grove Ave

12/28/2021

Analysis Period (min) 15

Splits and Phases: 4: Mission St & Orange Grove Ave



Lanes, Volumes, Timings  
5: Fair Oaks Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Volume (vph)	43	38	98	17	29	24	61	998	24	18	1309	55
Future Volume (vph)	43	38	98	17	29	24	61	998	24	18	1309	55
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	11	12	10	11	12
Storage Length (ft)	0		0	0		0	75		0	75		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr <sub>t</sub>		0.926			0.953			0.996			0.994	
Fl <sub>t</sub> Protected		0.988			0.988		0.950			0.950		
Satd. Flow (prot)	0	1387	0	0	1428	0	1652	3408	0	1652	3401	0
Fl <sub>t</sub> Permitted		0.914			0.865		0.122			0.235		
Satd. Flow (perm)	0	1283	0	0	1250	0	212	3408	0	409	3401	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		58			25			4			7	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		420			404			386			375	
Travel Time (s)		11.5			11.0			8.8			8.5	
Peak Hour Factor	0.88	0.88	0.88	0.80	0.80	0.80	0.96	0.96	0.96	0.94	0.94	0.94
Adj. Flow (vph)	49	43	111	21	36	30	64	1040	25	19	1393	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	203	0	0	87	0	64	1065	0	19	1452	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.30	1.24	1.24	1.30	1.24	1.09	1.04	1.00	1.09	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		1	6		5	2	

Lanes, Volumes, Timings  
5: Fair Oaks Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		4.0	10.0		4.0	10.0	
Minimum Split (s)	27.0	27.0		27.0	27.0		7.0	34.0		8.0	34.0	
Total Split (s)	29.0	29.0		29.0	29.0		9.0	63.0		8.0	62.0	
Total Split (%)	29.0%	29.0%		29.0%	29.0%		9.0%	63.0%		8.0%	62.0%	
Maximum Green (s)	24.5	24.5		24.5	24.5		6.0	59.0		4.0	58.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.0	0.0		1.0	0.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		3.0	4.0		4.0	4.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	2.0		2.5	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)	7.0	7.0		6.0	6.0			9.0			9.0	
Flash Dont Walk (s)	15.5	15.5		16.5	16.5			21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		17.2			17.2		74.4	70.8		71.1	67.1	
Actuated g/C Ratio		0.17			0.17		0.74	0.71		0.71	0.67	
v/c Ratio		0.76			0.37		0.27	0.44		0.05	0.64	
Control Delay		45.1			29.5		7.0	8.3		4.1	10.2	
Queue Delay		0.1			0.0		0.0	0.1		0.0	0.8	
Total Delay		45.1			29.5		7.0	8.4		4.1	11.0	
LOS		D			C		A	A		A	B	
Approach Delay		45.1			29.5			8.3			10.9	
Approach LOS		D			C			A			B	
Queue Length 50th (ft)		89			35		9	110		5	227	
Queue Length 95th (ft)		152			63		25	251		m2	m90	
Internal Link Dist (ft)		340			324			306			295	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)		358			325		245	2415		352	2285	
Starvation Cap Reductn		0			0		0	0		0	478	
Spillback Cap Reductn		4			2		0	297		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.57			0.27		0.26	0.50		0.05	0.80	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 6 (6%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.76

Lanes, Volumes, Timings  
 5: Fair Oaks Ave & El Centro St

12/28/2021

Intersection Signal Delay: 12.9	Intersection LOS: B
Intersection Capacity Utilization 68.1%	ICU Level of Service C
Analysis Period (min) 15	



















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

Splits and Phases: 5: Fair Oaks Ave & El Centro St

 Ø1	 Ø2 (R)	 Ø4
9 s	62 s	29 s
 Ø5	 Ø6 (R)	 Ø8
8 s	63 s	29 s

Lanes, Volumes, Timings  
6: Fremont Ave & El Centro St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	90	48	31	64	37	4	816	25	24	743	22
Future Volume (vph)	33	90	48	31	64	37	4	816	25	24	743	22
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	10	12	12	10	12	12
Storage Length (ft)	0		0	0		0	75		0	75		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.962			0.962			0.996			0.996	
Fl <sub>t</sub> Protected		0.990			0.988		0.950			0.950		
Satd. Flow (prot)	0	1544	0	0	1541	0	1391	1562	0	1391	1562	0
Fl <sub>t</sub> Permitted		0.923			0.897		0.233			0.148		
Satd. Flow (perm)	0	1439	0	0	1399	0	341	1562	0	217	1562	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33			32			4			4	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		632			417			438			375	
Travel Time (s)		17.2			11.4			10.0			8.5	
Peak Hour Factor	0.84	0.84	0.84	0.82	0.82	0.82	0.91	0.91	0.91	0.97	0.97	0.97
Adj. Flow (vph)	39	107	57	38	78	45	4	897	27	25	766	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	203	0	0	161	0	4	924	0	25	789	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.35	1.24	1.24	1.35	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	

Lanes, Volumes, Timings  
6: Fremont Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	22.0	22.0		22.0	22.0		38.0	38.0		38.0	38.0	
Total Split (%)	36.7%	36.7%		36.7%	36.7%		63.3%	63.3%		63.3%	63.3%	
Maximum Green (s)	17.0	17.0		17.0	17.0		33.0	33.0		33.0	33.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.5	4.5		4.5	4.5		4.0	4.0		4.0	4.0	
Minimum Gap (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	1.5	1.5		1.5	1.5		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		C-Min	C-Min		C-Min	C-Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		13.5			13.5		36.5	36.5		36.5	36.5	
Actuated g/C Ratio		0.22			0.22		0.61	0.61		0.61	0.61	
v/c Ratio		0.58			0.48		0.02	0.97		0.19	0.83	
Control Delay		23.6			19.9		6.5	39.2		10.4	17.1	
Queue Delay		0.0			0.0		0.0	11.8		0.0	0.8	
Total Delay		23.6			19.9		6.5	51.1		10.4	17.9	
LOS		C			B		A	D		B	B	
Approach Delay		23.6			19.9			50.9			17.7	
Approach LOS		C			B			D			B	
Queue Length 50th (ft)		54			40		1	279		3	136	
Queue Length 95th (ft)		94			72		4	#592		m6	m#454	
Internal Link Dist (ft)		552			337			358			295	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)		431			419		207	952		132	952	
Starvation Cap Reductn		0			0		0	0		0	36	
Spillback Cap Reductn		1			0		0	48		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.47			0.38		0.02	1.02		0.19	0.86	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 36 (60%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.97

Lanes, Volumes, Timings  
6: Fremont Ave & El Centro St

12/28/2021

Intersection Signal Delay: 33.0 Intersection LOS: C  
Intersection Capacity Utilization 75.3% ICU Level of Service D  
Analysis Period (min) 15  
# 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.

Splits and Phases: 6: Fremont Ave & El Centro St





Lanes, Volumes, Timings  
7: Meridian Ave & El Centro St

12/28/2021



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	103	102	66	85	47	37
Future Volume (vph)	103	102	66	85	47	37
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	13	12	12	13	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.933				0.941	
Flt Protected				0.979	0.973	
Satd. Flow (prot)	1512	0	0	1587	1436	0
Flt Permitted				0.979	0.973	
Satd. Flow (perm)	1512	0	0	1587	1436	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	1194			309	450	
Travel Time (s)	32.6			8.4	12.3	
Peak Hour Factor	0.80	0.80	0.87	0.87	0.80	0.80
Adj. Flow (vph)	129	128	76	98	59	46
Shared Lane Traffic (%)						
Lane Group Flow (vph)	257	0	0	174	105	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.19	1.24	1.24	1.19	1.24	1.24
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Stop	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	39.3%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings  
8: orange Grove Ave & El Centro St

12/28/2021






















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	↕
Traffic Volume (vph)	16	143	7	9	67	56	13	82	17	45	87	12
Future Volume (vph)	16	143	7	9	67	56	13	82	17	45	87	12
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	12	13	12	13	13	12
Storage Length (ft)	0		0	0		0	0		0	0		75
Storage Lanes	0		0	0		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.994			0.943			0.979			0.982	
Fl <sub>t</sub> Protected		0.995			0.997			0.994		0.950		
Satd. Flow (prot)	0	1603	0	0	1524	0	0	1577	0	1540	1592	0
Fl <sub>t</sub> Permitted		0.995			0.997			0.994		0.950		
Satd. Flow (perm)	0	1603	0	0	1524	0	0	1577	0	1540	1592	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		426			1194			450			376	
Travel Time (s)		11.6			32.6			12.3			10.3	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.82	0.82	0.82	0.92	0.92	0.92
Adj. Flow (vph)	20	179	9	11	84	70	16	100	21	49	95	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	208	0	0	165	0	0	137	0	49	108	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.19	1.24	1.19	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	35.6%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
 9: Pasadena Ave & El Centro St

12/28/2021























												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	26	0	38	0	94	29	25	79	1
Future Volume (vph)	0	0	0	26	0	38	0	94	29	25	79	1
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	12	14	12	14	12	11	14	12	11	12
Storage Length (ft)	0		0	0		0	0		75	100		0
Storage Lanes	0		0	1		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.865				0.850		0.998	
Fl <sub>t</sub> Protected				0.950						0.950		
Satd. Flow (prot)	0	1569	0	1590	0	0	0	1516	1411	1490	1513	0
Fl <sub>t</sub> Permitted				0.950						0.950		
Satd. Flow (perm)	0	1569	0	1590	0	0	0	1516	1411	1490	1513	0
Link Speed (mph)		30			25			30			30	
Link Distance (ft)		367			417			410			724	
Travel Time (s)		8.3			11.4			9.3			16.5	
Peak Hour Factor	0.25	0.25	0.25	0.89	0.89	0.89	0.88	0.88	0.88	0.80	0.80	0.80
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	0
Adj. Flow (vph)	0	0	0	29	0	43	0	107	33	31	99	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	29	43	0	0	107	33	31	100	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		14			14			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.24	1.24	1.24	1.15	1.24	1.15	1.24	1.30	1.16	1.24	1.30	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization Err%	ICU Level of Service H
Analysis Period (min)	15

Lanes, Volumes, Timings  
11: Fremont Ave & Monterey Rd

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	596	177	49	618	36	161	746	32	67	702	49
Future Volume (vph)	68	596	177	49	618	36	161	746	32	67	702	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	12	12	10	12	12	10	10	16	10	10	16
Storage Length (ft)	150		0	125		0	100		50	100		40
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.966			0.992				0.850			0.850
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	3419	0	1652	3511	0	1391	1464	1511	1391	1464	1511
Fl <sub>t</sub> Permitted	0.245			0.235			0.234			0.173		
Satd. Flow (perm)	426	3419	0	409	3511	0	343	1464	1511	253	1464	1511
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		64			10				36			36
Link Speed (mph)		35			35			30				30
Link Distance (ft)		666			643			396				474
Travel Time (s)		13.0			12.5			9.0				10.8
Peak Hour Factor	0.87	0.87	0.87	0.93	0.93	0.93	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	78	685	203	53	665	39	175	811	35	69	724	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	78	888	0	53	704	0	175	811	35	69	724	51
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.09	1.00	1.00	1.09	1.00	1.00	1.35	1.35	1.06	1.35	1.35	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			4			2				2

Lanes, Volumes, Timings  
11: Fremont Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			4			2		2	2		2
Detector Phase	4	4		4	4		2	2	2	2	2	2
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	22.0	22.0		22.0	22.0		38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	36.7%	36.7%		36.7%	36.7%		63.3%	63.3%	63.3%	63.3%	63.3%	63.3%
Maximum Green (s)	17.0	17.0		17.0	17.0		33.0	33.0	33.0	33.0	33.0	33.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.5	4.5		4.5	4.5		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Gap (s)	3.5	3.5		3.5	3.5		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	1.5	1.5		1.5	1.5		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	17.0	17.0		17.0	17.0		33.0	33.0	33.0	33.0	33.0	33.0
Actuated g/C Ratio	0.28	0.28		0.28	0.28		0.55	0.55	0.55	0.55	0.55	0.55
v/c Ratio	0.65	0.88		0.46	0.70		0.93	1.01	0.04	0.50	0.90	0.06
Control Delay	48.9	31.0		33.8	23.5		70.5	50.8	2.7	24.6	29.8	3.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	31.0		33.8	23.5		70.5	50.8	2.7	24.6	29.8	3.5
LOS	D	C		C	C		E	D	A	C	C	A
Approach Delay		32.5			24.2			52.6				27.8
Approach LOS		C			C			D				C
Queue Length 50th (ft)	25	148		16	117		52	~270	0	14	209	2
Queue Length 95th (ft)	#82	#235		#57	171		#168	#509	10	#69	#434	14
Internal Link Dist (ft)		586			563			316				394
Turn Bay Length (ft)	150			125			100		50	100		40
Base Capacity (vph)	120	1014		115	1001		188	805	847	139	805	847
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.88		0.46	0.70		0.93	1.01	0.04	0.50	0.90	0.06

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 36 (60%), Referenced to phase 2:NBSB and 6:, Start of Yellow  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.01

Lanes, Volumes, Timings  
11: Fremont Ave & Monterey Rd

12/28/2021

Intersection Signal Delay: 35.3 Intersection LOS: D

Intersection Capacity Utilization 96.6% ICU Level of Service F

Analysis Period (min) 15

~ 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.

Splits and Phases: 11: Fremont Ave & Monterey Rd



Lanes, Volumes, Timings  
12: Meridian Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	785	204	45	840	13	279	76	52	11	153	4
Future Volume (vph)	13	785	204	45	840	13	279	76	52	11	153	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	12	10	11	12	12	13	12	12	13	12
Storage Length (ft)	225		0	175		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.969			0.998			0.983			0.997	
Fl <sub>t</sub> Protected	0.950			0.950				0.967			0.997	
Satd. Flow (prot)	1652	3315	0	1652	3414	0	0	1541	0	0	1611	0
Fl <sub>t</sub> Permitted	0.230			0.176				0.675			0.967	
Satd. Flow (perm)	400	3315	0	306	3414	0	0	1076	0	0	1563	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		66			3			14			2	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1211			592			371			479	
Travel Time (s)		23.6			11.5			10.1			13.1	
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.87	0.87	0.87	0.85	0.85	0.85
Adj. Flow (vph)	14	835	217	48	903	14	321	87	60	13	180	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	1052	0	48	917	0	0	468	0	0	198	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.00	1.09	1.04	1.00	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	

Lanes, Volumes, Timings  
 12: Meridian Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	30.0	30.0		30.0	30.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	35.0	35.0		35.0	35.0		24.0	24.0		24.0	24.0	
Total Split (s)	35.0	35.0		35.0	35.0		30.0	30.0		30.0	30.0	
Total Split (%)	53.8%	53.8%		53.8%	53.8%		46.2%	46.2%		46.2%	46.2%	
Maximum Green (s)	30.0	30.0		30.0	30.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	30.0	30.0		30.0	30.0			26.0			26.0	
Actuated g/C Ratio	0.46	0.46		0.46	0.46			0.40			0.40	
v/c Ratio	0.08	0.67		0.34	0.58			1.07			0.32	
Control Delay	11.2	15.4		19.6	14.7			85.7			15.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	11.2	15.4		19.6	14.7			85.7			15.0	
LOS	B	B		B	B			F			B	
Approach Delay		15.3			14.9			85.7			15.0	
Approach LOS		B			B			F			B	
Queue Length 50th (ft)	3	151		12	132			~208			51	
Queue Length 95th (ft)	13	213		40	185			#357			90	
Internal Link Dist (ft)		1131			512			291			399	
Turn Bay Length (ft)	225			175								
Base Capacity (vph)	184	1565		141	1577			438			626	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.08	0.67		0.34	0.58			1.07			0.32	

Intersection Summary

Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	65
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.07
Intersection Signal Delay:	27.4
Intersection LOS:	C
Intersection Capacity Utilization:	85.7%
ICU Level of Service:	E
Analysis Period (min):	15

~ Volume exceeds capacity, queue is theoretically infinite.



Lanes, Volumes, Timings  
12: Meridian Ave & Monterey Rd

12/28/2021

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 12: Meridian Ave & Monterey Rd



Lanes, Volumes, Timings  
 13: Orange Grove Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	911	1	12	975	136	1	0	12	79	5	29
Future Volume (vph)	15	911	1	12	975	136	1	0	12	79	5	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	12	10	11	12	12	13	12	12	13	12
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.982			0.873			0.966	
Fl <sub>t</sub> Protected	0.950			0.950				0.997			0.966	
Satd. Flow (prot)	1652	3421	0	1652	3360	0	0	1411	0	0	1513	0
Fl <sub>t</sub> Permitted	0.202			0.248				0.997			0.966	
Satd. Flow (perm)	351	3421	0	431	3360	0	0	1411	0	0	1513	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					16			79			20	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		429			1211			316			446	
Travel Time (s)		8.4			23.6			8.6			12.2	
Peak Hour Factor	0.89	0.89	0.89	0.94	0.94	0.94	0.80	0.80	0.80	0.90	0.90	0.90
Adj. Flow (vph)	17	1024	1	13	1037	145	1	0	15	88	6	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	1025	0	13	1182	0	0	16	0	0	126	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.00	1.09	1.04	1.00	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases		2			6		3	3		4	4	

Lanes, Volumes, Timings  
 13: Orange Grove Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6								
Detector Phase	2	2		6	6		3	3		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		31.5	31.5		31.5	31.5	
Total Split (s)	26.0	26.0		26.0	26.0		32.0	32.0		32.0	32.0	
Total Split (%)	28.9%	28.9%		28.9%	28.9%		35.6%	35.6%		35.6%	35.6%	
Maximum Green (s)	21.0	21.0		21.0	21.0		27.5	27.5		27.5	27.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			4.5			4.5	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		20.0	20.0		20.0	20.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	64.8	64.8		64.8	64.8			5.5			11.7	
Actuated g/C Ratio	0.72	0.72		0.72	0.72			0.06			0.13	
v/c Ratio	0.07	0.42		0.04	0.49			0.10			0.59	
Control Delay	7.4	7.0		7.0	7.7			1.2			41.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	7.4	7.0		7.0	7.7			1.2			41.2	
LOS	A	A		A	A			A			D	
Approach Delay		7.0			7.7			1.2			41.2	
Approach LOS		A			A			A			D	
Queue Length 50th (ft)	2	81		1	99			0			57	
Queue Length 95th (ft)	13	210		11	261			0			107	
Internal Link Dist (ft)		349			1131			236			366	
Turn Bay Length (ft)	75			75								
Base Capacity (vph)	252	2462		310	2423			486			476	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.07	0.42		0.04	0.49			0.03			0.26	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow  
 Natural Cycle: 100  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.59  
 Intersection Signal Delay: 9.1  
 Intersection Capacity Utilization 53.5%  
 Analysis Period (min) 15

Intersection LOS: A  
 ICU Level of Service A

Lanes, Volumes, Timings  
 13: Orange Grove Ave & Monterey Rd










12/28/2021

Splits and Phases: 13: Orange Grove Ave & Monterey Rd

Ø2 (R)	Ø3	Ø4
26 s	32 s	32 s
Ø5 (R)		
26 s		

Lanes, Volumes, Timings  
 16: Meridian Ave & Hope St

12/28/2021

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	10	70	16	13	52	149
Future Volume (vph)	10	70	16	13	52	149
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	13	12	12	13
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.882		0.940			
Flt Protected	0.994					0.987
Satd. Flow (prot)	1375	0	1524	0	0	1600
Flt Permitted	0.994					0.987
Satd. Flow (perm)	1375	0	1524	0	0	1600
Link Speed (mph)	25		25			25
Link Distance (ft)	299		340			399
Travel Time (s)	8.2		9.3			10.9
Peak Hour Factor	0.83	0.83	0.82	0.82	0.93	0.93
Adj. Flow (vph)	12	84	20	16	56	160
Shared Lane Traffic (%)						
Lane Group Flow (vph)	96	0	36	0	0	216
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.24	1.24	1.19	1.24	1.24	1.19
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	31.9%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings  
17: Fremont Ave & Grevelia St

12/28/2021



Lane Group	EBL2	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR2
Lane Configurations												
Traffic Volume (vph)	5	10	23	1	6	10	6	795	8	3	695	7
Future Volume (vph)	5	10	23	1	6	10	6	795	8	3	695	7
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	12	12	12	12	12	14	12	12	14	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.918			0.920			0.999			0.999	
Flt Protected		0.994			0.998							
Satd. Flow (prot)	0	1431	0	0	1440	0	0	1672	0	0	1672	0
Flt Permitted		0.953			0.983			0.996			0.998	
Satd. Flow (perm)	0	1372	0	0	1419	0	0	1665	0	0	1668	0
Right Turn on Red									Yes			Yes
Satd. Flow (RTOR)								62			62	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		1201			446			255			617	
Travel Time (s)		32.8			12.2			5.8			14.0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.94	0.94	0.94	0.96	0.96	0.96
Adj. Flow (vph)	6	13	29	1	8	13	6	846	9	3	724	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	48	0	0	22	0	0	861	0	0	734	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.15	1.24	1.24	1.15	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												

Lanes, Volumes, Timings  
 17: Fremont Ave & Grevelia St

12/28/2021



Lane Group	NET	SWT
Lane Configurations	↑	↑
Traffic Volume (vph)	8	8
Future Volume (vph)	8	8
Ideal Flow (vphpl)	1600	1600
Lane Width (ft)	12	12
Lane Util. Factor	1.00	1.00
Frt		
Flt Protected		
Satd. Flow (prot)	1569	1569
Flt Permitted		
Satd. Flow (perm)	1569	1569
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)	30	30
Link Distance (ft)	309	405
Travel Time (s)	7.0	9.2
Peak Hour Factor	0.92	0.92
Adj. Flow (vph)	9	9
Shared Lane Traffic (%)		
Lane Group Flow (vph)	9	9
Enter Blocked Intersection	No	No
Lane Alignment	Left	Left
Median Width(ft)	0	0
Link Offset(ft)	0	0
Crosswalk Width(ft)	16	16
Two way Left Turn Lane		
Headway Factor	1.24	1.24
Turning Speed (mph)		
Number of Detectors	2	2
Detector Template	Thru	Thru
Leading Detector (ft)	100	100
Trailing Detector (ft)	0	0
Detector 1 Position(ft)	0	0
Detector 1 Size(ft)	6	6
Detector 1 Type	Cl+Ex	Cl+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(ft)	94	94
Detector 2 Size(ft)	6	6
Detector 2 Type	Cl+Ex	Cl+Ex
Detector 2 Channel		
Detector 2 Extend (s)	0.0	0.0
Turn Type	NA	NA
Protected Phases	9	9
Permitted Phases		
Detector Phase	9	9
Switch Phase		

Lanes, Volumes, Timings  
17: Fremont Ave & Grevelia St

12/28/2021



Lane Group	EBL2	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR2
Minimum Initial (s)	10.0	10.0		6.0	6.0		40.0	40.0		40.0	40.0	
Minimum Split (s)	20.0	20.0		11.0	11.0		45.0	45.0		45.0	45.0	
Total Split (s)	25.0	25.0		25.0	25.0		45.0	45.0		45.0	45.0	
Total Split (%)	21.7%	21.7%		21.7%	21.7%		39.1%	39.1%		39.1%	39.1%	
Maximum Green (s)	20.0	20.0		20.0	20.0		40.0	40.0		40.0	40.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.5	3.5		3.5	3.5		0.2	0.2		0.2	0.2	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0								7.0	7.0	
Flash Dont Walk (s)	8.0	8.0								8.0	8.0	
Pedestrian Calls (#/hr)	0	0								0	0	
Act Effct Green (s)		11.2			9.4			51.6			51.6	
Actuated g/C Ratio		0.16			0.13			0.74			0.74	
v/c Ratio		0.22			0.12			0.69			0.59	
Control Delay		33.3			32.7			17.0			14.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		33.3			32.7			17.0			14.9	
LOS		C			C			B			B	
Approach Delay		33.3			32.7			17.0			14.9	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)		15			7			156			112	
Queue Length 95th (ft)		60			34			#992			#795	
Internal Link Dist (ft)		1121			366			175			537	
Turn Bay Length (ft)												
Base Capacity (vph)		415			429			1246			1248	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.12			0.05			0.69			0.59	

Intersection Summary






Area Type: Other  
 Cycle Length: 115  
 Actuated Cycle Length: 69.8  
 Natural Cycle: 130  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.69  
 Intersection Signal Delay: 16.7  
 Intersection LOS: B  
 Intersection Capacity Utilization 109.5%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.



Lanes, Volumes, Timings  
 17: Fremont Ave & Grevelia St

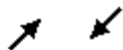
12/28/2021

Splits and Phases: 17: Fremont Ave & Grevelia St

		
45 s	25 s	45 s
		
45 s	25 s	

Lanes, Volumes, Timings  
 17: Fremont Ave & Grevelia St

12/28/2021



Lane Group	NET	SWT
Minimum Initial (s)	40.5	40.5
Minimum Split (s)	45.0	45.0
Total Split (s)	45.0	45.0
Total Split (%)	39.1%	39.1%
Maximum Green (s)	40.5	40.5
Yellow Time (s)	3.5	3.5
All-Red Time (s)	1.0	1.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	4.5	4.5
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)	42.8	42.8
Actuated g/C Ratio	0.61	0.61
v/c Ratio	0.01	0.01
Control Delay	12.6	12.6
Queue Delay	0.0	0.0
Total Delay	12.6	12.6
LOS	B	B
Approach Delay	12.6	12.6
Approach LOS	B	B
Queue Length 50th (ft)	1	1
Queue Length 95th (ft)	15	15
Internal Link Dist (ft)	229	325
Turn Bay Length (ft)		
Base Capacity (vph)	961	961
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.01	0.01
<b>Intersection Summary</b>		

Lanes, Volumes, Timings  
18: Meridian Ave & Grevelia St

12/28/2021



















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	↕
Traffic Volume (vph)	1	17	13	2	14	3	21	124	14	7	155	1
Future Volume (vph)	1	17	13	2	14	3	21	124	14	7	155	1
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	12	10	10	12	10	10
Storage Length (ft)	0		0	0		0	0		100	0		100
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.943			0.978				0.850			0.850
Flt Protected		0.999			0.994			0.993			0.998	
Satd. Flow (prot)	0	1527	0	0	1576	0	0	1454	1244	0	1461	1244
Flt Permitted		0.999			0.994			0.993			0.998	
Satd. Flow (perm)	0	1527	0	0	1576	0	0	1454	1244	0	1461	1244
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		441			1201			251			624	
Travel Time (s)		12.0			32.8			6.8			17.0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.93	0.93	0.93	0.83	0.83	0.83
Adj. Flow (vph)	1	21	16	3	18	4	23	133	15	8	187	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	38	0	0	25	0	0	156	15	0	195	1
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.35	1.35	1.24	1.35	1.35
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	32.6%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
19: Diamond Ave & Mission St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	525	33	33	421	6	16	1	25	0	0	0
Future Volume (vph)	0	525	33	33	421	6	16	1	25	0	0	0
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	11	12	12	11	12	10	12	12	12	12	12
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.998			0.920				
Flt Protected					0.996			0.981				
Satd. Flow (prot)	0	2641	0	0	2649	0	0	1416	0	0	1569	0
Flt Permitted					0.996			0.981				
Satd. Flow (perm)	0	2641	0	0	2649	0	0	1416	0	0	1569	0
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		294			324			374			223	
Travel Time (s)		6.7			7.4			10.2			5.1	
Peak Hour Factor	0.96	0.96	0.96	0.95	0.95	0.95	0.80	0.80	0.80	0.25	0.25	0.25
Parking (#/hr)		10	10		10	10						
Adj. Flow (vph)	0	547	34	35	443	6	20	1	31	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	581	0	0	484	0	0	52	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.43	1.24	1.24	1.43	1.24	1.35	1.24	1.24	1.24	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	47.0%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings  
20: Fairview Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Traffic Volume (vph)	20	478	52	43	406	31	7	2	14	10	8	47
Future Volume (vph)	20	478	52	43	406	31	7	2	14	10	8	47
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	11	12	12	11	12	12	12	12	12	12	12
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.986			0.990			0.915			0.902	
Flt Protected		0.998			0.996			0.985			0.993	
Satd. Flow (prot)	0	2622	0	0	2628	0	0	1414	0	0	1405	0
Flt Permitted		0.998			0.996			0.985			0.993	
Satd. Flow (perm)	0	2622	0	0	2628	0	0	1414	0	0	1405	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		324			613			381			228	
Travel Time (s)		7.4			13.9			10.4			6.2	
Peak Hour Factor	0.90	0.90	0.90	0.86	0.86	0.86	0.83	0.83	0.83	0.89	0.89	0.89
Parking (#/hr)		10	10		10	10						
Adj. Flow (vph)	22	531	58	50	472	36	8	2	17	11	9	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	611	0	0	558	0	0	27	0	0	73	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.43	1.24	1.24	1.43	1.24	1.24	1.24	1.24	1.24	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	49.5%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
21: Pasadena Ave & Mission St

12/28/2021



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	263	29	76	263	46	86
Future Volume (vph)	263	29	76	263	46	86
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	13	13	12	12	11	14
Storage Length (ft)		0	0		100	100
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1621	1378	1490	1569	1441	2493
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1621	1378	1490	1569	1441	2493
Link Speed (mph)	30			30	30	
Link Distance (ft)	267			367	724	
Travel Time (s)	6.1			8.3	16.5	
Peak Hour Factor	0.80	0.80	0.89	0.89	0.91	0.91
Bus Blockages (#/hr)	0	0	0	0	0	2
Adj. Flow (vph)	329	36	85	296	51	95
Shared Lane Traffic (%)						
Lane Group Flow (vph)	329	36	85	296	51	95
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane					Yes	
Headway Factor	1.19	1.19	1.24	1.24	1.30	1.15
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Free	Free	

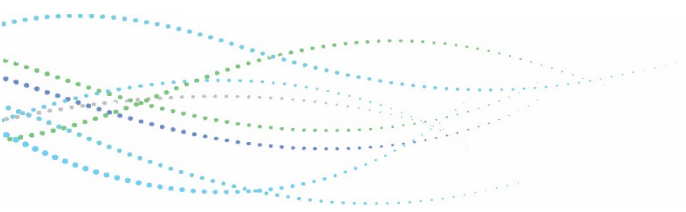
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	34.8%
ICU Level of Service	A
Analysis Period (min)	15



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## APPENDIX A: SYNCHRO OUTPUT SHEETS SCENARIO 2 - AM PEAK HOUR



Lanes, Volumes, Timings  
1: Fair Oaks Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	171	99	32	229	150	84	1082	20	84	873	61
Future Volume (vph)	79	171	99	32	229	150	84	1082	20	84	873	61
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	10	16	12	10	11	12	10	11	12
Storage Length (ft)	0		0	75		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.945			0.941			0.997			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1391	1224	0	1391	1673	0	1652	3377	0	1652	3340	0
Flt Permitted	0.146			0.567			0.950			0.950		
Satd. Flow (perm)	214	1224	0	830	1673	0	1652	3377	0	1652	3340	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33			32			2			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		427			901			375			717	
Travel Time (s)		9.7			20.5			8.5			16.3	
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.87	0.87	0.87	0.95	0.95	0.95
Bus Blockages (#/hr)	0	0	0	0	0	0	0	5	0	0	7	0
Parking (#/hr)		3	3									
Adj. Flow (vph)	86	186	108	34	241	158	97	1244	23	88	919	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	86	294	0	34	399	0	97	1267	0	88	983	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.35	1.57	1.24	1.35	1.06	1.24	1.09	1.06	1.00	1.09	1.06	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lanes, Volumes, Timings  
1: Fair Oaks Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases	3	8			4		1	6		5	2	
Permitted Phases	8			4								
Detector Phase	3	8		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	4.0	10.0		10.0	10.0		9.0	10.0		9.0	10.0	
Minimum Split (s)	9.5	28.5		27.0	27.0		13.5	25.0		13.5	25.0	
Total Split (s)	9.8	40.8		31.0	31.0		15.8	45.4		13.8	43.4	
Total Split (%)	9.8%	40.8%		31.0%	31.0%		15.8%	45.4%		13.8%	43.4%	
Maximum Green (s)	6.8	36.8		27.0	27.0		12.8	41.4		10.8	39.4	
Yellow Time (s)	3.0	3.5		3.5	3.5		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	0.5		0.5	0.5		0.0	0.0		0.0	0.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.5	3.0		3.0	3.0		1.5	4.0		1.5	4.0	
Minimum Gap (s)	2.5	3.0		3.0	3.0		1.5	3.0		1.5	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)		7.0		6.0	6.0			7.0			7.0	
Flash Dont Walk (s)		17.0		17.0	17.0			13.0			13.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	33.9	32.9		25.1	25.1		10.4	48.7		9.8	48.0	
Actuated g/C Ratio	0.34	0.33		0.25	0.25		0.10	0.49		0.10	0.48	
v/c Ratio	0.58	0.69		0.16	0.90		0.56	0.77		0.55	0.61	
Control Delay	37.3	34.1		30.4	57.7		58.4	24.1		56.2	23.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.3		0.0	0.0	
Total Delay	37.3	34.1		30.4	57.7		58.4	24.3		56.2	23.6	
LOS	D	C		C	E		E	C		E	C	
Approach Delay		34.8			55.6			26.7			26.2	
Approach LOS		C			E			C			C	
Queue Length 50th (ft)	36	135		17	222		60	380		55	260	
Queue Length 95th (ft)	71	229		43	#384		116	#476		105	353	
Internal Link Dist (ft)		347			821			295			637	
Turn Bay Length (ft)				75			150			150		
Base Capacity (vph)	152	471		224	475		211	1646		178	1608	
Starvation Cap Reductn	0	0		0	0		0	62		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.57	0.62		0.15	0.84		0.46	0.80		0.49	0.61	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow  
 Natural Cycle: 90

# Lanes, Volumes, Timings

## 1: Fair Oaks Ave & Mission St

12/28/2021

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 31.4

Intersection LOS: C

Intersection Capacity Utilization 81.8%








ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Fair Oaks Ave & Mission St

 Ø1	 Ø2 (R)	 Ø3	 Ø4
15.8 s	43.4 s	9.8 s	31 s
 Ø5	 Ø6 (R)	 Ø8	
13.8 s	45.4 s	40.8 s	

Lanes, Volumes, Timings  
2: Fremont Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	243	87	36	273	66	79	714	32	86	566	16
Future Volume (vph)	44	243	87	36	273	66	79	714	32	86	566	16
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	10	12	10	10	12	10	10	10	10	10	10
Storage Length (ft)	95		50	200		50	190		100	165		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>			0.850			0.850			0.850			0.850
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1391	1264	1151	1391	1249	1137	1391	1464	1244	1391	1464	1244
Fl <sub>t</sub> Permitted	0.371			0.468			0.307			0.206		
Satd. Flow (perm)	543	1264	1151	685	1249	1137	449	1464	1244	302	1464	1244
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			89			61			31			27
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		613			414			375			744	
Travel Time (s)		13.9			9.4			8.5			16.9	
Peak Hour Factor	0.87	0.87	0.87	0.80	0.80	0.80	0.92	0.92	0.92	0.89	0.89	0.89
Bus Blockages (#/hr)	0	2	2	0	2	2	0	0	0	0	0	0
Parking (#/hr)		6	6		8	8						
Adj. Flow (vph)	51	279	100	45	341	83	86	776	35	97	636	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	279	100	45	341	83	86	776	35	97	636	18
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.35	1.62	1.49	1.35	1.64	1.51	1.35	1.35	1.35	1.35	1.35	1.35
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
2: Fremont Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	18.5	18.5	18.5	18.5	18.5	18.5	20.5	20.5	20.5	20.5	20.5	20.5
Total Split (s)	21.1	21.1	21.1	21.1	21.1	21.1	38.9	38.9	38.9	38.9	38.9	38.9
Total Split (%)	35.2%	35.2%	35.2%	35.2%	35.2%	35.2%	64.8%	64.8%	64.8%	64.8%	64.8%	64.8%
Maximum Green (s)	16.6	16.6	16.6	16.6	16.6	16.6	33.4	33.4	33.4	33.4	33.4	33.4
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	2.0	2.0	2.0	4.5	4.5	4.5	2.0	2.0	2.0
Minimum Gap (s)	3.0	3.0	3.0	2.0	2.0	2.0	3.5	3.5	3.5	2.0	2.0	2.0
Time Before Reduce (s)	1.5	1.5	1.5	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	7.0	7.0	7.0	7.0	7.0	7.0	8.0	8.0	8.0	8.0	8.0	8.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	16.8	16.8	16.8	16.8	16.8	16.8	33.2	33.2	33.2	33.2	33.2	33.2
Actuated g/C Ratio	0.28	0.28	0.28	0.28	0.28	0.28	0.55	0.55	0.55	0.55	0.55	0.55
v/c Ratio	0.34	0.79	0.26	0.24	0.98	0.23	0.35	0.96	0.05	0.58	0.79	0.03
Control Delay	24.7	39.6	7.6	20.7	69.5	9.3	16.5	34.8	7.2	27.5	19.7	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0	3.0	0.0
Total Delay	24.7	39.6	7.6	20.7	69.5	9.3	16.5	36.6	7.2	27.5	22.8	2.2
LOS	C	D	A	C	E	A	B	D	A	C	C	A
Approach Delay		30.4			54.1			33.5			22.9	
Approach LOS		C			D			C			C	
Queue Length 50th (ft)	15	93	3	13	122	6	23	221	3	20	161	0
Queue Length 95th (ft)	42	#197	31	32	#224	28	m33	m#372	m6	#89	#346	6
Internal Link Dist (ft)		533			334			295			664	
Turn Bay Length (ft)	95		50	200		50	190		100	165		100
Base Capacity (vph)	152	353	385	191	349	361	249	814	706	168	814	704
Starvation Cap Reductn	0	0	0	0	0	0	0	11	0	0	0	0
Spillback Cap Reductn	0	0	6	0	0	0	0	0	0	0	97	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.79	0.26	0.24	0.98	0.23	0.35	0.97	0.05	0.58	0.89	0.03

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 18 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 90

# Lanes, Volumes, Timings

## 2: Fremont Ave & Mission St

12/28/2021

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 33.6

Intersection LOS: C

Intersection Capacity Utilization 87.3%

ICU Level of Service E




Analysis Period (min) 15

# 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.

Splits and Phases: 2: Fremont Ave & Mission St

 Ø2 (R)	 Ø4
38.9 s	21.1 s
 Ø6 (R)	 Ø8
38.9 s	21.1 s

Lanes, Volumes, Timings  
3: Meridian Ave & Mission St

12/28/2021



Lane Group	EBL2	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR2
Lane Configurations		↕			↑	↗		↖			↖	
Traffic Volume (vph)	6	320	49	6	306	40	60	139	16	15	100	3
Future Volume (vph)	6	320	49	6	306	40	60	139	16	15	100	3
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	11	12	12	11	12	12	13	12	12	13	12
Storage Length (ft)			0			65	0			0		
Storage Lanes			0			1	0			0		
Taper Length (ft)							25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.983				0.850		0.990			0.996	
Flt Protected		0.999			0.999			0.986			0.994	
Satd. Flow (prot)	0	1285	0	0	1333	1173	0	1582	0	0	1605	0
Flt Permitted		0.993			0.992			0.883			0.947	
Satd. Flow (perm)	0	1277	0	0	1324	1173	0	1417	0	0	1529	0
Right Turn on Red									No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		408			294			373			340	
Travel Time (s)		9.3			6.7			10.2			9.3	
Peak Hour Factor	0.90	0.90	0.90	0.82	0.82	0.82	0.80	0.80	0.80	0.80	0.80	0.80
Bus Blockages (#/hr)	0	2	2	0	0	0	0	0	0	0	0	0
Parking (#/hr)		6	6		4	4						
Adj. Flow (vph)	7	356	54	7	373	49	75	174	20	19	125	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	417	0	0	380	49	0	269	0	0	148	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.55	1.24	1.24	1.51	1.45	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
 3: Meridian Ave & Mission St

12/28/2021



Lane Group	NET	SWT
Lane Configurations	↑	↑
Traffic Volume (vph)	8	8
Future Volume (vph)	8	8
Ideal Flow (vphpl)	1600	1600
Lane Width (ft)	12	12
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Flt		
Flt Protected		
Satd. Flow (prot)	1569	1569
Flt Permitted		
Satd. Flow (perm)	1569	1569
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)	30	30
Link Distance (ft)	356	325
Travel Time (s)	8.1	7.4
Peak Hour Factor	0.92	0.92
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Adj. Flow (vph)	9	9
Shared Lane Traffic (%)		
Lane Group Flow (vph)	9	9
Enter Blocked Intersection	No	No
Lane Alignment	Left	Left
Median Width(ft)	0	0
Link Offset(ft)	0	0
Crosswalk Width(ft)	16	16
Two way Left Turn Lane		
Headway Factor	1.24	1.24
Turning Speed (mph)		
Number of Detectors	2	2
Detector Template	Thru	Thru
Leading Detector (ft)	100	100
Trailing Detector (ft)	0	0
Detector 1 Position(ft)	0	0
Detector 1 Size(ft)	6	6
Detector 1 Type	Cl+Ex	Cl+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(ft)	94	94
Detector 2 Size(ft)	6	6
Detector 2 Type	Cl+Ex	Cl+Ex
Detector 2 Channel		
Detector 2 Extend (s)	0.0	0.0

Lanes, Volumes, Timings  
3: Meridian Ave & Mission St

12/28/2021



Lane Group	EBL2	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR2
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	24.0	24.0		24.0	24.0	24.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	28.7	28.7		28.7	28.7	28.7	28.5	28.5		27.5	27.5	
Total Split (s)	48.6	48.6		48.6	48.6	48.6	31.4	31.4		31.4	31.4	
Total Split (%)	38.9%	38.9%		38.9%	38.9%	38.9%	25.1%	25.1%		25.1%	25.1%	
Maximum Green (s)	43.9	43.9		43.9	43.9	43.9	27.2	27.2		27.2	27.2	
Yellow Time (s)	3.2	3.2		3.2	3.2	3.2	3.2	3.2		3.2	3.2	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		4.7			4.7	4.7		4.2			4.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	3.5	3.5		3.5	3.5	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	12.0	12.0		16.0	16.0	16.0	19.0	19.0		18.0	18.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	
Act Effct Green (s)		34.7			34.7	34.7		28.3			28.3	
Actuated g/C Ratio		0.41			0.41	0.41		0.33			0.33	
v/c Ratio		0.81			0.71	0.10		0.57			0.29	
Control Delay		41.3			35.1	23.4		38.3			33.0	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		41.3			35.1	23.4		38.3			33.0	
LOS		D			D	C		D			C	
Approach Delay		41.3			33.8			38.3			33.0	
Approach LOS		D			C			D			C	
Queue Length 50th (ft)		126			109	10		73			36	
Queue Length 95th (ft)		#526			359	52		#297			150	
Internal Link Dist (ft)		328			214			293			260	
Turn Bay Length (ft)						65						
Base Capacity (vph)		750			777	689		516			556	
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			0.49	0.07		0.52			0.27	

Intersection Summary	
Area Type:	Other
Cycle Length:	125
Actuated Cycle Length:	85.5
Natural Cycle:	115
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.81
Intersection Signal Delay:	36.9
Intersection Capacity Utilization	106.5%
Intersection LOS:	D
ICU Level of Service	G



Lanes, Volumes, Timings  
 3: Meridian Ave & Mission St

12/28/2021



Lane Group	NET	SWT
Turn Type	NA	NA
Protected Phases	9	9
Permitted Phases		
Detector Phase	9	9
Switch Phase		
Minimum Initial (s)	40.5	40.5
Minimum Split (s)	45.0	45.0
Total Split (s)	45.0	45.0
Total Split (%)	36.0%	36.0%
Maximum Green (s)	40.5	40.5
Yellow Time (s)	3.5	3.5
All-Red Time (s)	1.0	1.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	4.5	4.5
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)	46.4	46.4
Actuated g/C Ratio	0.54	0.54
v/c Ratio	0.01	0.01
Control Delay	25.1	25.1
Queue Delay	0.0	0.0
Total Delay	25.1	25.1
LOS	C	C
Approach Delay	25.1	25.1
Approach LOS	C	C
Queue Length 50th (ft)	1	1
Queue Length 95th (ft)	18	18
Internal Link Dist (ft)	276	245
Turn Bay Length (ft)		
Base Capacity (vph)	850	850
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.01	0.01
<b>Intersection Summary</b>		

Lanes, Volumes, Timings  
 3: Meridian Ave & Mission St






12/28/2021

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Meridian Ave & Mission St

 Ø2	 Ø4	 Ø9
48.6 s	31.4 s	45 s
 Ø6	 Ø8	
48.6 s	31.4 s	

Lanes, Volumes, Timings  
4: Mission St & Orange Grove Ave

12/28/2021



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	279	263	256	110	130	185
Future Volume (vph)	279	263	256	110	130	185
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	11	12	11	11
Storage Length (ft)	0			0	100	100
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88
Frt			0.959			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1391	1279	1236	0	1441	2268
Flt Permitted	0.499				0.950	
Satd. Flow (perm)	731	1279	1236	0	1441	2268
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			53			231
Link Speed (mph)		30	30		30	
Link Distance (ft)		161	588		432	
Travel Time (s)		3.7	13.4		9.8	
Peak Hour Factor	0.80	0.80	0.87	0.87	0.80	0.80
Bus Blockages (#/hr)	0	2	0	0	0	0
Parking (#/hr)		10	10	10		
Adj. Flow (vph)	349	329	294	126	163	231
Shared Lane Traffic (%)						
Lane Group Flow (vph)	349	329	420	0	163	231
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.35	1.59	1.58	1.24	1.30	1.30
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	6	6		20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			

Lanes, Volumes, Timings  
4: Mission St & Orange Grove Ave

12/28/2021



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Detector Phase	4	4	8		6	6
Switch Phase						
Minimum Initial (s)	30.0	30.0	30.0		4.0	4.0
Minimum Split (s)	35.0	35.0	35.0		24.0	24.0
Total Split (s)	36.0	36.0	36.0		24.0	24.0
Total Split (%)	60.0%	60.0%	60.0%		40.0%	40.0%
Maximum Green (s)	31.0	31.0	31.0		20.0	20.0
Yellow Time (s)	4.0	4.0	4.0		3.0	3.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Min	Min	Min		None	None
Walk Time (s)			20.0		8.0	8.0
Flash Dont Walk (s)			10.0		12.0	12.0
Pedestrian Calls (#/hr)			0		0	0
Act Effct Green (s)	31.1	31.1	31.1		10.9	10.9
Actuated g/C Ratio	0.61	0.61	0.61		0.21	0.21
v/c Ratio	0.78	0.42	0.54		0.53	0.35
Control Delay	26.1	8.2	9.2		24.2	4.4
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	26.1	8.2	9.2		24.2	4.4
LOS	C	A	A		C	A
Approach Delay		17.4	9.2		12.6	
Approach LOS		B	A		B	
Queue Length 50th (ft)	65	43	51		43	0
Queue Length 95th (ft)	#199	94	138		77	15
Internal Link Dist (ft)		81	508		352	
Turn Bay Length (ft)					100	100
Base Capacity (vph)	445	779	773		566	1031
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	0.78	0.42	0.54		0.29	0.22

Intersection Summary	
Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	51.1
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.78
Intersection Signal Delay:	13.8
Intersection Capacity Utilization:	70.2%
Intersection LOS:	B
ICU Level of Service:	C

# Lanes, Volumes, Timings

## 4: Mission St & Orange Grove Ave

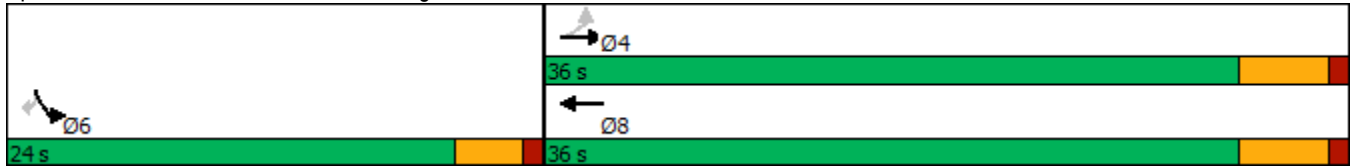
12/28/2021

Analysis Period (min) 15

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




















Queue shown is maximum after two cycles.

Splits and Phases: 4: Mission St & Orange Grove Ave



Lanes, Volumes, Timings  
5: Fair Oaks Ave & El Centro St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	26	26	5	25	2	76	1166	14	8	945	51
Future Volume (vph)	18	26	26	5	25	2	76	1166	14	8	945	51
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	11	12	10	11	12
Storage Length (ft)	0		0	0		0	75		0	75		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr <sub>t</sub>		0.950			0.990			0.998			0.992	
Fl <sub>t</sub> Protected		0.987			0.993		0.950			0.950		
Satd. Flow (prot)	0	1422	0	0	1491	0	1652	3414	0	1652	3394	0
Fl <sub>t</sub> Permitted		0.904			0.965		0.233			0.196		
Satd. Flow (perm)	0	1302	0	0	1449	0	405	3414	0	341	3394	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			3			2			9	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		420			404			386			375	
Travel Time (s)		11.5			11.0			8.8			8.5	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	23	33	33	6	31	3	83	1267	15	9	1005	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	89	0	0	40	0	83	1282	0	9	1059	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.30	1.24	1.24	1.30	1.24	1.09	1.04	1.00	1.09	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		1	6		5	2	

Lanes, Volumes, Timings  
5: Fair Oaks Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		4.0	10.0		4.0	10.0	
Minimum Split (s)	27.0	27.0		27.0	27.0		7.0	34.0		8.0	34.0	
Total Split (s)	29.0	29.0		29.0	29.0		9.0	63.0		8.0	62.0	
Total Split (%)	29.0%	29.0%		29.0%	29.0%		9.0%	63.0%		8.0%	62.0%	
Maximum Green (s)	24.5	24.5		24.5	24.5		6.0	59.0		4.0	58.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.0	0.0		1.0	0.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		3.0	4.0		4.0	4.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	2.0		2.5	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)	7.0	7.0		6.0	6.0			9.0			9.0	
Flash Dont Walk (s)	15.5	15.5		16.5	16.5			21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		11.5			11.5		83.5	81.8		79.6	76.3	
Actuated g/C Ratio		0.12			0.12		0.84	0.82		0.80	0.76	
v/c Ratio		0.51			0.24		0.20	0.46		0.03	0.41	
Control Delay		39.5			40.5		3.3	4.8		1.4	2.7	
Queue Delay		0.0			0.0		0.0	0.1		0.0	0.1	
Total Delay		39.5			40.5		3.3	5.0		1.4	2.9	
LOS		D			D		A	A		A	A	
Approach Delay		39.5			40.5			4.9			2.9	
Approach LOS		D			D			A			A	
Queue Length 50th (ft)		37			22		7	93		1	61	
Queue Length 95th (ft)		71			46		20	258		m1	47	
Internal Link Dist (ft)		340			324			306			295	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)		340			357		416	2792		338	2590	
Starvation Cap Reductn		0			0		0	0		0	570	
Spillback Cap Reductn		4			0		0	533		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.26			0.11		0.20	0.57		0.03	0.52	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 34 (34%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.51

Lanes, Volumes, Timings  
 5: Fair Oaks Ave & El Centro St

12/28/2021

Intersection Signal Delay: 5.8	Intersection LOS: A
Intersection Capacity Utilization 54.8%	ICU Level of Service A
Analysis Period (min) 15	

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

Splits and Phases: 5: Fair Oaks Ave & El Centro St

 Ø1	 Ø2 (R)	 Ø4
9 s	62 s	29 s
 Ø5	 Ø6 (R)	 Ø8
8 s	63 s	29 s



Lanes, Volumes, Timings  
6: Fremont Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Volume (vph)	19	86	43	16	69	24	45	782	8	5	670	14
Future Volume (vph)	19	86	43	16	69	24	45	782	8	5	670	14
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	10	12	12	10	12	12
Storage Length (ft)	0		0	0		0	75		0	75		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.961			0.970			0.998			0.997	
Flt Protected		0.994			0.993		0.950			0.950		
Satd. Flow (prot)	0	1548	0	0	1561	0	1391	1565	0	1391	1564	0
Flt Permitted		0.945			0.944		0.265			0.209		
Satd. Flow (perm)	0	1472	0	0	1484	0	388	1565	0	306	1564	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		34			24			1			3	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		632			417			438			375	
Travel Time (s)		17.2			11.4			10.0			8.5	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.94	0.94	0.94	0.91	0.91	0.91
Adj. Flow (vph)	24	108	54	20	86	30	48	832	9	5	736	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	186	0	0	136	0	48	841	0	5	751	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.35	1.24	1.24	1.35	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	

Lanes, Volumes, Timings  
6: Fremont Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	22.0	22.0		22.0	22.0		38.0	38.0		38.0	38.0	
Total Split (%)	36.7%	36.7%		36.7%	36.7%		63.3%	63.3%		63.3%	63.3%	
Maximum Green (s)	17.0	17.0		17.0	17.0		33.0	33.0		33.0	33.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.5	4.5		4.5	4.5		4.0	4.0		4.0	4.0	
Minimum Gap (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	1.5	1.5		1.5	1.5		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		C-Min	C-Min		C-Min	C-Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		12.8			12.8		37.2	37.2		37.2	37.2	
Actuated g/C Ratio		0.21			0.21		0.62	0.62		0.62	0.62	
v/c Ratio		0.55			0.41		0.20	0.87		0.03	0.77	
Control Delay		22.5			19.4		9.0	24.1		3.0	13.3	
Queue Delay		2.0			1.0		0.0	1.5		0.0	7.1	
Total Delay		24.5			20.4		9.0	25.6		3.0	20.4	
LOS		C			C		A	C		A	C	
Approach Delay		24.5			20.4			24.7			20.3	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)		49			35		6	212		0	228	
Queue Length 95th (ft)		80			61		26	#519		m1	m#419	
Internal Link Dist (ft)		552			337			358			295	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)		441			437		240	971		189	971	
Starvation Cap Reductn		0			0		0	0		0	179	
Spillback Cap Reductn		141			142		0	41		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.62			0.46		0.20	0.90		0.03	0.95	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 36 (60%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.87

Lanes, Volumes, Timings  
6: Fremont Ave & El Centro St

12/28/2021

















Intersection Signal Delay: 22.7 Intersection LOS: C  
Intersection Capacity Utilization 70.3% ICU Level of Service C  
Analysis Period (min) 15  
# 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.

Splits and Phases: 6: Fremont Ave & El Centro St



Lanes, Volumes, Timings  
7: Meridian Ave & El Centro St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	105	94	23	110	24	71	174	31	12	137	6
Future Volume (vph)	17	105	94	23	110	24	71	174	31	12	137	6
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	12	13	12	12	13	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.941			0.979			0.985			0.995	
Flt Protected		0.996			0.993			0.987			0.996	
Satd. Flow (prot)	0	1519	0	0	1576	0	0	1576	0	0	1606	0
Flt Permitted		0.996			0.993			0.987			0.996	
Satd. Flow (perm)	0	1519	0	0	1576	0	0	1576	0	0	1606	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1194			309			450			373	
Travel Time (s)		32.6			8.4			12.3			10.2	
Peak Hour Factor	0.81	0.81	0.81	0.80	0.80	0.80	0.80	0.80	0.80	0.86	0.86	0.86
Adj. Flow (vph)	21	130	116	29	138	30	89	218	39	14	159	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	267	0	0	197	0	0	346	0	0	180	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	54.4%						ICU Level of Service A					
Analysis Period (min)	15											

Lanes, Volumes, Timings  
8: orange Grove Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	↕
Traffic Volume (vph)	16	128	14	5	126	56	20	43	6	82	52	15
Future Volume (vph)	16	128	14	5	126	56	20	43	6	82	52	15
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	12	13	12	13	13	12
Storage Length (ft)	0		0	0		0	0		0	0		75
Storage Lanes	0		0	0		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.960			0.988			0.967	
Flt Protected		0.995			0.999			0.986		0.950		
Satd. Flow (prot)	0	1593	0	0	1555	0	0	1579	0	1540	1567	0
Flt Permitted		0.995			0.999			0.986		0.950		
Satd. Flow (perm)	0	1593	0	0	1555	0	0	1579	0	1540	1567	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		426			1194			450			376	
Travel Time (s)		11.6			32.6			12.3			10.3	
Peak Hour Factor	0.88	0.88	0.88	0.87	0.87	0.87	0.80	0.80	0.80	0.87	0.87	0.87
Adj. Flow (vph)	18	145	16	6	145	64	25	54	8	94	60	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	179	0	0	215	0	0	87	0	94	77	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.19	1.24	1.19	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	37.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
9: Pasadena Ave & El Centro St

12/28/2021























Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	2	29	0	35	1	95	70	64	55	1
Future Volume (vph)	1	0	2	29	0	35	1	95	70	64	55	1
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	12	14	12	14	12	11	14	12	11	12
Storage Length (ft)	0		0	0		0	0		75	100		0
Storage Lanes	0		0	1		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.899			0.865				0.850		0.998	
Flt Protected		0.988		0.950						0.950		
Satd. Flow (prot)	0	1393	0	1590	0	0	0	1516	1411	1490	1513	0
Flt Permitted		0.988		0.950						0.950		
Satd. Flow (perm)	0	1393	0	1590	0	0	0	1516	1411	1490	1513	0
Link Speed (mph)		30			25			30			30	
Link Distance (ft)		367			417			410			724	
Travel Time (s)		8.3			11.4			9.3			16.5	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	0
Adj. Flow (vph)	1	0	3	36	0	44	1	119	88	80	69	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	36	44	0	0	120	88	80	70	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		14			14			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.24	1.24	1.24	1.15	1.24	1.15	1.24	1.30	1.16	1.24	1.30	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization Err%	ICU Level of Service H
Analysis Period (min)	15

Lanes, Volumes, Timings  
11: Fremont Ave & Monterey Rd

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	564	236	89	559	39	151	720	32	40	620	31
Future Volume (vph)	90	564	236	89	559	39	151	720	32	40	620	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	12	12	10	12	12	10	10	16	10	10	16
Storage Length (ft)	150		0	125		0	100		50	100		40
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25		25			
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.956			0.990				0.850			0.850
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	3383	0	1652	3504	0	1391	1464	1511	1391	1464	1511
Fl <sub>t</sub> Permitted	0.230			0.222			0.264			0.172		
Satd. Flow (perm)	400	3383	0	386	3504	0	387	1464	1511	252	1464	1511
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		109			12				36			36
Link Speed (mph)		35			35			30				30
Link Distance (ft)		666			643			396				474
Travel Time (s)		13.0			12.5			9.0				10.8
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.91	0.91	0.91	0.93	0.93	0.93
Adj. Flow (vph)	113	705	295	111	699	49	166	791	35	43	667	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	113	1000	0	111	748	0	166	791	35	43	667	33
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.09	1.00	1.00	1.09	1.00	1.00	1.35	1.35	1.06	1.35	1.35	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			4			2				2

Lanes, Volumes, Timings  
11: Fremont Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			4			2		2	2		2
Detector Phase	4	4		4	4		2	2	2	2	2	2
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	23.0	23.0		23.0	23.0		37.0	37.0	37.0	37.0	37.0	37.0
Total Split (%)	38.3%	38.3%		38.3%	38.3%		61.7%	61.7%	61.7%	61.7%	61.7%	61.7%
Maximum Green (s)	18.0	18.0		18.0	18.0		32.0	32.0	32.0	32.0	32.0	32.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.5	4.5		4.5	4.5		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Gap (s)	3.5	3.5		3.5	3.5		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	1.5	1.5		1.5	1.5		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	18.0	18.0		18.0	18.0		32.0	32.0	32.0	32.0	32.0	32.0
Actuated g/C Ratio	0.30	0.30		0.30	0.30		0.53	0.53	0.53	0.53	0.53	0.53
v/c Ratio	0.94	0.92		0.97	0.71		0.81	1.01	0.04	0.32	0.86	0.04
Control Delay	97.4	33.3		105.3	22.7		45.6	53.6	2.8	16.0	25.9	2.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	97.4	33.3		105.3	22.7		45.6	53.6	2.8	16.0	25.9	2.7
LOS	F	C		F	C		D	D	A	B	C	A
Approach Delay		39.8			33.4			50.5			24.3	
Approach LOS		D			C			D			C	
Queue Length 50th (ft)	39	163		39	123		45	~271	0	8	188	0
Queue Length 95th (ft)	#107	#206		#108	151		#151	#501	10	32	#394	9
Internal Link Dist (ft)		586			563			316			394	
Turn Bay Length (ft)	150			125			100		50	100		40
Base Capacity (vph)	120	1091		115	1059		206	780	822	134	780	822
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.92		0.97	0.71		0.81	1.01	0.04	0.32	0.86	0.04

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 36 (60%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.01



# Lanes, Volumes, Timings

## 11: Fremont Ave & Monterey Rd

12/28/2021

Intersection Signal Delay: 38.1 Intersection LOS: D

Intersection Capacity Utilization 93.4% ICU Level of Service F

Analysis Period (min) 15

~ 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.

Splits and Phases: 11: Fremont Ave & Monterey Rd



Lanes, Volumes, Timings  
12: Meridian Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	911	194	31	795	15	304	219	48	70	158	16
Future Volume (vph)	36	911	194	31	795	15	304	219	48	70	158	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	12	10	11	12	12	13	12	12	13	12
Storage Length (ft)	225		0	175		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.974			0.997			0.989			0.991	
Fl <sub>t</sub> Protected	0.950			0.950				0.974			0.986	
Satd. Flow (prot)	1652	3332	0	1652	3411	0	0	1561	0	0	1584	0
Fl <sub>t</sub> Permitted	0.191			0.133				0.680			0.792	
Satd. Flow (perm)	332	3332	0	231	3411	0	0	1090	0	0	1272	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		52			4			9			7	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1211			592			371			479	
Travel Time (s)		23.6			11.5			10.1			13.1	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.95	0.95	0.95	0.91	0.91	0.91
Adj. Flow (vph)	45	1139	243	39	994	19	320	231	51	77	174	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	45	1382	0	39	1013	0	0	602	0	0	269	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.00	1.09	1.04	1.00	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	

Lanes, Volumes, Timings  
 12: Meridian Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	30.0	30.0		30.0	30.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	35.0	35.0		35.0	35.0		24.5	24.5		24.5	24.5	
Total Split (s)	35.0	35.0		35.0	35.0		30.0	30.0		30.0	30.0	
Total Split (%)	53.8%	53.8%		53.8%	53.8%		46.2%	46.2%		46.2%	46.2%	
Maximum Green (s)	30.0	30.0		30.0	30.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0			0.0		
Total Lost Time (s)	5.0	5.0		5.0	5.0		4.0			4.0		
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	30.0	30.0		30.0	30.0		26.0			26.0		
Actuated g/C Ratio	0.46	0.46		0.46	0.46		0.40			0.40		
v/c Ratio	0.29	0.88		0.37	0.64		1.37			0.52		
Control Delay	17.4	24.0		23.6	15.7		200.9			19.0		
Queue Delay	0.0	0.0		0.0	0.0		0.0			0.0		
Total Delay	17.4	24.0		23.6	15.7		200.9			19.0		
LOS	B	C		C	B		F			B		
Approach Delay	23.8			16.0			200.9			19.0		
Approach LOS	C			B			F			B		
Queue Length 50th (ft)	11	238		10	152		~325			76		
Queue Length 95th (ft)	30	267		31	176		#509			143		
Internal Link Dist (ft)	1131			512			291			399		
Turn Bay Length (ft)	225			175								
Base Capacity (vph)	153	1565		106	1576		441			513		
Starvation Cap Reductn	0	0		0	0		0			0		
Spillback Cap Reductn	0	0		0	0		0			0		
Storage Cap Reductn	0	0		0	0		0			0		
Reduced v/c Ratio	0.29	0.88		0.37	0.64		1.37			0.52		

Intersection Summary

Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	65
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.37
Intersection Signal Delay:	52.8
Intersection LOS:	D
Intersection Capacity Utilization:	95.0%
ICU Level of Service:	F
Analysis Period (min):	15

~ Volume exceeds capacity, queue is theoretically infinite.

Lanes, Volumes, Timings  
12: Meridian Ave & Monterey Rd

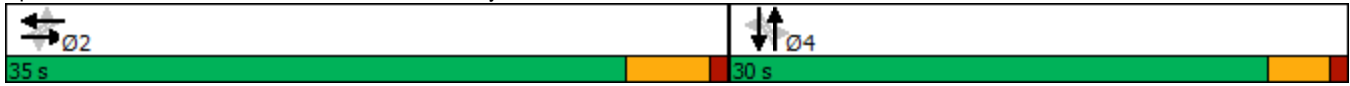
12/28/2021

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 12: Meridian Ave & Monterey Rd



Lanes, Volumes, Timings  
 13: Orange Grove Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	1041	2	7	978	130	1	3	6	94	1	12
Future Volume (vph)	17	1041	2	7	978	130	1	3	6	94	1	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	12	10	11	12	12	13	12	12	13	12
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.982			0.917				0.985
Fl <sub>t</sub> Protected	0.950			0.950				0.996				0.958
Satd. Flow (prot)	1652	3421	0	1652	3360	0	0	1480	0	0	1530	0
Fl <sub>t</sub> Permitted	0.173			0.199				0.996				0.958
Satd. Flow (perm)	301	3421	0	346	3360	0	0	1480	0	0	1530	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					15			8				6
Link Speed (mph)		35			35			25				25
Link Distance (ft)		429			1211			316				446
Travel Time (s)		8.4			23.6			8.6				12.2
Peak Hour Factor	0.87	0.87	0.87	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	20	1197	2	8	1151	153	1	4	8	118	1	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	1199	0	8	1304	0	0	13	0	0	134	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.00	1.09	1.04	1.00	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases		2			6		3	3		4		4

Lanes, Volumes, Timings  
 13: Orange Grove Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2				6							
Detector Phase	2	2			6	6	3	3			4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0	5.0	5.0	5.0			5.0	5.0
Minimum Split (s)	24.0	24.0			24.0	24.0	31.5	31.5			31.5	31.5
Total Split (s)	36.0	36.0			36.0	36.0	32.0	32.0			32.0	32.0
Total Split (%)	36.0%	36.0%			36.0%	36.0%	32.0%	32.0%			32.0%	32.0%
Maximum Green (s)	31.0	31.0			31.0	31.0	27.5	27.5			27.5	27.5
Yellow Time (s)	4.0	4.0			4.0	4.0	3.5	3.5			3.5	3.5
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0			1.0	1.0
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0				0.0	
Total Lost Time (s)	5.0	5.0			5.0	5.0	4.5				4.5	
Lead/Lag							Lead	Lead			Lag	Lag
Lead-Lag Optimize?							Yes	Yes			Yes	Yes
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode	C-Min	C-Min			C-Min	C-Min	None	None			None	None
Walk Time (s)	7.0	7.0			7.0	7.0	7.0	7.0			7.0	7.0
Flash Dont Walk (s)	12.0	12.0			12.0	12.0	20.0	20.0			20.0	20.0
Pedestrian Calls (#/hr)	0	0			0	0	0	0			0	0
Act Effct Green (s)	74.4	74.4			74.4	74.4	6.2				13.7	
Actuated g/C Ratio	0.74	0.74			0.74	0.74	0.06				0.14	
v/c Ratio	0.09	0.47			0.03	0.52	0.13				0.62	
Control Delay	7.4	7.1			6.7	7.6	32.4				50.9	
Queue Delay	0.0	0.0			0.0	0.0	0.0				0.0	
Total Delay	7.4	7.1			6.7	7.6	32.4				50.9	
LOS	A	A			A	A	C				D	
Approach Delay	7.1				7.6		32.4				50.9	
Approach LOS	A				A		C				D	
Queue Length 50th (ft)	3	116			1	132	3				78	
Queue Length 95th (ft)	17	283			8	308	19				114	
Internal Link Dist (ft)	349				1131		236				366	
Turn Bay Length (ft)	75				75							
Base Capacity (vph)	223	2543			257	2502	412				425	
Starvation Cap Reductn	0	0			0	0	0				0	
Spillback Cap Reductn	0	0			0	0	0				0	
Storage Cap Reductn	0	0			0	0	0				0	
Reduced v/c Ratio	0.09	0.47			0.03	0.52	0.03				0.32	





Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.62
Intersection Signal Delay:	9.7
Intersection LOS:	A
Intersection Capacity Utilization:	52.9%
ICU Level of Service:	A
Analysis Period (min):	15

Lanes, Volumes, Timings  
 13: Orange Grove Ave & Monterey Rd

12/28/2021

Splits and Phases: 13: Orange Grove Ave & Monterey Rd

 Ø2 (R)	 Ø3	 Ø4
36 s	32 s	32 s
 Ø5 (R)		
36 s		

Lanes, Volumes, Timings  
 16: Meridian Ave & Hope St

12/28/2021



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	3	53	169	16	60	115
Future Volume (vph)	3	53	169	16	60	115
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	13	12	12	13
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.873		0.988			
Flt Protected	0.997					0.983
Satd. Flow (prot)	1365	0	1601	0	0	1593
Flt Permitted	0.997					0.983
Satd. Flow (perm)	1365	0	1601	0	0	1593
Link Speed (mph)	25		25			25
Link Distance (ft)	299		340			399
Travel Time (s)	8.2		9.3			10.9
Peak Hour Factor	0.80	0.80	0.80	0.80	0.83	0.83
Adj. Flow (vph)	4	66	211	20	72	139
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	0	231	0	0	211
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.24	1.24	1.19	1.24	1.24	1.19
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free


















Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	36.9%
Analysis Period (min)	15
	ICU Level of Service A



Lanes, Volumes, Timings  
17: Fremont Ave & Grevelia St

12/28/2021

												
Lane Group	EBL2	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	NET
Lane Configurations												
Traffic Volume (vph)	5	7	13	2	10	7	8	762	2	2	612	8
Future Volume (vph)	5	7	13	2	10	7	8	762	2	2	612	8
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	12	12	12	12	12	14	12	12	14	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.930			0.951							
Flt Protected		0.990			0.994			0.999				
Satd. Flow (prot)	0	1444	0	0	1483	0	0	1672	0	0	1673	1569
Flt Permitted		0.921			0.952			0.993			0.999	
Satd. Flow (perm)	0	1344	0	0	1420	0	0	1661	0	0	1672	1569
Right Turn on Red	Yes											
Satd. Flow (RTOR)	62											
Link Speed (mph)	25				25				30		30	
Link Distance (ft)	1201				446				255		617	
Travel Time (s)	32.8				12.2				5.8		14.0	
Peak Hour Factor	0.88	0.88	0.88	0.80	0.80	0.80	0.91	0.91	0.91	0.82	0.82	0.92
Adj. Flow (vph)	6	8	15	3	13	9	9	837	2	2	746	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	29	0	0	25	0	0	848	0	0	748	9
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Left
Median Width(ft)	0				0				0		0	
Link Offset(ft)	0				0				0		0	
Crosswalk Width(ft)	16				16				16		16	
Two way Left Turn Lane												
Headway Factor	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.15	1.24	1.24	1.15	1.24
Turning Speed (mph)	15		9		15		9		15		15	
Number of Detectors	1	2		1	2		1	2		1	2	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Thru
Leading Detector (ft)	20	100		20	100		20	100		20	100	100
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	6
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)	94				94				94		94	
Detector 2 Size(ft)	6				6				6		6	
Detector 2 Type	Cl+Ex				Cl+Ex				Cl+Ex		Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0				0.0				0.0		0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	NA
Protected Phases	4				8				2		6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	9
Switch Phase												

Lanes, Volumes, Timings  
 17: Fremont Ave & Grevelia St

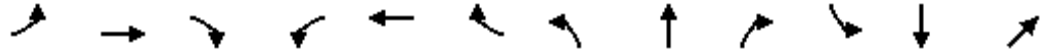
12/28/2021



Lane Group	SWT
Lane Configurations	↑
Traffic Volume (vph)	8
Future Volume (vph)	8
Ideal Flow (vphpl)	1600
Lane Width (ft)	12
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	1569
Flt Permitted	
Satd. Flow (perm)	1569
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	30
Link Distance (ft)	405
Travel Time (s)	9.2
Peak Hour Factor	0.92
Adj. Flow (vph)	9
Shared Lane Traffic (%)	
Lane Group Flow (vph)	9
Enter Blocked Intersection	No
Lane Alignment	Left
Median Width(ft)	0
Link Offset(ft)	0
Crosswalk Width(ft)	16
Two way Left Turn Lane	
Headway Factor	1.24
Turning Speed (mph)	
Number of Detectors	2
Detector Template	Thru
Leading Detector (ft)	100
Trailing Detector (ft)	0
Detector 1 Position(ft)	0
Detector 1 Size(ft)	6
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	94
Detector 2 Size(ft)	6
Detector 2 Type	Cl+Ex
Detector 2 Channel	
Detector 2 Extend (s)	0.0
Turn Type	NA
Protected Phases	9
Permitted Phases	
Detector Phase	9
Switch Phase	

Lanes, Volumes, Timings  
17: Fremont Ave & Grevelia St

12/28/2021



Lane Group	EBL2	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	NET
Minimum Initial (s)	10.0	10.0		6.0	6.0		40.0	40.0		40.0	40.0	40.5
Minimum Split (s)	20.0	20.0		11.0	11.0		45.0	45.0		45.0	45.0	45.0
Total Split (s)	25.0	25.0		25.0	25.0		45.0	45.0		45.0	45.0	45.0
Total Split (%)	21.7%	21.7%		21.7%	21.7%		39.1%	39.1%		39.1%	39.1%	39.1%
Maximum Green (s)	20.0	20.0		20.0	20.0		40.0	40.0		40.0	40.0	40.5
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		5.0			5.0			5.0			5.0	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.5	3.5		3.5	3.5		0.2	0.2		0.2	0.2	3.0
Recall Mode	None	None		None	None		Max	Max		Max	Max	None
Walk Time (s)	7.0	7.0								7.0	7.0	
Flash Dont Walk (s)	8.0	8.0								7.0	7.0	
Pedestrian Calls (#/hr)	0	0								0	0	
Act Effct Green (s)		10.9			8.3			53.5			53.5	45.1
Actuated g/C Ratio		0.16			0.13			0.81			0.81	0.68
v/c Ratio		0.13			0.14			0.63			0.55	0.01
Control Delay		31.7			32.8			14.4			14.1	11.6
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		31.7			32.8			14.4			14.1	11.6
LOS		C			C			B			B	B
Approach Delay		31.7			32.8			14.4			14.1	11.6
Approach LOS		C			C			B			B	B
Queue Length 50th (ft)		6			6			0			0	0
Queue Length 95th (ft)		46			37			#946			#725	14
Internal Link Dist (ft)		1121			366			175			537	229
Turn Bay Length (ft)												
Base Capacity (vph)		439			464			1355			1352	1069
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		0.07			0.05			0.63			0.55	0.01






Intersection Summary

Area Type: Other  
 Cycle Length: 115  
 Actuated Cycle Length: 66.2  
 Natural Cycle: 130  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.63  
 Intersection Signal Delay: 14.8      Intersection LOS: B  
 Intersection Capacity Utilization 108.8%      ICU Level of Service G  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Lanes, Volumes, Timings  
 17: Fremont Ave & Grevelia St

12/28/2021

Splits and Phases: 17: Fremont Ave & Grevelia St



















 Ø2 45 s	 Ø4 25 s	 Ø9 45 s
 Ø6 45 s	 Ø8 25 s	



Lane Group	SWT
Minimum Initial (s)	40.5
Minimum Split (s)	45.0
Total Split (s)	45.0
Total Split (%)	39.1%
Maximum Green (s)	40.5
Yellow Time (s)	3.5
All-Red Time (s)	1.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.5
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	45.1
Actuated g/C Ratio	0.68
v/c Ratio	0.01
Control Delay	11.6
Queue Delay	0.0
Total Delay	11.6
LOS	B
Approach Delay	11.6
Approach LOS	B
Queue Length 50th (ft)	0
Queue Length 95th (ft)	14
Internal Link Dist (ft)	325
Turn Bay Length (ft)	
Base Capacity (vph)	1069
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.01
<b>Intersection Summary</b>	

















Lanes, Volumes, Timings  
18: Meridian Ave & Grevelia St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	18	13	2	14	2	15	146	5	2	99	6
Future Volume (vph)	5	18	13	2	14	2	15	146	5	2	99	6
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	12	10	10	12	10	10
Storage Length (ft)	0		0	0		0	0		100	0		100
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.952			0.983				0.850			0.850
Fl <sub>t</sub> Protected		0.993			0.994			0.995			0.999	
Satd. Flow (prot)	0	1532	0	0	1584	0	0	1457	1244	0	1463	1244
Fl <sub>t</sub> Permitted		0.993			0.994			0.995			0.999	
Satd. Flow (perm)	0	1532	0	0	1584	0	0	1457	1244	0	1463	1244
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		441			1201			251			624	
Travel Time (s)		12.0			32.8			6.8			17.0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.84	0.84	0.84	0.80	0.80	0.80
Adj. Flow (vph)	6	23	16	3	18	3	18	174	6	3	124	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	45	0	0	24	0	0	192	6	0	127	8
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.35	1.35	1.24	1.35	1.35
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	26.9%						ICU Level of Service A					
Analysis Period (min)	15											

Lanes, Volumes, Timings  
19: Diamond Ave & Mission St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	345	6	15	326	1	26	0	46	0	0	0
Future Volume (vph)	0	345	6	15	326	1	26	0	46	0	0	0
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	11	12	12	11	12	10	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998						0.914				
Flt Protected					0.998			0.982				
Satd. Flow (prot)	0	1362	0	0	1339	0	0	1408	0	0	1569	0
Flt Permitted					0.998			0.982				
Satd. Flow (perm)	0	1362	0	0	1339	0	0	1408	0	0	1569	0
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		294			324			374			223	
Travel Time (s)		6.7			7.4			10.2			5.1	
Peak Hour Factor	0.84	0.84	0.84	0.88	0.88	0.88	0.87	0.87	0.87	0.25	0.25	0.25
Parking (#/hr)		0	0		3	3						
Adj. Flow (vph)	0	411	7	17	370	1	30	0	53	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	418	0	0	388	0	0	83	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.47	1.24	1.24	1.50	1.24	1.35	1.24	1.24	1.24	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	46.7%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
20: Fairview Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	14	349	28	21	323	24	3	5	13	12	19	16
Future Volume (vph)	14	349	28	21	323	24	3	5	13	12	19	16
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	11	12	12	11	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.991			0.917			0.954	
Flt Protected		0.998			0.997			0.992			0.987	
Satd. Flow (prot)	0	1296	0	0	1273	0	0	1427	0	0	1477	0
Flt Permitted		0.998			0.997			0.992			0.987	
Satd. Flow (perm)	0	1296	0	0	1273	0	0	1427	0	0	1477	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		324			613			381			228	
Travel Time (s)		7.4			13.9			10.4			6.2	
Peak Hour Factor	0.94	0.94	0.94	0.86	0.86	0.86	0.80	0.80	0.80	0.80	0.80	0.80
Parking (#/hr)		7	7		10	10						
Adj. Flow (vph)	15	371	30	24	376	28	4	6	16	15	24	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	416	0	0	428	0	0	26	0	0	59	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.55	1.24	1.24	1.58	1.24	1.24	1.24	1.24	1.24	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	44.1%
Analysis Period (min)	15
	ICU Level of Service A



Lanes, Volumes, Timings  
21: Pasadena Ave & Mission St

12/28/2021



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	210	23	97	141	29	102
Future Volume (vph)	210	23	97	141	29	102
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	13	13	12	12	11	14
Storage Length (ft)		0	0		100	100
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1621	1378	1490	1569	1441	2493
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1621	1378	1490	1569	1441	2493
Link Speed (mph)	30			30	30	
Link Distance (ft)	267			367	724	
Travel Time (s)	6.1			8.3	16.5	
Peak Hour Factor	0.88	0.88	0.80	0.80	0.80	0.80
Bus Blockages (#/hr)	0	0	0	0	0	2
Adj. Flow (vph)	239	26	121	176	36	128
Shared Lane Traffic (%)						
Lane Group Flow (vph)	239	26	121	176	36	128
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane					Yes	
Headway Factor	1.19	1.19	1.24	1.24	1.30	1.15
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Free	Free	

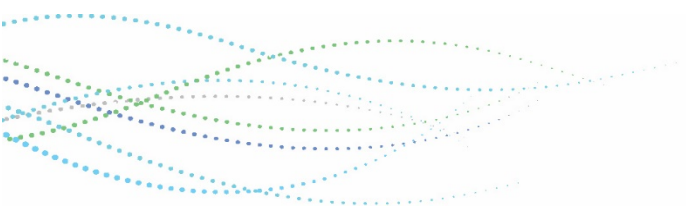
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	32.8%
ICU Level of Service	A
Analysis Period (min)	15



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## APPENDIX A: SYNCHRO OUTPUT SHEETS SCENARIO 2 - PM PEAK HOUR



Lanes, Volumes, Timings  
1: Fair Oaks Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	260	101	45	240	126	79	935	51	131	1236	95
Future Volume (vph)	109	260	101	45	240	126	79	935	51	131	1236	95
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	10	16	12	10	11	12	10	11	12
Storage Length (ft)	0		0	75		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr <sub>t</sub>		0.958			0.948			0.992			0.989	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1391	1241	0	1391	1685	0	1652	3360	0	1652	3336	0
Fl <sub>t</sub> Permitted	0.152			0.393			0.950			0.950		
Satd. Flow (perm)	223	1241	0	575	1685	0	1652	3360	0	1652	3336	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			25			7			10	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		427			901			375			717	
Travel Time (s)		9.7			20.5			8.5			16.3	
Peak Hour Factor	0.86	0.86	0.86	0.96	0.96	0.96	0.95	0.95	0.95	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	5	0	0	7	0
Parking (#/hr)		3	3									
Adj. Flow (vph)	127	302	117	47	250	131	83	984	54	142	1343	103
Shared Lane Traffic (%)												
Lane Group Flow (vph)	127	419	0	47	381	0	83	1038	0	142	1446	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.35	1.57	1.24	1.35	1.06	1.24	1.09	1.06	1.00	1.09	1.06	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
1: Fair Oaks Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases	3	8			4		1	6		5	2	
Permitted Phases	8			4								
Detector Phase	3	8		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	4.0	10.0		10.0	10.0		9.0	10.0		9.0	10.0	
Minimum Split (s)	8.5	28.5		27.0	27.0		13.5	25.0		13.5	25.0	
Total Split (s)	10.4	38.4		28.0	28.0		13.6	46.0		15.6	48.0	
Total Split (%)	10.4%	38.4%		28.0%	28.0%		13.6%	46.0%		15.6%	48.0%	
Maximum Green (s)	7.4	34.4		24.0	24.0		10.6	42.0		12.6	44.0	
Yellow Time (s)	3.0	3.5		3.5	3.5		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	0.5		0.5	0.5		0.0	0.0		0.0	0.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.5	3.0		3.0	3.0		1.5	4.0		1.5	4.0	
Minimum Gap (s)	2.5	3.0		3.0	3.0		1.5	3.0		1.5	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)		7.0		6.0	6.0			7.0			7.0	
Flash Dont Walk (s)		17.0		17.0	17.0			13.0			13.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	34.8	33.8		23.2	23.2		9.6	43.7		11.5	48.0	
Actuated g/C Ratio	0.35	0.34		0.23	0.23		0.10	0.44		0.12	0.48	
v/c Ratio	0.77	0.97		0.35	0.93		0.52	0.70		0.75	0.90	
Control Delay	55.1	68.6		40.3	65.7		65.4	22.3		67.0	34.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.5		0.0	0.0	
Total Delay	55.1	68.6		40.3	65.7		65.4	22.8		67.0	34.3	
LOS	E	E		D	E		E	C		E	C	
Approach Delay		65.5			62.9			26.0			37.2	
Approach LOS		E			E			C			D	
Queue Length 50th (ft)	57	248		25	222		52	298		88	447	
Queue Length 95th (ft)	#120	#411		62	#397		m107	368		#173	#633	
Internal Link Dist (ft)		347			821			295			637	
Turn Bay Length (ft)				75			150			150		
Base Capacity (vph)	165	440		138	423		175	1473		208	1605	
Starvation Cap Reductn	0	0		0	0		0	137		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.77	0.95		0.34	0.90		0.47	0.78		0.68	0.90	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow  
 Natural Cycle: 90

# Lanes, Volumes, Timings

## 1: Fair Oaks Ave & Mission St

12/28/2021

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 41.0

Intersection LOS: D

Intersection Capacity Utilization 89.9%

ICU Level of Service E







Analysis Period (min) 15

# 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.

Splits and Phases: 1: Fair Oaks Ave & Mission St

 Ø1	 Ø2 (R)	 Ø3	 Ø4
13.6 s	48 s	10.4 s	28 s
 Ø5	 Ø6 (R)	 Ø8	
15.6 s	46 s	38.4 s	

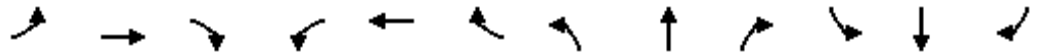
Lanes, Volumes, Timings  
2: Fremont Ave & Mission St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	329	125	46	320	74	102	708	26	115	588	28
Future Volume (vph)	38	329	125	46	320	74	102	708	26	115	588	28
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	10	12	10	10	12	10	10	10	10	10	10
Storage Length (ft)	95		50	200		50	190		100	165		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>			0.850			0.850			0.850			0.850
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1391	1264	1151	1391	1249	1137	1391	1464	1244	1391	1464	1244
Fl <sub>t</sub> Permitted	0.396			0.342			0.282			0.195		
Satd. Flow (perm)	580	1264	1151	501	1249	1137	413	1464	1244	285	1464	1244
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			97			59			27			31
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		613			414			375			744	
Travel Time (s)		13.9			9.4			8.5			16.9	
Peak Hour Factor	0.88	0.88	0.88	0.95	0.95	0.95	0.92	0.92	0.92	0.90	0.90	0.90
Bus Blockages (#/hr)	0	2	2	0	2	2	0	0	0	0	0	0
Parking (#/hr)		6	6		8	8						
Adj. Flow (vph)	43	374	142	48	337	78	111	770	28	128	653	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	374	142	48	337	78	111	770	28	128	653	31
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.35	1.62	1.49	1.35	1.64	1.51	1.35	1.35	1.35	1.35	1.35	1.35
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
2: Fremont Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	18.5	18.5	18.5	18.5	18.5	18.5	20.5	20.5	20.5	20.5	20.5	20.5
Total Split (s)	22.4	22.4	22.4	22.4	22.4	22.4	37.6	37.6	37.6	37.6	37.6	37.6
Total Split (%)	37.3%	37.3%	37.3%	37.3%	37.3%	37.3%	62.7%	62.7%	62.7%	62.7%	62.7%	62.7%
Maximum Green (s)	17.9	17.9	17.9	17.9	17.9	17.9	32.1	32.1	32.1	32.1	32.1	32.1
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	2.0	2.0	2.0	4.5	4.5	4.5	2.0	2.0	2.0
Minimum Gap (s)	3.0	3.0	3.0	2.0	2.0	2.0	3.5	3.5	3.5	2.0	2.0	2.0
Time Before Reduce (s)	1.5	1.5	1.5	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	7.0	7.0	7.0	7.0	7.0	7.0	8.0	8.0	8.0	8.0	8.0	8.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	17.9	17.9	17.9	17.9	17.9	17.9	32.1	32.1	32.1	32.1	32.1	32.1
Actuated g/C Ratio	0.30	0.30	0.30	0.30	0.30	0.30	0.54	0.54	0.54	0.54	0.54	0.54
v/c Ratio	0.25	0.99	0.35	0.32	0.91	0.21	0.50	0.98	0.04	0.84	0.83	0.05
Control Delay	20.5	70.3	9.4	23.5	52.5	8.4	7.9	29.1	0.9	60.9	24.1	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3	0.0	0.0	2.3	0.0
Total Delay	20.5	70.3	9.4	23.5	52.5	8.4	7.9	33.3	0.9	60.9	26.4	3.1
LOS	C	E	A	C	D	A	A	C	A	E	C	A
Approach Delay		51.0			42.0			29.2			30.9	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	12	133	12	13	116	5	6	43	0	35	179	0
Queue Length 95th (ft)	35	#278	47	41	#255	32	m10	m#350	m1	#131	#381	10
Internal Link Dist (ft)		533			334			295			664	
Turn Bay Length (ft)	95		50	200		50	190		100	165		100
Base Capacity (vph)	173	377	411	149	372	380	220	783	678	152	783	679
Starvation Cap Reductn	0	0	0	0	0	0	0	15	0	0	0	0
Spillback Cap Reductn	0	0	3	0	0	0	0	0	0	0	53	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.99	0.35	0.32	0.91	0.21	0.50	1.00	0.04	0.84	0.89	0.05

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 9 (15%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 80

# Lanes, Volumes, Timings

## 2: Fremont Ave & Mission St

12/28/2021

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 36.3

Intersection LOS: D

Intersection Capacity Utilization 92.4%

ICU Level of Service F

Analysis Period (min) 15

# 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.

Splits and Phases: 2: Fremont Ave & Mission St





Lanes, Volumes, Timings  
 3: Meridian Ave & Mission St

12/28/2021



Lane Group	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR2	NET
Lane Configurations	↕			↑	↗		↑			↑		↑
Traffic Volume (vph)	474	46	6	389	32	41	97	35	39	107	13	8
Future Volume (vph)	474	46	6	389	32	41	97	35	39	107	13	8
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	11	12	12	11	12	12	13	12	12	13	12	12
Storage Length (ft)		0			65	0			0			
Storage Lanes		0			1	0			0			
Taper Length (ft)						25			25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.988				0.850		0.972			0.989		
Flt Protected				0.999			0.988			0.988		
Satd. Flow (prot)	1293	0	0	1333	1173	0	1557	0	0	1584	0	1569
Flt Permitted				0.992			0.866			0.844		
Satd. Flow (perm)	1293	0	0	1324	1173	0	1364	0	0	1353	0	1569
Right Turn on Red								No			No	
Satd. Flow (RTOR)												
Link Speed (mph)	30			30			25			25		30
Link Distance (ft)	408			294			373			340		356
Travel Time (s)	9.3			6.7			10.2			9.3		8.1
Peak Hour Factor	0.96	0.96	0.88	0.88	0.88	0.80	0.80	0.80	0.86	0.86	0.86	0.92
Bus Blockages (#/hr)	2	2	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)	6	6		4	4							
Adj. Flow (vph)	494	48	7	442	36	51	121	44	45	124	15	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	542	0	0	449	36	0	216	0	0	184	0	9
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left
Median Width(ft)	0			0			0			0		0
Link Offset(ft)	0			0			0			0		0
Crosswalk Width(ft)	16			16			16			16		16
Two way Left Turn Lane												
Headway Factor	1.55	1.24	1.24	1.51	1.45	1.24	1.19	1.24	1.24	1.19	1.24	1.24
Turning Speed (mph)		9	15		9	15		9	15		9	
Number of Detectors	2		1	2	1	1	2		1	2		2
Detector Template	Thru		Left	Thru	Right	Left	Thru		Left	Thru		Thru
Leading Detector (ft)	100		20	100	20	20	100		20	100		100
Trailing Detector (ft)	0		0	0	0	0	0		0	0		0
Detector 1 Position(ft)	0		0	0	0	0	0		0	0		0
Detector 1 Size(ft)	6		20	6	20	20	6		20	6		6
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Detector 2 Position(ft)	94			94			94			94		94
Detector 2 Size(ft)	6			6			6			6		6
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		0.0

Lanes, Volumes, Timings  
 3: Meridian Ave & Mission St

12/28/2021



Lane Group	SWT
Lane Configurations	↑
Traffic Volume (vph)	8
Future Volume (vph)	8
Ideal Flow (vphpl)	1600
Lane Width (ft)	12
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	1.00
Flt	
Flt Protected	
Satd. Flow (prot)	1569
Flt Permitted	
Satd. Flow (perm)	1569
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	30
Link Distance (ft)	325
Travel Time (s)	7.4
Peak Hour Factor	0.92
Bus Blockages (#/hr)	0
Parking (#/hr)	
Adj. Flow (vph)	9
Shared Lane Traffic (%)	
Lane Group Flow (vph)	9
Enter Blocked Intersection	No
Lane Alignment	Left
Median Width(ft)	0
Link Offset(ft)	0
Crosswalk Width(ft)	16
Two way Left Turn Lane	
Headway Factor	1.24
Turning Speed (mph)	
Number of Detectors	2
Detector Template	Thru
Leading Detector (ft)	100
Trailing Detector (ft)	0
Detector 1 Position(ft)	0
Detector 1 Size(ft)	6
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	94
Detector 2 Size(ft)	6
Detector 2 Type	Cl+Ex
Detector 2 Channel	
Detector 2 Extend (s)	0.0

Lanes, Volumes, Timings  
3: Meridian Ave & Mission St

12/28/2021



Lane Group	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR2	NET
Turn Type	NA		Perm	NA	Perm	Perm	NA		Perm	NA		NA
Protected Phases	2			6			8			4		9
Permitted Phases			6		6	8			4			
Detector Phase	2		6	6	6	8	8		4	4		9
Switch Phase												
Minimum Initial (s)	24.0		24.0	24.0	24.0	5.0	5.0		5.0	5.0		40.5
Minimum Split (s)	28.7		28.7	28.7	28.7	28.5	28.5		28.5	28.5		45.0
Total Split (s)	46.5		46.5	46.5	46.5	28.5	28.5		28.5	28.5		45.0
Total Split (%)	38.8%		38.8%	38.8%	38.8%	23.8%	23.8%		23.8%	23.8%		37.5%
Maximum Green (s)	41.8		41.8	41.8	41.8	24.3	24.3		24.3	24.3		40.5
Yellow Time (s)	3.2		3.2	3.2	3.2	3.2	3.2		3.2	3.2		3.5
All-Red Time (s)	1.5		1.5	1.5	1.5	1.0	1.0		1.0	1.0		1.0
Lost Time Adjust (s)	0.0			0.0	0.0		0.0			0.0		0.0
Total Lost Time (s)	4.7			4.7	4.7		4.2			4.2		4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0		1.0	1.0	1.0	3.5	3.5		3.5	3.5		3.0
Recall Mode	Min		Min	Min	Min	None	None		None	None		None
Walk Time (s)	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0		
Flash Dont Walk (s)	12.0		16.0	16.0	16.0	19.0	19.0		18.0	18.0		
Pedestrian Calls (#/hr)	0		0	0	0	0	0		0	0		
Act Effct Green (s)	45.4			45.4	45.4		19.5			19.5		44.0
Actuated g/C Ratio	0.52			0.52	0.52		0.22			0.22		0.50
v/c Ratio	0.81			0.66	0.06		0.71			0.61		0.01
Control Delay	36.9			29.9	21.3		50.1			45.2		23.5
Queue Delay	0.0			0.0	0.0		0.0			0.0		0.0
Total Delay	36.9			29.9	21.3		50.1			45.2		23.5
LOS	D			C	C		D			D		C
Approach Delay	36.9			29.3			50.1			45.2		23.5
Approach LOS	D			C			D			D		C
Queue Length 50th (ft)	138			101	5		80			66		1
Queue Length 95th (ft)	#728			#536	42		#219			203		17
Internal Link Dist (ft)	328			214			293			260		276
Turn Bay Length (ft)					65							
Base Capacity (vph)	669			685	607		410			406		786
Starvation Cap Reductn	0			0	0		0			0		0
Spillback Cap Reductn	0			0	0		0			0		0
Storage Cap Reductn	0			0	0		0			0		0
Reduced v/c Ratio	0.81			0.66	0.06		0.53			0.45		0.01

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	87.8
Natural Cycle:	135
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.81
Intersection Signal Delay:	37.2
Intersection Capacity Utilization	113.1%
Intersection LOS:	D
ICU Level of Service	H

Lanes, Volumes, Timings  
 3: Meridian Ave & Mission St

12/28/2021



Lane Group	SWT
Turn Type	NA
Protected Phases	9
Permitted Phases	
Detector Phase	9
Switch Phase	
Minimum Initial (s)	40.5
Minimum Split (s)	45.0
Total Split (s)	45.0
Total Split (%)	37.5%
Maximum Green (s)	40.5
Yellow Time (s)	3.5
All-Red Time (s)	1.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.5
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	44.0
Actuated g/C Ratio	0.50
v/c Ratio	0.01
Control Delay	23.5
Queue Delay	0.0
Total Delay	23.5
LOS	C
Approach Delay	23.5
Approach LOS	C
Queue Length 50th (ft)	1
Queue Length 95th (ft)	17
Internal Link Dist (ft)	245
Turn Bay Length (ft)	
Base Capacity (vph)	786
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.01
Intersection Summary	

Lanes, Volumes, Timings  
 3: Meridian Ave & Mission St






12/28/2021

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Meridian Ave & Mission St

 Ø2 46.5 s	 Ø4 28.5 s	 Ø9 45 s
 Ø6 46.5 s	 Ø8 28.5 s	

Lanes, Volumes, Timings  
4: Mission St & Orange Grove Ave

12/28/2021



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	213	350	346	120	147	211
Future Volume (vph)	213	350	346	120	147	211
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	11	12	11	11
Storage Length (ft)	0			0	100	100
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88
Frt			0.965			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1391	1279	1244	0	1441	2268
Flt Permitted	0.423				0.950	
Satd. Flow (perm)	619	1279	1244	0	1441	2268
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			43			227
Link Speed (mph)		30	30		30	
Link Distance (ft)		161	588		432	
Travel Time (s)		3.7	13.4		9.8	
Peak Hour Factor	0.85	0.85	0.89	0.89	0.93	0.93
Bus Blockages (#/hr)	0	2	0	0	0	0
Parking (#/hr)		10	10	10		
Adj. Flow (vph)	251	412	389	135	158	227
Shared Lane Traffic (%)						
Lane Group Flow (vph)	251	412	524	0	158	227
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.35	1.59	1.58	1.24	1.30	1.30
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	6	6		20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			

Lanes, Volumes, Timings  
4: Mission St & Orange Grove Ave

12/28/2021



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Detector Phase	4	4	8		6	6
Switch Phase						
Minimum Initial (s)	30.0	30.0	30.0		4.0	4.0
Minimum Split (s)	35.0	35.0	36.0		24.0	24.0
Total Split (s)	36.0	36.0	36.0		24.0	24.0
Total Split (%)	60.0%	60.0%	60.0%		40.0%	40.0%
Maximum Green (s)	31.0	31.0	31.0		20.0	20.0
Yellow Time (s)	4.0	4.0	4.0		3.0	3.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Min	Min	Min		None	None
Walk Time (s)			20.0		8.0	8.0
Flash Dont Walk (s)			10.0		12.0	12.0
Pedestrian Calls (#/hr)			0		0	0
Act Effct Green (s)	30.8	30.8	30.8		10.7	10.7
Actuated g/C Ratio	0.61	0.61	0.61		0.21	0.21
v/c Ratio	0.67	0.53	0.68		0.52	0.34
Control Delay	20.4	9.7	13.2		23.9	4.5
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	20.4	9.7	13.2		23.9	4.5
LOS	C	A	B		C	A
Approach Delay		13.8	13.2		12.4	
Approach LOS		B	B		B	
Queue Length 50th (ft)	40	58	76		42	0
Queue Length 95th (ft)	#158	138	#240		87	22
Internal Link Dist (ft)		81	508		352	
Turn Bay Length (ft)					100	100
Base Capacity (vph)	381	788	783		572	1038
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	0.66	0.52	0.67		0.28	0.22

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	50.6
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.68
Intersection Signal Delay:	13.3
Intersection LOS:	B
Intersection Capacity Utilization:	76.6%
ICU Level of Service:	D

# Lanes, Volumes, Timings

## 4: Mission St & Orange Grove Ave

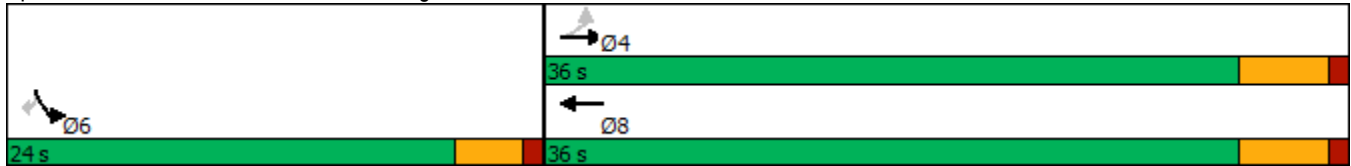
12/28/2021

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Mission St & Orange Grove Ave





Lanes, Volumes, Timings  
5: Fair Oaks Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Volume (vph)	43	38	98	17	29	24	61	998	24	18	1309	55
Future Volume (vph)	43	38	98	17	29	24	61	998	24	18	1309	55
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	11	12	10	11	12
Storage Length (ft)	0		0	0		0	75		0	75		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.926			0.953			0.996			0.994	
Flt Protected		0.988			0.988		0.950			0.950		
Satd. Flow (prot)	0	1387	0	0	1428	0	1652	3408	0	1652	3401	0
Flt Permitted		0.914			0.865		0.122			0.235		
Satd. Flow (perm)	0	1283	0	0	1250	0	212	3408	0	409	3401	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		58			25			4			7	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		420			404			386			375	
Travel Time (s)		11.5			11.0			8.8			8.5	
Peak Hour Factor	0.88	0.88	0.88	0.80	0.80	0.80	0.96	0.96	0.96	0.94	0.94	0.94
Adj. Flow (vph)	49	43	111	21	36	30	64	1040	25	19	1393	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	203	0	0	87	0	64	1065	0	19	1452	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.30	1.24	1.24	1.30	1.24	1.09	1.04	1.00	1.09	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		1	6		5	2	

Lanes, Volumes, Timings  
5: Fair Oaks Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		4.0	10.0		4.0	10.0	
Minimum Split (s)	27.0	27.0		27.0	27.0		7.0	34.0		8.0	34.0	
Total Split (s)	29.0	29.0		29.0	29.0		9.0	63.0		8.0	62.0	
Total Split (%)	29.0%	29.0%		29.0%	29.0%		9.0%	63.0%		8.0%	62.0%	
Maximum Green (s)	24.5	24.5		24.5	24.5		6.0	59.0		4.0	58.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.0	0.0		1.0	0.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		3.0	4.0		4.0	4.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	2.0		2.5	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)	7.0	7.0		6.0	6.0			9.0			9.0	
Flash Dont Walk (s)	15.5	15.5		16.5	16.5			21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		17.2			17.2		74.4	70.8		71.1	67.1	
Actuated g/C Ratio		0.17			0.17		0.74	0.71		0.71	0.67	
v/c Ratio		0.76			0.37		0.27	0.44		0.05	0.64	
Control Delay		45.1			29.5		7.0	8.3		4.1	9.4	
Queue Delay		0.1			0.0		0.0	0.1		0.0	0.7	
Total Delay		45.1			29.5		7.0	8.4		4.1	10.2	
LOS		D			C		A	A		A	B	
Approach Delay		45.1			29.5			8.3			10.1	
Approach LOS		D			C			A			B	
Queue Length 50th (ft)		89			35		9	110		4	222	
Queue Length 95th (ft)		152			63		25	251		m2	m92	
Internal Link Dist (ft)		340			324			306			295	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)		358			325		245	2415		352	2285	
Starvation Cap Reductn		0			0		0	0		0	466	
Spillback Cap Reductn		4			1		0	275		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.57			0.27		0.26	0.50		0.05	0.80	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 6 (6%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.76

Lanes, Volumes, Timings  
 5: Fair Oaks Ave & El Centro St

12/28/2021

Intersection Signal Delay: 12.4	Intersection LOS: B
Intersection Capacity Utilization 68.1%	ICU Level of Service C
Analysis Period (min) 15	



















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

Splits and Phases: 5: Fair Oaks Ave & El Centro St

 Ø1	 Ø2 (R)	 Ø4
9 s	62 s	29 s
 Ø5	 Ø6 (R)	 Ø8
8 s	63 s	29 s

Lanes, Volumes, Timings  
6: Fremont Ave & El Centro St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	90	58	31	64	37	24	766	25	24	713	22
Future Volume (vph)	33	90	58	31	64	37	24	766	25	24	713	22
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	10	12	12	10	12	12
Storage Length (ft)	0		0	0		0	75		0	75		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.957			0.962			0.995			0.995	
Flt Protected		0.991			0.988		0.950			0.950		
Satd. Flow (prot)	0	1537	0	0	1541	0	1391	1561	0	1391	1561	0
Flt Permitted		0.927			0.890		0.253			0.183		
Satd. Flow (perm)	0	1438	0	0	1388	0	370	1561	0	268	1561	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		40			32			4			4	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		632			417			438			375	
Travel Time (s)		17.2			11.4			10.0			8.5	
Peak Hour Factor	0.84	0.84	0.84	0.82	0.82	0.82	0.91	0.91	0.91	0.97	0.97	0.97
Adj. Flow (vph)	39	107	69	38	78	45	26	842	27	25	735	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	215	0	0	161	0	26	869	0	25	758	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.35	1.24	1.24	1.35	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	

Lanes, Volumes, Timings  
6: Fremont Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	22.0	22.0		22.0	22.0		38.0	38.0		38.0	38.0	
Total Split (%)	36.7%	36.7%		36.7%	36.7%		63.3%	63.3%		63.3%	63.3%	
Maximum Green (s)	17.0	17.0		17.0	17.0		33.0	33.0		33.0	33.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.5	4.5		4.5	4.5		4.0	4.0		4.0	4.0	
Minimum Gap (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	1.5	1.5		1.5	1.5		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		C-Min	C-Min		C-Min	C-Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		13.5			13.5		36.5	36.5		36.5	36.5	
Actuated g/C Ratio		0.22			0.22		0.61	0.61		0.61	0.61	
v/c Ratio		0.61			0.48		0.12	0.91		0.15	0.80	
Control Delay		23.6			19.9		8.0	30.0		9.9	15.9	
Queue Delay		0.0			0.0		0.0	14.4		0.0	0.5	
Total Delay		23.6			19.9		8.0	44.4		9.9	16.4	
LOS		C			B		A	D		A	B	
Approach Delay		23.6			19.9			43.3			16.2	
Approach LOS		C			B			D			B	
Queue Length 50th (ft)		55			40		4	244		3	123	
Queue Length 95th (ft)		98			72		15	#544		m7	m#377	
Internal Link Dist (ft)		552			337			358			295	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)		436			416		224	950		162	950	
Starvation Cap Reductn		0			0		0	0		0	31	
Spillback Cap Reductn		1			1		0	91		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.49			0.39		0.12	1.01		0.15	0.82	

Intersection Summary

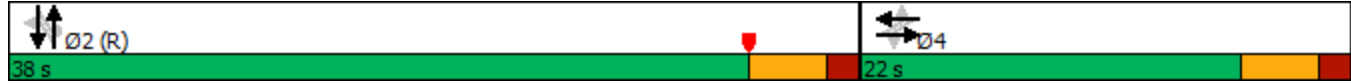
Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 36 (60%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.91

Lanes, Volumes, Timings  
6: Fremont Ave & El Centro St

12/28/2021

Intersection Signal Delay: 29.1	Intersection LOS: C
Intersection Capacity Utilization 72.9%	ICU Level of Service C
Analysis Period (min) 15	
# 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.	

Splits and Phases: 6: Fremont Ave & El Centro St



Lanes, Volumes, Timings  
7: Meridian Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	10	93	72	36	85	51	47	112	47	13	138	8
Future Volume (vph)	10	93	72	36	85	51	47	112	47	13	138	8
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	12	13	12	12	13	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.945			0.960			0.969			0.993	
Flt Protected		0.997			0.990			0.989			0.996	
Satd. Flow (prot)	0	1527	0	0	1541	0	0	1553	0	0	1603	0
Flt Permitted		0.997			0.990			0.989			0.996	
Satd. Flow (perm)	0	1527	0	0	1541	0	0	1553	0	0	1603	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1194			309			450			373	
Travel Time (s)		32.6			8.4			12.3			10.2	
Peak Hour Factor	0.80	0.80	0.80	0.87	0.87	0.87	0.80	0.80	0.80	0.85	0.85	0.85
Adj. Flow (vph)	13	116	90	41	98	59	59	140	59	15	162	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	219	0	0	198	0	0	258	0	0	186	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	58.5%
ICU Level of Service	B
Analysis Period (min)	15

Lanes, Volumes, Timings  
8: orange Grove Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	↕
Traffic Volume (vph)	16	123	7	9	75	56	13	52	7	45	37	12
Future Volume (vph)	16	123	7	9	75	56	13	52	7	45	37	12
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	12	13	12	13	13	12
Storage Length (ft)	0		0	0		0	0		0	0		75
Storage Lanes	0		0	0		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.993			0.946			0.986			0.963	
Fl <sub>t</sub> Protected		0.995			0.997			0.991		0.950		
Satd. Flow (prot)	0	1602	0	0	1529	0	0	1584	0	1540	1561	0
Fl <sub>t</sub> Permitted		0.995			0.997			0.991		0.950		
Satd. Flow (perm)	0	1602	0	0	1529	0	0	1584	0	1540	1561	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		426			1194			450			376	
Travel Time (s)		11.6			32.6			12.3			10.3	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.82	0.82	0.82	0.92	0.92	0.92
Adj. Flow (vph)	20	154	9	11	94	70	16	63	9	49	40	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	183	0	0	175	0	0	88	0	49	53	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.19	1.24	1.19	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	



















Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	32.0%
ICU Level of Service	A
Analysis Period (min)	15

























Lanes, Volumes, Timings  
 9: Pasadena Ave & El Centro St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	36	0	38	0	84	29	25	69	1
Future Volume (vph)	0	0	0	36	0	38	0	84	29	25	69	1
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	12	14	12	14	12	11	14	12	11	12
Storage Length (ft)	0		0	0		0	0		75	100		0
Storage Lanes	0		0	1		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.865				0.850		0.998	
Fl <sub>t</sub> Protected				0.950						0.950		
Satd. Flow (prot)	0	1569	0	1590	0	0	0	1516	1411	1490	1513	0
Fl <sub>t</sub> Permitted				0.950						0.950		
Satd. Flow (perm)	0	1569	0	1590	0	0	0	1516	1411	1490	1513	0
Link Speed (mph)		30			25			30			30	
Link Distance (ft)		367			417			410			724	
Travel Time (s)		8.3			11.4			9.3			16.5	
Peak Hour Factor	0.25	0.25	0.25	0.89	0.89	0.89	0.88	0.88	0.88	0.80	0.80	0.80
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	0
Adj. Flow (vph)	0	0	0	40	0	43	0	95	33	31	86	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	40	43	0	0	95	33	31	87	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		14			14			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.24	1.24	1.24	1.15	1.24	1.15	1.24	1.30	1.16	1.24	1.30	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization Err%	ICU Level of Service H											
Analysis Period (min)	15											

Lanes, Volumes, Timings  
11: Fremont Ave & Monterey Rd

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	596	177	49	618	36	161	716	32	67	682	49
Future Volume (vph)	68	596	177	49	618	36	161	716	32	67	682	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	12	12	10	12	12	10	10	16	10	10	16
Storage Length (ft)	150		0	125		0	100		50	100		40
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25		25			
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.966			0.992				0.850			0.850
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	3419	0	1652	3511	0	1391	1464	1511	1391	1464	1511
Fl <sub>t</sub> Permitted	0.245			0.235			0.250			0.196		
Satd. Flow (perm)	426	3419	0	409	3511	0	366	1464	1511	287	1464	1511
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		64			10				36			36
Link Speed (mph)		35			35			30				30
Link Distance (ft)		666			643			396				474
Travel Time (s)		13.0			12.5			9.0				10.8
Peak Hour Factor	0.87	0.87	0.87	0.93	0.93	0.93	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	78	685	203	53	665	39	175	778	35	69	703	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	78	888	0	53	704	0	175	778	35	69	703	51
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.09	1.00	1.00	1.09	1.00	1.00	1.35	1.35	1.06	1.35	1.35	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			4			2				2

Lanes, Volumes, Timings  
 11: Fremont Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			4			2		2	2		2
Detector Phase	4	4		4	4		2	2	2	2	2	2
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	22.0	22.0		22.0	22.0		38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	36.7%	36.7%		36.7%	36.7%		63.3%	63.3%	63.3%	63.3%	63.3%	63.3%
Maximum Green (s)	17.0	17.0		17.0	17.0		33.0	33.0	33.0	33.0	33.0	33.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.5	4.5		4.5	4.5		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Gap (s)	3.5	3.5		3.5	3.5		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	1.5	1.5		1.5	1.5		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	17.0	17.0		17.0	17.0		33.0	33.0	33.0	33.0	33.0	33.0
Actuated g/C Ratio	0.28	0.28		0.28	0.28		0.55	0.55	0.55	0.55	0.55	0.55
v/c Ratio	0.65	0.88		0.46	0.70		0.87	0.97	0.04	0.44	0.87	0.06
Control Delay	48.9	31.0		33.8	23.5		56.1	41.0	2.7	19.0	26.8	3.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	31.0		33.8	23.5		56.1	41.0	2.7	19.0	26.8	3.5
LOS	D	C		C	C		E	D	A	B	C	A
Approach Delay		32.5			24.2			42.3				24.7
Approach LOS		C			C			D				C
Queue Length 50th (ft)	25	148		16	117		49	243	0	13	198	2
Queue Length 95th (ft)	#82	#235		#57	171		#163	#481	10	#52	#416	14
Internal Link Dist (ft)		586			563			316				394
Turn Bay Length (ft)	150			125			100		50	100		40
Base Capacity (vph)	120	1014		115	1001		201	805	847	157	805	847
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.88		0.46	0.70		0.87	0.97	0.04	0.44	0.87	0.06

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 36 (60%), Referenced to phase 2:NBSB and 6:, Start of Yellow  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.97

Lanes, Volumes, Timings  
11: Fremont Ave & Monterey Rd

12/28/2021

Intersection Signal Delay: 31.6	Intersection LOS: C
Intersection Capacity Utilization 95.3%	ICU Level of Service F
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 11: Fremont Ave & Monterey Rd



Lanes, Volumes, Timings  
12: Meridian Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	775	194	45	830	23	239	146	52	31	193	14
Future Volume (vph)	23	775	194	45	830	23	239	146	52	31	193	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	12	10	11	12	12	13	12	12	13	12
Storage Length (ft)	225		0	175		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.970			0.996			0.984			0.992	
Fl <sub>t</sub> Protected	0.950			0.950				0.973			0.994	
Satd. Flow (prot)	1652	3319	0	1652	3408	0	0	1552	0	0	1598	0
Fl <sub>t</sub> Permitted	0.230			0.185				0.651			0.919	
Satd. Flow (perm)	400	3319	0	322	3408	0	0	1038	0	0	1478	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		63			6			13			6	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1211			592			371			479	
Travel Time (s)		23.6			11.5			10.1			13.1	
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.87	0.87	0.87	0.85	0.85	0.85
Adj. Flow (vph)	24	824	206	48	892	25	275	168	60	36	227	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	1030	0	48	917	0	0	503	0	0	279	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.00	1.09	1.04	1.00	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	

Lanes, Volumes, Timings  
 12: Meridian Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	30.0	30.0		30.0	30.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	35.0	35.0		35.0	35.0		24.0	24.0		24.0	24.0	
Total Split (s)	35.0	35.0		35.0	35.0		30.0	30.0		30.0	30.0	
Total Split (%)	53.8%	53.8%		53.8%	53.8%		46.2%	46.2%		46.2%	46.2%	
Maximum Green (s)	30.0	30.0		30.0	30.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0			0.0		
Total Lost Time (s)	5.0	5.0		5.0	5.0		4.0			4.0		
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	30.0	30.0		30.0	30.0		26.0			26.0		
Actuated g/C Ratio	0.46	0.46		0.46	0.46		0.40			0.40		
v/c Ratio	0.13	0.66		0.32	0.58		1.19			0.47		
Control Delay	12.3	15.1		18.6	14.7		129.4			17.3		
Queue Delay	0.0	0.0		0.0	0.0		0.0			0.0		
Total Delay	12.3	15.1		18.6	14.7		129.4			17.3		
LOS	B	B		B	B		F			B		
Approach Delay		15.1			14.8		129.4			17.3		
Approach LOS		B			B		F			B		
Queue Length 50th (ft)	5	146		11	132		~246			77		
Queue Length 95th (ft)	19	208		39	185		#398			128		
Internal Link Dist (ft)		1131			512		291			399		
Turn Bay Length (ft)	225			175								
Base Capacity (vph)	184	1565		148	1576		423			594		
Starvation Cap Reductn	0	0		0	0		0			0		
Spillback Cap Reductn	0	0		0	0		0			0		
Storage Cap Reductn	0	0		0	0		0			0		
Reduced v/c Ratio	0.13	0.66		0.32	0.58		1.19			0.47		

Intersection Summary

Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	65
Natural Cycle:	75
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.19
Intersection Signal Delay:	35.8
Intersection LOS:	D
Intersection Capacity Utilization:	91.9%
ICU Level of Service:	F
Analysis Period (min):	15
~ Volume exceeds capacity, queue is theoretically infinite.	

Lanes, Volumes, Timings  
12: Meridian Ave & Monterey Rd

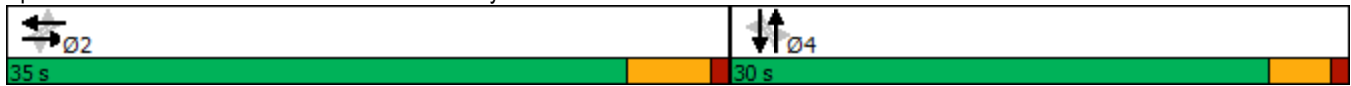
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Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 12: Meridian Ave & Monterey Rd



Lanes, Volumes, Timings  
 13: Orange Grove Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	911	1	12	975	96	1	0	12	69	5	9
Future Volume (vph)	15	911	1	12	975	96	1	0	12	69	5	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	12	10	11	12	12	13	12	12	13	12
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.987			0.873				0.985
Fl <sub>t</sub> Protected	0.950			0.950				0.997				0.960
Satd. Flow (prot)	1652	3421	0	1652	3377	0	0	1411	0	0	1533	0
Fl <sub>t</sub> Permitted	0.220			0.254				0.997				0.960
Satd. Flow (perm)	382	3421	0	442	3377	0	0	1411	0	0	1533	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					11			79				7
Link Speed (mph)		35			35			25				25
Link Distance (ft)		429			1211			316				446
Travel Time (s)		8.4			23.6			8.6				12.2
Peak Hour Factor	0.89	0.89	0.89	0.94	0.94	0.94	0.80	0.80	0.80	0.90	0.90	0.90
Adj. Flow (vph)	17	1024	1	13	1037	102	1	0	15	77	6	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	1025	0	13	1139	0	0	16	0	0	93	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.00	1.09	1.04	1.00	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases		2			6		3	3		4	4	



Lanes, Volumes, Timings  
 13: Orange Grove Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2				6							
Detector Phase	2	2			6	6	3	3			4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0	5.0	5.0	5.0			5.0	5.0
Minimum Split (s)	24.0	24.0			24.0	24.0	31.5	31.5			31.5	31.5
Total Split (s)	26.0	26.0			26.0	26.0	32.0	32.0			32.0	32.0
Total Split (%)	28.9%	28.9%			28.9%	28.9%	35.6%	35.6%			35.6%	35.6%
Maximum Green (s)	21.0	21.0			21.0	21.0	27.5	27.5			27.5	27.5
Yellow Time (s)	4.0	4.0			4.0	4.0	3.5	3.5			3.5	3.5
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0			1.0	1.0
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0				0.0	
Total Lost Time (s)	5.0	5.0			5.0	5.0	4.5				4.5	
Lead/Lag							Lead	Lead			Lag	Lag
Lead-Lag Optimize?							Yes	Yes			Yes	Yes
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode	C-Min	C-Min			C-Min	C-Min	None	None			None	None
Walk Time (s)	7.0	7.0			7.0	7.0	7.0	7.0			7.0	7.0
Flash Dont Walk (s)	12.0	12.0			12.0	12.0	20.0	20.0			20.0	20.0
Pedestrian Calls (#/hr)	0	0			0	0	0	0			0	0
Act Effct Green (s)	69.1	69.1			69.1	69.1	5.5				10.4	
Actuated g/C Ratio	0.77	0.77			0.77	0.77	0.06				0.12	
v/c Ratio	0.06	0.39			0.04	0.44	0.10				0.51	
Control Delay	6.5	6.0			6.2	6.4	1.2				43.2	
Queue Delay	0.0	0.0			0.0	0.0	0.0				0.0	
Total Delay	6.5	6.0			6.2	6.4	1.2				43.2	
LOS	A	A			A	A	A				D	
Approach Delay	6.0				6.4		1.2				43.2	
Approach LOS	A				A		A				D	
Queue Length 50th (ft)	2	74			1	86	0				47	
Queue Length 95th (ft)	12	195			10	230	0				90	
Internal Link Dist (ft)	349				1131		236				366	
Turn Bay Length (ft)	75				75							
Base Capacity (vph)	293	2628			339	2596	486				473	
Starvation Cap Reductn	0	0			0	0	0				0	
Spillback Cap Reductn	0	0			0	0	0				0	
Storage Cap Reductn	0	0			0	0	0				0	
Reduced v/c Ratio	0.06	0.39			0.04	0.44	0.03				0.20	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.51
Intersection Signal Delay:	7.7
Intersection LOS:	A
Intersection Capacity Utilization:	50.1%
ICU Level of Service:	A
Analysis Period (min):	15

Lanes, Volumes, Timings  
 13: Orange Grove Ave & Monterey Rd

12/28/2021

Splits and Phases: 13: Orange Grove Ave & Monterey Rd



Lanes, Volumes, Timings  
 16: Meridian Ave & Hope St

12/28/2021



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	10	70	116	13	52	149
Future Volume (vph)	10	70	116	13	52	149
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	13	12	12	13
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.882		0.986			
Flt Protected	0.994					0.987
Satd. Flow (prot)	1375	0	1598	0	0	1600
Flt Permitted	0.994					0.987
Satd. Flow (perm)	1375	0	1598	0	0	1600
Link Speed (mph)	25		25			25
Link Distance (ft)	299		340			399
Travel Time (s)	8.2		9.3			10.9
Peak Hour Factor	0.83	0.83	0.82	0.82	0.93	0.93
Adj. Flow (vph)	12	84	141	16	56	160
Shared Lane Traffic (%)						
Lane Group Flow (vph)	96	0	157	0	0	216
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.24	1.24	1.19	1.24	1.24	1.19
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	36.7%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings  
17: Fremont Ave & Grevelia St

12/28/2021



Lane Group	EBL2	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR2
Lane Configurations												
Traffic Volume (vph)	5	10	23	1	6	10	6	765	8	3	675	7
Future Volume (vph)	5	10	23	1	6	10	6	765	8	3	675	7
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	12	12	12	12	12	14	12	12	14	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.918			0.920			0.999			0.999	
Flt Protected		0.994			0.998							
Satd. Flow (prot)	0	1431	0	0	1440	0	0	1672	0	0	1672	0
Flt Permitted		0.953			0.983			0.996			0.998	
Satd. Flow (perm)	0	1372	0	0	1419	0	0	1665	0	0	1668	0
Right Turn on Red									Yes			Yes
Satd. Flow (RTOR)								62			62	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		1201			446			255			617	
Travel Time (s)		32.8			12.2			5.8			14.0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.94	0.94	0.94	0.96	0.96	0.96
Adj. Flow (vph)	6	13	29	1	8	13	6	814	9	3	703	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	48	0	0	22	0	0	829	0	0	713	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.15	1.24	1.24	1.15	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												

Lanes, Volumes, Timings  
 17: Fremont Ave & Grevelia St

12/28/2021



Lane Group	NET	SWT
Lane Configurations	↑	↑
Traffic Volume (vph)	8	8
Future Volume (vph)	8	8
Ideal Flow (vphpl)	1600	1600
Lane Width (ft)	12	12
Lane Util. Factor	1.00	1.00
Frt		
Flt Protected		
Satd. Flow (prot)	1569	1569
Flt Permitted		
Satd. Flow (perm)	1569	1569
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)	30	30
Link Distance (ft)	309	405
Travel Time (s)	7.0	9.2
Peak Hour Factor	0.92	0.92
Adj. Flow (vph)	9	9
Shared Lane Traffic (%)		
Lane Group Flow (vph)	9	9
Enter Blocked Intersection	No	No
Lane Alignment	Left	Left
Median Width(ft)	0	0
Link Offset(ft)	0	0
Crosswalk Width(ft)	16	16
Two way Left Turn Lane		
Headway Factor	1.24	1.24
Turning Speed (mph)		
Number of Detectors	2	2
Detector Template	Thru	Thru
Leading Detector (ft)	100	100
Trailing Detector (ft)	0	0
Detector 1 Position(ft)	0	0
Detector 1 Size(ft)	6	6
Detector 1 Type	Cl+Ex	Cl+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(ft)	94	94
Detector 2 Size(ft)	6	6
Detector 2 Type	Cl+Ex	Cl+Ex
Detector 2 Channel		
Detector 2 Extend (s)	0.0	0.0
Turn Type	NA	NA
Protected Phases	9	9
Permitted Phases		
Detector Phase	9	9
Switch Phase		

Lanes, Volumes, Timings  
17: Fremont Ave & Grevelia St

12/28/2021



Lane Group	EBL2	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR2
Minimum Initial (s)	10.0	10.0		6.0	6.0		40.0	40.0		40.0	40.0	
Minimum Split (s)	20.0	20.0		11.0	11.0		45.0	45.0		45.0	45.0	
Total Split (s)	25.0	25.0		25.0	25.0		45.0	45.0		45.0	45.0	
Total Split (%)	21.7%	21.7%		21.7%	21.7%		39.1%	39.1%		39.1%	39.1%	
Maximum Green (s)	20.0	20.0		20.0	20.0		40.0	40.0		40.0	40.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.5	3.5		3.5	3.5		0.2	0.2		0.2	0.2	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0								7.0	7.0	
Flash Dont Walk (s)	8.0	8.0								8.0	8.0	
Pedestrian Calls (#/hr)	0	0								0	0	
Act Effct Green (s)		11.2			9.4			51.6			51.6	
Actuated g/C Ratio		0.16			0.13			0.74			0.74	
v/c Ratio		0.22			0.12			0.67			0.57	
Control Delay		33.3			32.7			16.4			14.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		33.3			32.7			16.4			14.6	
LOS		C			C			B			B	
Approach Delay		33.3			32.7			16.4			14.6	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)		15			7			144			107	
Queue Length 95th (ft)		60			34			#944			#761	
Internal Link Dist (ft)		1121			366			175			537	
Turn Bay Length (ft)												
Base Capacity (vph)		415			429			1246			1248	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.12			0.05			0.67			0.57	






Intersection Summary

Area Type: Other  
 Cycle Length: 115  
 Actuated Cycle Length: 69.8  
 Natural Cycle: 130  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.67  
 Intersection Signal Delay: 16.3      Intersection LOS: B  
 Intersection Capacity Utilization 107.6%      ICU Level of Service G  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Lanes, Volumes, Timings  
 17: Fremont Ave & Grevelia St

12/28/2021

Splits and Phases: 17: Fremont Ave & Grevelia St

 Ø2 45 s	 Ø4 25 s	 Ø9 45 s
 Ø6 45 s	 Ø8 25 s	

Lanes, Volumes, Timings  
 17: Fremont Ave & Grevelia St

12/28/2021





















Lane Group	NET	SWT
Minimum Initial (s)	40.5	40.5
Minimum Split (s)	45.0	45.0
Total Split (s)	45.0	45.0
Total Split (%)	39.1%	39.1%
Maximum Green (s)	40.5	40.5
Yellow Time (s)	3.5	3.5
All-Red Time (s)	1.0	1.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	4.5	4.5
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)	42.8	42.8
Actuated g/C Ratio	0.61	0.61
v/c Ratio	0.01	0.01
Control Delay	12.6	12.6
Queue Delay	0.0	0.0
Total Delay	12.6	12.6
LOS	B	B
Approach Delay	12.6	12.6
Approach LOS	B	B
Queue Length 50th (ft)	1	1
Queue Length 95th (ft)	15	15
Internal Link Dist (ft)	229	325
Turn Bay Length (ft)		
Base Capacity (vph)	961	961
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.01	0.01
<b>Intersection Summary</b>		



















Lanes, Volumes, Timings  
 18: Meridian Ave & Grevelia St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	17	13	2	14	3	21	124	14	7	155	1
Future Volume (vph)	1	17	13	2	14	3	21	124	14	7	155	1
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	12	10	10	12	10	10
Storage Length (ft)	0		0	0		0	0		100	0		100
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.943			0.978				0.850			0.850
Flt Protected		0.999			0.994			0.993			0.998	
Satd. Flow (prot)	0	1527	0	0	1576	0	0	1454	1244	0	1461	1244
Flt Permitted		0.999			0.994			0.993			0.998	
Satd. Flow (perm)	0	1527	0	0	1576	0	0	1454	1244	0	1461	1244
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		441			1201			251			624	
Travel Time (s)		12.0			32.8			6.8			17.0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.93	0.93	0.93	0.83	0.83	0.83
Adj. Flow (vph)	1	21	16	3	18	4	23	133	15	8	187	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	38	0	0	25	0	0	156	15	0	195	1
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.35	1.35	1.24	1.35	1.35
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	32.6%						ICU Level of Service A					
Analysis Period (min)	15											

Lanes, Volumes, Timings  
19: Diamond Ave & Mission St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	515	33	23	411	6	16	1	25	0	0	0
Future Volume (vph)	0	515	33	23	411	6	16	1	25	0	0	0
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	11	12	12	11	12	10	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992			0.998			0.920				
Flt Protected					0.997			0.981				
Satd. Flow (prot)	0	1354	0	0	1335	0	0	1416	0	0	1569	0
Flt Permitted					0.997			0.981				
Satd. Flow (perm)	0	1354	0	0	1335	0	0	1416	0	0	1569	0
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		294			324			374			223	
Travel Time (s)		6.7			7.4			10.2			5.1	
Peak Hour Factor	0.96	0.96	0.96	0.95	0.95	0.95	0.80	0.80	0.80	0.25	0.25	0.25
Parking (#/hr)		0	0		3	3						
Adj. Flow (vph)	0	536	34	24	433	6	20	1	31	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	570	0	0	463	0	0	52	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.47	1.24	1.24	1.50	1.24	1.35	1.24	1.24	1.24	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	58.5%
ICU Level of Service	B
Analysis Period (min)	15

Lanes, Volumes, Timings  
20: Fairview Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	20	468	52	33	386	31	7	2	14	10	8	47
Future Volume (vph)	20	468	52	33	386	31	7	2	14	10	8	47
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	11	12	12	11	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987			0.991			0.915			0.902	
Flt Protected		0.998			0.996			0.985			0.993	
Satd. Flow (prot)	0	1292	0	0	1272	0	0	1414	0	0	1405	0
Flt Permitted		0.998			0.996			0.985			0.993	
Satd. Flow (perm)	0	1292	0	0	1272	0	0	1414	0	0	1405	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		324			613			381			228	
Travel Time (s)		7.4			13.9			10.4			6.2	
Peak Hour Factor	0.90	0.90	0.90	0.86	0.86	0.86	0.83	0.83	0.83	0.89	0.89	0.89
Parking (#/hr)		7	7		10	10						
Adj. Flow (vph)	22	520	58	38	449	36	8	2	17	11	9	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	600	0	0	523	0	0	27	0	0	73	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.55	1.24	1.24	1.58	1.24	1.24	1.24	1.24	1.24	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	54.3%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
21: Pasadena Ave & Mission St

12/28/2021



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	263	29	66	263	46	76
Future Volume (vph)	263	29	66	263	46	76
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	13	13	12	12	11	14
Storage Length (ft)		0	0		100	100
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88
Fr <sub>t</sub>		0.850				0.850
Fl <sub>t</sub> Protected			0.950		0.950	
Satd. Flow (prot)	1621	1378	1490	1569	1441	2493
Fl <sub>t</sub> Permitted			0.950		0.950	
Satd. Flow (perm)	1621	1378	1490	1569	1441	2493
Link Speed (mph)	30			30	30	
Link Distance (ft)	267			367	724	
Travel Time (s)	6.1			8.3	16.5	
Peak Hour Factor	0.80	0.80	0.89	0.89	0.91	0.91
Bus Blockages (#/hr)	0	0	0	0	0	2
Adj. Flow (vph)	329	36	74	296	51	84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	329	36	74	296	51	84
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane					Yes	
Headway Factor	1.19	1.19	1.24	1.24	1.30	1.15
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Free	Free	

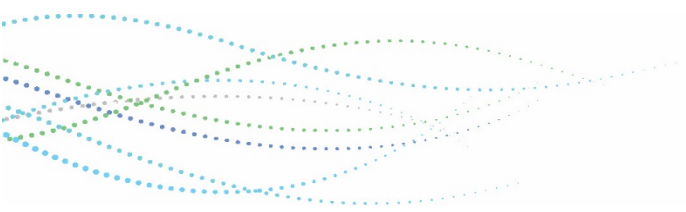
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	34.1%
Analysis Period (min)	15
	ICU Level of Service A



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## APPENDIX A: SYNCHRO OUTPUT SHEETS SCENARIO 3 - AM PEAK HOUR



Lanes, Volumes, Timings  
1: Fair Oaks Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	171	99	32	229	150	84	1083	20	84	873	61
Future Volume (vph)	79	171	99	32	229	150	84	1083	20	84	873	61
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	10	16	12	10	11	12	10	11	12
Storage Length (ft)	0		0	75		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.945			0.941			0.997			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1391	1224	0	1391	1673	0	1652	3377	0	1652	3340	0
Flt Permitted	0.146			0.567			0.950			0.950		
Satd. Flow (perm)	214	1224	0	830	1673	0	1652	3377	0	1652	3340	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33			32			2			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		427			901			375			717	
Travel Time (s)		9.7			20.5			8.5			16.3	
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.87	0.87	0.87	0.95	0.95	0.95
Bus Blockages (#/hr)	0	0	0	0	0	0	0	5	0	0	7	0
Parking (#/hr)		3	3									
Adj. Flow (vph)	86	186	108	34	241	158	97	1245	23	88	919	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	86	294	0	34	399	0	97	1268	0	88	983	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.35	1.57	1.24	1.35	1.06	1.24	1.09	1.06	1.00	1.09	1.06	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
1: Fair Oaks Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases	3	8			4		1	6		5	2	
Permitted Phases	8			4								
Detector Phase	3	8		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	4.0	10.0		10.0	10.0		9.0	10.0		9.0	10.0	
Minimum Split (s)	9.5	28.5		27.0	27.0		13.5	25.0		13.5	25.0	
Total Split (s)	9.8	40.8		31.0	31.0		15.8	45.4		13.8	43.4	
Total Split (%)	9.8%	40.8%		31.0%	31.0%		15.8%	45.4%		13.8%	43.4%	
Maximum Green (s)	6.8	36.8		27.0	27.0		12.8	41.4		10.8	39.4	
Yellow Time (s)	3.0	3.5		3.5	3.5		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	0.5		0.5	0.5		0.0	0.0		0.0	0.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.5	3.0		3.0	3.0		1.5	4.0		1.5	4.0	
Minimum Gap (s)	2.5	3.0		3.0	3.0		1.5	3.0		1.5	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)		7.0		6.0	6.0			7.0			7.0	
Flash Dont Walk (s)		17.0		17.0	17.0			13.0			13.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	33.9	32.9		25.1	25.1		10.4	48.7		9.8	48.0	
Actuated g/C Ratio	0.34	0.33		0.25	0.25		0.10	0.49		0.10	0.48	
v/c Ratio	0.58	0.69		0.16	0.90		0.56	0.77		0.55	0.61	
Control Delay	37.3	34.1		30.4	57.7		58.4	24.1		56.2	23.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.3		0.0	0.0	
Total Delay	37.3	34.1		30.4	57.7		58.4	24.3		56.2	23.6	
LOS	D	C		C	E		E	C		E	C	
Approach Delay		34.8			55.6			26.8			26.2	
Approach LOS		C			E			C			C	
Queue Length 50th (ft)	36	135		17	222		60	380		55	260	
Queue Length 95th (ft)	71	229		43	#384		116	#474		105	353	
Internal Link Dist (ft)		347			821			295			637	
Turn Bay Length (ft)				75			150			150		
Base Capacity (vph)	152	471		224	475		211	1646		178	1608	
Starvation Cap Reductn	0	0		0	0		0	62		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.57	0.62		0.15	0.84		0.46	0.80		0.49	0.61	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow  
 Natural Cycle: 90

# Lanes, Volumes, Timings

## 1: Fair Oaks Ave & Mission St

12/28/2021

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 31.4

Intersection LOS: C

Intersection Capacity Utilization 81.8%








ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

























Splits and Phases: 1: Fair Oaks Ave & Mission St

 Ø1	 Ø2 (R)	 Ø3	 Ø4
15.8 s	43.4 s	9.8 s	31 s
 Ø5	 Ø6 (R)	 Ø8	
13.8 s	45.4 s	40.8 s	



Lanes, Volumes, Timings  
2: Fremont Ave & Mission St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	243	97	36	273	66	99	744	32	86	586	26
Future Volume (vph)	44	243	97	36	273	66	99	744	32	86	586	26
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	10	12	10	10	12	10	10	10	10	10	10
Storage Length (ft)	95		50	200		50	190		100	165		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>			0.850			0.850			0.850			0.850
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1391	1264	1151	1391	1249	1137	1391	1464	1244	1391	1464	1244
Fl <sub>t</sub> Permitted	0.367			0.466			0.293			0.185		
Satd. Flow (perm)	537	1264	1151	682	1249	1137	429	1464	1244	271	1464	1244
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			99			61			29			29
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		613			414			375			744	
Travel Time (s)		13.9			9.4			8.5			16.9	
Peak Hour Factor	0.87	0.87	0.87	0.80	0.80	0.80	0.92	0.92	0.92	0.89	0.89	0.89
Bus Blockages (#/hr)	0	2	2	0	2	2	0	0	0	0	0	0
Parking (#/hr)		6	6		8	8						
Adj. Flow (vph)	51	279	111	45	341	83	108	809	35	97	658	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	279	111	45	341	83	108	809	35	97	658	29
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.35	1.62	1.49	1.35	1.64	1.51	1.35	1.35	1.35	1.35	1.35	1.35
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
2: Fremont Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	18.5	18.5	18.5	18.5	18.5	18.5	20.5	20.5	20.5	20.5	20.5	20.5
Total Split (s)	21.1	21.1	21.1	21.1	21.1	21.1	38.9	38.9	38.9	38.9	38.9	38.9
Total Split (%)	35.2%	35.2%	35.2%	35.2%	35.2%	35.2%	64.8%	64.8%	64.8%	64.8%	64.8%	64.8%
Maximum Green (s)	16.6	16.6	16.6	16.6	16.6	16.6	33.4	33.4	33.4	33.4	33.4	33.4
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	2.0	2.0	2.0	4.5	4.5	4.5	2.0	2.0	2.0
Minimum Gap (s)	3.0	3.0	3.0	2.0	2.0	2.0	3.5	3.5	3.5	2.0	2.0	2.0
Time Before Reduce (s)	1.5	1.5	1.5	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	7.0	7.0	7.0	7.0	7.0	7.0	8.0	8.0	8.0	8.0	8.0	8.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	16.6	16.6	16.6	16.6	16.6	16.6	33.4	33.4	33.4	33.4	33.4	33.4
Actuated g/C Ratio	0.28	0.28	0.28	0.28	0.28	0.28	0.56	0.56	0.56	0.56	0.56	0.56
v/c Ratio	0.34	0.80	0.28	0.24	0.99	0.23	0.45	0.99	0.05	0.65	0.81	0.04
Control Delay	25.1	40.4	7.5	20.8	72.3	9.3	18.5	40.4	7.3	35.2	21.2	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	12.3	0.0
Total Delay	25.1	40.4	7.6	20.8	72.3	9.3	18.5	44.4	7.3	35.2	33.4	2.8
LOS	C	D	A	C	E	A	B	D	A	D	C	A
Approach Delay		30.4			56.2			40.1			32.5	
Approach LOS		C			E			D			C	
Queue Length 50th (ft)	15	93	3	13	122	6	29	235	4	22	172	0
Queue Length 95th (ft)	42	#197	33	32	#224	28	m40	m#363	m6	#95	#366	9
Internal Link Dist (ft)		533			334			295			664	
Turn Bay Length (ft)	95		50	200		50	190		100	165		100
Base Capacity (vph)	148	349	390	188	345	358	238	814	705	150	814	705
Starvation Cap Reductn	0	0	0	0	0	0	0	13	0	0	0	0
Spillback Cap Reductn	0	0	10	0	0	0	0	0	0	0	143	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.80	0.29	0.24	0.99	0.23	0.45	1.01	0.05	0.65	0.98	0.04

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 18 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 90

# Lanes, Volumes, Timings

## 2: Fremont Ave & Mission St

12/28/2021

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 39.1

Intersection LOS: D

Intersection Capacity Utilization 89.2%

ICU Level of Service E



Analysis Period (min) 15

# 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.

Splits and Phases: 2: Fremont Ave & Mission St

 Ø2 (R)	 Ø4
38.9 s	21.1 s
 Ø6 (R)	 Ø8
38.9 s	21.1 s

Lanes, Volumes, Timings  
3: Mission St & Meridian Ave

12/28/2021



Lane Group	EBL2	EBT	WBT	WBR	SBL	SBR2	NET	SWT
Lane Configurations		↕	↑	↗	↘		↑	↑
Traffic Volume (vph)	16	330	326	50	45	33	8	8
Future Volume (vph)	16	330	326	50	45	33	8	8
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	11	11	12	12	12	12	12
Storage Length (ft)				65	0			
Storage Lanes				1	1			
Taper Length (ft)					25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>				0.850	0.943			
Fl <sub>t</sub> Protected		0.998			0.972			
Satd. Flow (prot)	0	1306	1334	1173	1438	0	1569	1569
Fl <sub>t</sub> Permitted		0.977			0.972			
Satd. Flow (perm)	0	1279	1334	1173	1438	0	1569	1569
Right Turn on Red						No		
Satd. Flow (RTOR)								
Link Speed (mph)		30	30		25		30	30
Link Distance (ft)		408	294		340		356	325
Travel Time (s)		9.3	6.7		9.3		8.1	7.4
Peak Hour Factor	0.90	0.90	0.82	0.82	0.80	0.80	0.92	0.92
Bus Blockages (#/hr)	0	2	0	0	0	0	0	0
Parking (#/hr)		6	4	4				
Adj. Flow (vph)	18	367	398	61	56	41	9	9
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	385	398	61	97	0	9	9
Enter Blocked Intersection	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right	Left	Left
Median Width(ft)		0	0		12		0	0
Link Offset(ft)		0	0		0		0	0
Crosswalk Width(ft)		16	16		16		16	16
Two way Left Turn Lane								
Headway Factor	1.24	1.55	1.51	1.45	1.24	1.24	1.24	1.24
Turning Speed (mph)	15			9	15	9		
Number of Detectors	1	2	2	1	1		2	2
Detector Template	Left	Thru	Thru	Right	Left		Thru	Thru
Leading Detector (ft)	20	100	100	20	20		100	100
Trailing Detector (ft)	0	0	0	0	0		0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0
Detector 1 Size(ft)	20	6	6	20	20		6	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel								
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94	94				94	94
Detector 2 Size(ft)		6	6				6	6
Detector 2 Type		Cl+Ex	Cl+Ex				Cl+Ex	Cl+Ex
Detector 2 Channel								
Detector 2 Extend (s)		0.0	0.0				0.0	0.0

Lanes, Volumes, Timings  
3: Mission St & Meridian Ave

12/28/2021



Lane Group	EBL2	EBT	WBT	WBR	SBL	SBR2	NET	SWT
Turn Type	Perm	NA	NA	Perm	Prot		NA	NA
Protected Phases		2	6		4		9	9
Permitted Phases	2			6	4			
Detector Phase	2	2	6	6	4		9	9
Switch Phase								
Minimum Initial (s)	24.0	24.0	24.0	24.0	5.0		40.5	40.5
Minimum Split (s)	28.7	28.7	28.7	28.7	27.5		45.0	45.0
Total Split (s)	52.5	52.5	52.5	52.5	27.5		45.0	45.0
Total Split (%)	42.0%	42.0%	42.0%	42.0%	22.0%		36.0%	36.0%
Maximum Green (s)	47.8	47.8	47.8	47.8	23.3		40.5	40.5
Yellow Time (s)	3.2	3.2	3.2	3.2	3.2		3.5	3.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.0		1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		4.7	4.7	4.7	4.2		4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	1.0	1.0	1.0	1.0	3.5		3.0	3.0
Recall Mode	Min	Min	Min	Min	None		None	None
Walk Time (s)	5.0	5.0	5.0	5.0	5.0			
Flash Dont Walk (s)	12.0	12.0	16.0	16.0	18.0			
Pedestrian Calls (#/hr)	0	0	0	0	0			
Act Effct Green (s)		43.7	43.7	43.7	12.7		50.3	50.3
Actuated g/C Ratio		0.59	0.59	0.59	0.17		0.68	0.68
v/c Ratio		0.51	0.50	0.09	0.39		0.01	0.01
Control Delay		23.3	22.9	18.3	40.7		21.8	21.8
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0
Total Delay		23.3	22.9	18.3	40.7		21.8	21.8
LOS		C	C	B	D		C	C
Approach Delay		23.3	22.3		40.7		21.8	21.8
Approach LOS		C	C		D		C	C
Queue Length 50th (ft)		48	49	6	19		0	0
Queue Length 95th (ft)		#392	343	55	110		17	17
Internal Link Dist (ft)		328	214		260		276	245
Turn Bay Length (ft)				65				
Base Capacity (vph)		977	1019	896	566		1074	1074
Starvation Cap Reductn		0	0	0	0		0	0
Spillback Cap Reductn		0	0	0	0		0	0
Storage Cap Reductn		0	0	0	0		0	0
Reduced v/c Ratio		0.39	0.39	0.07	0.17		0.01	0.01

Intersection Summary	
Area Type:	Other
Cycle Length:	125
Actuated Cycle Length:	73.5
Natural Cycle:	105
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.51
Intersection Signal Delay:	24.5
Intersection Capacity Utilization	87.0%
Intersection LOS:	C
ICU Level of Service	E

Lanes, Volumes, Timings  
 3: Mission St & Meridian Ave





12/28/2021

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Mission St & Meridian Ave

 Ø2	 Ø4	 Ø9
52.5 s	27.5 s	45 s
 Ø6		
52.5 s		

Lanes, Volumes, Timings  
 4: Mission St & Orange Grove Ave

12/28/2021



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	279	263	256	110	120	185
Future Volume (vph)	279	263	256	110	120	185
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	11	12	11	11
Storage Length (ft)	0			0	100	100
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88
Fr <sub>t</sub>			0.959			0.850
Fl <sub>t</sub> Protected	0.950				0.950	
Satd. Flow (prot)	1391	1279	1236	0	1441	2268
Fl <sub>t</sub> Permitted	0.502				0.950	
Satd. Flow (perm)	735	1279	1236	0	1441	2268
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			53			231
Link Speed (mph)		30	30		30	
Link Distance (ft)		161	588		432	
Travel Time (s)		3.7	13.4		9.8	
Peak Hour Factor	0.80	0.80	0.87	0.87	0.80	0.80
Bus Blockages (#/hr)	0	2	0	0	0	0
Parking (#/hr)		10	10	10		
Adj. Flow (vph)	349	329	294	126	150	231
Shared Lane Traffic (%)						
Lane Group Flow (vph)	349	329	420	0	150	231
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.35	1.59	1.58	1.24	1.30	1.30
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	6	6		20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			

Lanes, Volumes, Timings  
4: Mission St & Orange Grove Ave

12/28/2021



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Detector Phase	4	4	8		6	6
Switch Phase						
Minimum Initial (s)	30.0	30.0	30.0		4.0	4.0
Minimum Split (s)	35.0	35.0	35.0		24.0	24.0
Total Split (s)	36.0	36.0	36.0		24.0	24.0
Total Split (%)	60.0%	60.0%	60.0%		40.0%	40.0%
Maximum Green (s)	31.0	31.0	31.0		20.0	20.0
Yellow Time (s)	4.0	4.0	4.0		3.0	3.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Min	Min	Min		None	None
Walk Time (s)			20.0		8.0	8.0
Flash Dont Walk (s)			10.0		12.0	12.0
Pedestrian Calls (#/hr)			0		0	0
Act Effct Green (s)	31.1	31.1	31.1		10.4	10.4
Actuated g/C Ratio	0.61	0.61	0.61		0.21	0.21
v/c Ratio	0.77	0.42	0.54		0.51	0.35
Control Delay	24.6	7.9	8.8		23.8	4.6
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	24.6	7.9	8.8		23.8	4.6
LOS	C	A	A		C	A
Approach Delay		16.5	8.8		12.2	
Approach LOS		B	A		B	
Queue Length 50th (ft)	62	42	49		40	0
Queue Length 95th (ft)	#194	90	132		71	16
Internal Link Dist (ft)		81	508		352	
Turn Bay Length (ft)					100	100
Base Capacity (vph)	452	786	780		572	1039
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	0.77	0.42	0.54		0.26	0.22

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	50.6
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.77
Intersection Signal Delay:	13.2
Intersection Capacity Utilization:	69.6%
Intersection LOS:	B
ICU Level of Service:	C



# Lanes, Volumes, Timings

## 4: Mission St & Orange Grove Ave

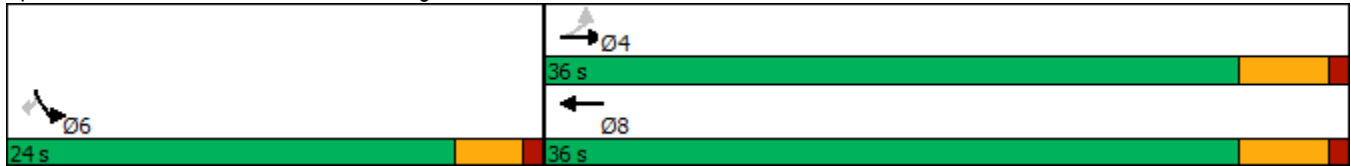
12/28/2021

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Mission St & Orange Grove Ave



Lanes, Volumes, Timings  
5: Fair Oaks Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Volume (vph)	18	26	26	5	25	3	76	1166	14	8	945	51
Future Volume (vph)	18	26	26	5	25	3	76	1166	14	8	945	51
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	11	12	10	11	12
Storage Length (ft)	0		0	0		0	75		0	75		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.950			0.987			0.998			0.992	
Flt Protected		0.987			0.993		0.950			0.950		
Satd. Flow (prot)	0	1422	0	0	1486	0	1652	3414	0	1652	3394	0
Flt Permitted		0.904			0.966		0.233			0.196		
Satd. Flow (perm)	0	1302	0	0	1446	0	405	3414	0	341	3394	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			4			2			9	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		420			404			386			375	
Travel Time (s)		11.5			11.0			8.8			8.5	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	23	33	33	6	31	4	83	1267	15	9	1005	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	89	0	0	41	0	83	1282	0	9	1059	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.30	1.24	1.24	1.30	1.24	1.09	1.04	1.00	1.09	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		1	6		5	2	

Lanes, Volumes, Timings  
5: Fair Oaks Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		4.0	10.0		4.0	10.0	
Minimum Split (s)	27.0	27.0		27.0	27.0		7.0	34.0		8.0	34.0	
Total Split (s)	29.0	29.0		29.0	29.0		9.0	63.0		8.0	62.0	
Total Split (%)	29.0%	29.0%		29.0%	29.0%		9.0%	63.0%		8.0%	62.0%	
Maximum Green (s)	24.5	24.5		24.5	24.5		6.0	59.0		4.0	58.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.0	0.0		1.0	0.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		3.0	4.0		4.0	4.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	2.0		2.5	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)	7.0	7.0		6.0	6.0			9.0			9.0	
Flash Dont Walk (s)	15.5	15.5		16.5	16.5			21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		11.5			11.5		83.5	81.8		79.6	76.3	
Actuated g/C Ratio		0.12			0.12		0.84	0.82		0.80	0.76	
v/c Ratio		0.51			0.24		0.20	0.46		0.03	0.41	
Control Delay		39.5			39.9		3.3	4.8		1.4	2.7	
Queue Delay		0.0			0.0		0.0	0.1		0.0	0.1	
Total Delay		39.5			39.9		3.3	5.0		1.4	2.9	
LOS		D			D		A	A		A	A	
Approach Delay		39.5			39.9			4.9			2.9	
Approach LOS		D			D			A			A	
Queue Length 50th (ft)		37			22		7	93		1	61	
Queue Length 95th (ft)		71			46		20	258		m1	47	
Internal Link Dist (ft)		340			324			306			295	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)		340			357		416	2792		338	2590	
Starvation Cap Reductn		0			0		0	0		0	570	
Spillback Cap Reductn		4			0		0	533		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.26			0.11		0.20	0.57		0.03	0.52	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 34 (34%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.51

Lanes, Volumes, Timings  
 5: Fair Oaks Ave & El Centro St

12/28/2021

Intersection Signal Delay: 5.8	Intersection LOS: A
Intersection Capacity Utilization 54.8%	ICU Level of Service A
Analysis Period (min) 15	



















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

Splits and Phases: 5: Fair Oaks Ave & El Centro St

 Ø1 9 s	 Ø2 (R) 62 s	 Ø4 29 s
 Ø5 8 s	 Ø6 (R) 63 s	 Ø8 29 s

Lanes, Volumes, Timings  
6: Fremont Ave & El Centro St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	86	33	16	69	24	25	832	8	5	687	27
Future Volume (vph)	19	86	33	16	69	24	25	832	8	5	687	27
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	10	12	12	10	12	12
Storage Length (ft)	0		0	0		0	75		0	75		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.968			0.970			0.998			0.994	
Flt Protected		0.993			0.993		0.950			0.950		
Satd. Flow (prot)	0	1558	0	0	1561	0	1391	1565	0	1391	1559	0
Flt Permitted		0.941			0.942		0.246			0.179		
Satd. Flow (perm)	0	1476	0	0	1481	0	360	1565	0	262	1559	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26			24			1				5
Link Speed (mph)		25			25			30				30
Link Distance (ft)		632			417			438				375
Travel Time (s)		17.2			11.4			10.0				8.5
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.94	0.94	0.94	0.91	0.91	0.91
Adj. Flow (vph)	24	108	41	20	86	30	27	885	9	5	755	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	173	0	0	136	0	27	894	0	5	785	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.35	1.24	1.24	1.35	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	

Lanes, Volumes, Timings  
6: Fremont Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	22.0	22.0		22.0	22.0		38.0	38.0		38.0	38.0	
Total Split (%)	36.7%	36.7%		36.7%	36.7%		63.3%	63.3%		63.3%	63.3%	
Maximum Green (s)	17.0	17.0		17.0	17.0		33.0	33.0		33.0	33.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.5	4.5		4.5	4.5		4.0	4.0		4.0	4.0	
Minimum Gap (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	1.5	1.5		1.5	1.5		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		C-Min	C-Min		C-Min	C-Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		12.6			12.6		37.4	37.4		37.4	37.4	
Actuated g/C Ratio		0.21			0.21		0.62	0.62		0.62	0.62	
v/c Ratio		0.52			0.41		0.12	0.92		0.03	0.81	
Control Delay		22.7			19.6		7.7	29.5		3.2	14.5	
Queue Delay		1.7			1.0		0.0	5.0		0.0	11.3	
Total Delay		24.5			20.6		7.7	34.5		3.2	25.8	
LOS		C			C		A	C		A	C	
Approach Delay		24.5			20.6			33.8			25.7	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)		47			35		3	240		0	245	
Queue Length 95th (ft)		77			61		16	#566		m1	m#433	
Internal Link Dist (ft)		552			337			358			295	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)		436			436		224	975		163	973	
Starvation Cap Reductn		0			0		0	0		0	173	
Spillback Cap Reductn		141			141		0	52		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.59			0.46		0.12	0.97		0.03	0.98	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 36 (60%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.92

Lanes, Volumes, Timings  
6: Fremont Ave & El Centro St

12/28/2021

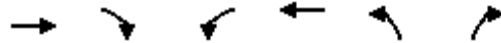
Intersection Signal Delay: 28.9	Intersection LOS: C
Intersection Capacity Utilization 72.7%	ICU Level of Service C
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 6: Fremont Ave & El Centro St



Lanes, Volumes, Timings  
7: Meridian Ave & El Centro St

12/28/2021



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	115	124	53	110	71	21
Future Volume (vph)	115	124	53	110	71	21
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	13	12	12	13	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.930				0.969	
Flt Protected				0.984	0.963	
Satd. Flow (prot)	1507	0	0	1595	1464	0
Flt Permitted				0.984	0.963	
Satd. Flow (perm)	1507	0	0	1595	1464	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	1194			309	450	
Travel Time (s)	32.6			8.4	12.3	
Peak Hour Factor	0.81	0.81	0.80	0.80	0.80	0.80
Adj. Flow (vph)	142	153	66	138	89	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	295	0	0	204	115	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.19	1.24	1.24	1.19	1.24	1.24
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Stop	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	42.7%
	ICU Level of Service A
Analysis Period (min)	15



Lanes, Volumes, Timings  
8: orange Grove Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	↕
Traffic Volume (vph)	16	121	14	5	120	56	20	83	6	112	82	15
Future Volume (vph)	16	121	14	5	120	56	20	83	6	112	82	15
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	12	13	12	13	13	12
Storage Length (ft)	0		0	0		0	0		0	0		75
Storage Lanes	0		0	0		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987			0.958			0.992			0.977	
Flt Protected		0.995			0.999			0.991		0.950		
Satd. Flow (prot)	0	1592	0	0	1551	0	0	1593	0	1540	1584	0
Flt Permitted		0.995			0.999			0.991		0.950		
Satd. Flow (perm)	0	1592	0	0	1551	0	0	1593	0	1540	1584	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		426			1194			450			376	
Travel Time (s)		11.6			32.6			12.3			10.3	
Peak Hour Factor	0.88	0.88	0.88	0.87	0.87	0.87	0.80	0.80	0.80	0.87	0.87	0.87
Adj. Flow (vph)	18	138	16	6	138	64	25	104	8	129	94	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	172	0	0	208	0	0	137	0	129	111	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.19	1.24	1.19	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	38.5%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
 9: Pasadena Ave & El Centro St

12/28/2021

























Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖				↑	↗	↘	↑	
Traffic Volume (vph)	1	0	2	19	0	35	1	105	70	64	65	1
Future Volume (vph)	1	0	2	19	0	35	1	105	70	64	65	1
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	12	14	12	14	12	11	14	12	11	12
Storage Length (ft)	0		0	0		0	0		75	100		0
Storage Lanes	0		0	1		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.899			0.865				0.850		0.998	
Flt Protected		0.988		0.950						0.950		
Satd. Flow (prot)	0	1393	0	1590	0	0	0	1516	1411	1490	1513	0
Flt Permitted		0.988		0.950						0.950		
Satd. Flow (perm)	0	1393	0	1590	0	0	0	1516	1411	1490	1513	0
Link Speed (mph)		30			25			30			30	
Link Distance (ft)		367			417			410			724	
Travel Time (s)		8.3			11.4			9.3			16.5	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	0
Adj. Flow (vph)	1	0	3	24	0	44	1	131	88	80	81	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	24	44	0	0	132	88	80	82	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		14			14			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.24	1.24	1.24	1.15	1.24	1.15	1.24	1.30	1.16	1.24	1.30	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization Err%	ICU Level of Service H
Analysis Period (min)	15

Lanes, Volumes, Timings  
11: Fremont Ave & Monterey Rd

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	564	236	89	559	39	151	750	32	40	640	31
Future Volume (vph)	90	564	236	89	559	39	151	750	32	40	640	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	12	12	10	12	12	10	10	16	10	10	16
Storage Length (ft)	150		0	125		0	100		50	100		40
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25		25			
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.956			0.990				0.850			0.850
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	3383	0	1652	3504	0	1391	1464	1511	1391	1464	1511
Fl <sub>t</sub> Permitted	0.235			0.235			0.260			0.164		
Satd. Flow (perm)	409	3383	0	409	3504	0	381	1464	1511	240	1464	1511
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		107			12				36			36
Link Speed (mph)		35			35			30				30
Link Distance (ft)		666			643			396				474
Travel Time (s)		13.0			12.5			9.0				10.8
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.91	0.91	0.91	0.93	0.93	0.93
Adj. Flow (vph)	113	705	295	111	699	49	166	824	35	43	688	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	113	1000	0	111	748	0	166	824	35	43	688	33
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.09	1.00	1.00	1.09	1.00	1.00	1.35	1.35	1.06	1.35	1.35	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			4			2				2

Lanes, Volumes, Timings  
 11: Fremont Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			4			2		2	2		2
Detector Phase	4	4		4	4		2	2	2	2	2	2
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	22.0	22.0		22.0	22.0		38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	36.7%	36.7%		36.7%	36.7%		63.3%	63.3%	63.3%	63.3%	63.3%	63.3%
Maximum Green (s)	17.0	17.0		17.0	17.0		33.0	33.0	33.0	33.0	33.0	33.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.5	4.5		4.5	4.5		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Gap (s)	3.5	3.5		3.5	3.5		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	1.5	1.5		1.5	1.5		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	17.0	17.0		17.0	17.0		33.0	33.0	33.0	33.0	33.0	33.0
Actuated g/C Ratio	0.28	0.28		0.28	0.28		0.55	0.55	0.55	0.55	0.55	0.55
v/c Ratio	0.98	0.97		0.97	0.75		0.79	1.02	0.04	0.33	0.85	0.04
Control Delay	110.2	42.4		105.7	24.8		43.2	55.3	2.7	15.8	25.0	2.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	110.2	42.4		105.7	24.8		43.2	55.3	2.7	15.8	25.0	2.5
LOS	F	D		F	C		D	E	A	B	C	A
Approach Delay		49.3			35.3			51.5			23.5	
Approach LOS		D			D			D			C	
Queue Length 50th (ft)	40	168		39	126		43	~290	0	8	190	0
Queue Length 95th (ft)	#109	#232		#107	155		#150	#520	10	32	#403	9
Internal Link Dist (ft)		586			563			316			394	
Turn Bay Length (ft)	150			125			100		50	100		40
Base Capacity (vph)	115	1035		115	1001		209	805	847	132	805	847
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.97		0.97	0.75		0.79	1.02	0.04	0.33	0.85	0.04

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 36 (60%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.02

# Lanes, Volumes, Timings

## 11: Fremont Ave & Monterey Rd

12/28/2021

Intersection Signal Delay: 41.5 Intersection LOS: D

Intersection Capacity Utilization 94.9% ICU Level of Service F

Analysis Period (min) 15

~ 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.

Splits and Phases: 11: Fremont Ave & Monterey Rd



Lanes, Volumes, Timings  
12: Meridian Ave & Monterey Rd

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	921	204	31	805	5	344	149	48	50	118	6
Future Volume (vph)	26	921	204	31	805	5	344	149	48	50	118	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	12	10	11	12	12	13	12	12	13	12
Storage Length (ft)	225		0	175		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.973			0.999			0.988			0.995	
Flt Protected	0.950			0.950				0.969			0.986	
Satd. Flow (prot)	1652	3329	0	1652	3418	0	0	1552	0	0	1590	0
Flt Permitted	0.192			0.133				0.704			0.824	
Satd. Flow (perm)	334	3329	0	231	3418	0	0	1127	0	0	1329	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		54			1			9			3	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1211			592			371			479	
Travel Time (s)		23.6			11.5			10.1			13.1	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.95	0.95	0.95	0.91	0.91	0.91
Adj. Flow (vph)	33	1151	255	39	1006	6	362	157	51	55	130	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	1406	0	39	1012	0	0	570	0	0	192	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.00	1.09	1.04	1.00	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	

Lanes, Volumes, Timings  
 12: Meridian Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	30.0	30.0		30.0	30.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	35.0	35.0		35.0	35.0		24.5	24.5		24.5	24.5	
Total Split (s)	35.0	35.0		35.0	35.0		30.0	30.0		30.0	30.0	
Total Split (%)	53.8%	53.8%		53.8%	53.8%		46.2%	46.2%		46.2%	46.2%	
Maximum Green (s)	30.0	30.0		30.0	30.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0			0.0		
Total Lost Time (s)	5.0	5.0		5.0	5.0		4.0			4.0		
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	30.0	30.0		30.0	30.0		26.0			26.0		
Actuated g/C Ratio	0.46	0.46		0.46	0.46		0.40			0.40		
v/c Ratio	0.21	0.90		0.37	0.64		1.25			0.36		
Control Delay	14.9	25.3		23.6	15.7		152.5			15.9		
Queue Delay	0.0	0.0		0.0	0.0		0.0			0.0		
Total Delay	14.9	25.3		23.6	15.7		152.5			15.9		
LOS	B	C		C	B		F			B		
Approach Delay	25.0			16.0			152.5			15.9		
Approach LOS	C			B			F			B		
Queue Length 50th (ft)	7	246		10	152		~291			50		
Queue Length 95th (ft)	22	274		31	176		#471			98		
Internal Link Dist (ft)	1131			512			291			399		
Turn Bay Length (ft)	225			175								
Base Capacity (vph)	154	1565		106	1578		456			533		
Starvation Cap Reductn	0	0		0	0		0			0		
Spillback Cap Reductn	0	0		0	0		0			0		
Storage Cap Reductn	0	0		0	0		0			0		
Reduced v/c Ratio	0.21	0.90		0.37	0.64		1.25			0.36		

Intersection Summary

Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	65
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.25
Intersection Signal Delay:	43.9
Intersection LOS:	D
Intersection Capacity Utilization:	89.3%
ICU Level of Service:	E
Analysis Period (min):	15

~ Volume exceeds capacity, queue is theoretically infinite.

Lanes, Volumes, Timings  
12: Meridian Ave & Monterey Rd

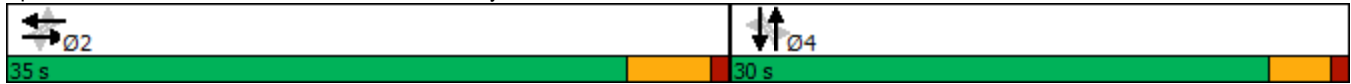
12/28/2021

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 12: Meridian Ave & Monterey Rd





Lanes, Volumes, Timings  
 13: Orange Grove Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	1041	2	7	978	170	1	3	6	104	1	32
Future Volume (vph)	17	1041	2	7	978	170	1	3	6	104	1	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	12	10	11	12	12	13	12	12	13	12
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.978			0.917				0.968
Fl <sub>t</sub> Protected	0.950			0.950				0.996				0.963
Satd. Flow (prot)	1652	3421	0	1652	3346	0	0	1480	0	0	1511	0
Fl <sub>t</sub> Permitted	0.157			0.194				0.996				0.963
Satd. Flow (perm)	273	3421	0	337	3346	0	0	1480	0	0	1511	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					20			8				15
Link Speed (mph)		35			35			25				25
Link Distance (ft)		429			1211			316				446
Travel Time (s)		8.4			23.6			8.6				12.2
Peak Hour Factor	0.87	0.87	0.87	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	20	1197	2	8	1151	200	1	4	8	130	1	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	1199	0	8	1351	0	0	13	0	0	171	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.00	1.09	1.04	1.00	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases		2			6		3	3		4		4

Lanes, Volumes, Timings  
 13: Orange Grove Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2				6							
Detector Phase	2	2			6	6	3	3			4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0	5.0	5.0	5.0			5.0	5.0
Minimum Split (s)	24.0	24.0			24.0	24.0	31.5	31.5			31.5	31.5
Total Split (s)	36.0	36.0			36.0	36.0	32.0	32.0			32.0	32.0
Total Split (%)	36.0%	36.0%			36.0%	36.0%	32.0%	32.0%			32.0%	32.0%
Maximum Green (s)	31.0	31.0			31.0	31.0	27.5	27.5			27.5	27.5
Yellow Time (s)	4.0	4.0			4.0	4.0	3.5	3.5			3.5	3.5
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0			1.0	1.0
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0				0.0	
Total Lost Time (s)	5.0	5.0			5.0	5.0	4.5				4.5	
Lead/Lag							Lead	Lead			Lag	Lag
Lead-Lag Optimize?							Yes	Yes			Yes	Yes
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode	C-Min	C-Min			C-Min	C-Min	None	None			None	None
Walk Time (s)	7.0	7.0			7.0	7.0	7.0	7.0			7.0	7.0
Flash Dont Walk (s)	12.0	12.0			12.0	12.0	20.0	20.0			20.0	20.0
Pedestrian Calls (#/hr)	0	0			0	0	0	0			0	0
Act Effct Green (s)	72.4	72.4			72.4	72.4	6.2				15.7	
Actuated g/C Ratio	0.72	0.72			0.72	0.72	0.06				0.16	
v/c Ratio	0.10	0.48			0.03	0.56	0.13				0.69	
Control Delay	8.8	8.2			7.7	9.0	32.4				49.5	
Queue Delay	0.0	0.0			0.0	0.0	0.0				0.0	
Total Delay	8.8	8.2			7.7	9.0	32.4				49.5	
LOS	A	A			A	A	C				D	
Approach Delay	8.2				9.0		32.4				49.5	
Approach LOS	A				A		C				D	
Queue Length 50th (ft)	3	129			1	156	3				95	
Queue Length 95th (ft)	19	306			9	352	19				132	
Internal Link Dist (ft)	349				1131		236				366	
Turn Bay Length (ft)	75				75							
Base Capacity (vph)	197	2476			243	2427	412				426	
Starvation Cap Reductn	0	0			0	0	0				0	
Spillback Cap Reductn	0	0			0	0	0				0	
Storage Cap Reductn	0	0			0	0	0				0	
Reduced v/c Ratio	0.10	0.48			0.03	0.56	0.03				0.40	





Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle:	110
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.69
Intersection Signal Delay:	11.3
Intersection LOS:	B
Intersection Capacity Utilization:	56.3%
ICU Level of Service:	B
Analysis Period (min):	15

Lanes, Volumes, Timings  
 13: Orange Grove Ave & Monterey Rd

12/28/2021

Splits and Phases: 13: Orange Grove Ave & Monterey Rd

 Ø2 (R)	 Ø3	 Ø4
36 s	32 s	32 s
 Ø5 (R)		
36 s		

Lanes, Volumes, Timings  
 16: Meridian Ave & Hope St

12/28/2021




















Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	3	53	69	16	60	85
Future Volume (vph)	3	53	69	16	60	85
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	13	12	12	13
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.873		0.975			
Flt Protected	0.997					0.980
Satd. Flow (prot)	1365	0	1580	0	0	1588
Flt Permitted	0.997					0.980
Satd. Flow (perm)	1365	0	1580	0	0	1588
Link Speed (mph)	25		25			25
Link Distance (ft)	299		340			399
Travel Time (s)	8.2		9.3			10.9
Peak Hour Factor	0.80	0.80	0.80	0.80	0.83	0.83
Adj. Flow (vph)	4	66	86	20	72	102
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	0	106	0	0	174
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.24	1.24	1.19	1.24	1.24	1.19
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	26.7%
	ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings  
17: Fremont Ave & Grevelia St

12/28/2021

												
Lane Group	EBL2	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	NET
Lane Configurations												
Traffic Volume (vph)	5	7	13	2	10	7	8	792	2	2	632	8
Future Volume (vph)	5	7	13	2	10	7	8	792	2	2	632	8
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	12	12	12	12	12	14	12	12	14	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.930			0.951							
Flt Protected		0.990			0.994			0.999				
Satd. Flow (prot)	0	1444	0	0	1483	0	0	1672	0	0	1673	1569
Flt Permitted		0.921			0.952			0.993			0.999	
Satd. Flow (perm)	0	1344	0	0	1420	0	0	1661	0	0	1672	1569
Right Turn on Red										Yes		
Satd. Flow (RTOR)								62				
Link Speed (mph)		25			25			30			30	30
Link Distance (ft)		1201			446			255			617	309
Travel Time (s)		32.8			12.2			5.8			14.0	7.0
Peak Hour Factor	0.88	0.88	0.88	0.80	0.80	0.80	0.91	0.91	0.91	0.82	0.82	0.92
Adj. Flow (vph)	6	8	15	3	13	9	9	870	2	2	771	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	29	0	0	25	0	0	881	0	0	773	9
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Left
Median Width(ft)		0			0			0			0	0
Link Offset(ft)		0			0			0			0	0
Crosswalk Width(ft)		16			16			16			16	16
Two way Left Turn Lane												
Headway Factor	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.15	1.24	1.24	1.15	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		
Number of Detectors	1	2		1	2		1	2		1	2	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Thru
Leading Detector (ft)	20	100		20	100		20	100		20	100	100
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	6
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	94
Detector 2 Size(ft)		6			6			6			6	6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	NA
Protected Phases		4			8			2			6	9
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	9
Switch Phase												

Lanes, Volumes, Timings  
 17: Fremont Ave & Grevelia St

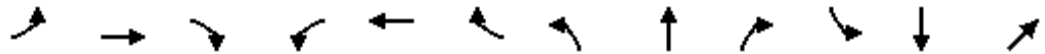
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Lane Group	SWT
Lane Configurations	↑
Traffic Volume (vph)	8
Future Volume (vph)	8
Ideal Flow (vphpl)	1600
Lane Width (ft)	12
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	1569
Flt Permitted	
Satd. Flow (perm)	1569
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	30
Link Distance (ft)	405
Travel Time (s)	9.2
Peak Hour Factor	0.92
Adj. Flow (vph)	9
Shared Lane Traffic (%)	
Lane Group Flow (vph)	9
Enter Blocked Intersection	No
Lane Alignment	Left
Median Width(ft)	0
Link Offset(ft)	0
Crosswalk Width(ft)	16
Two way Left Turn Lane	
Headway Factor	1.24
Turning Speed (mph)	
Number of Detectors	2
Detector Template	Thru
Leading Detector (ft)	100
Trailing Detector (ft)	0
Detector 1 Position(ft)	0
Detector 1 Size(ft)	6
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	94
Detector 2 Size(ft)	6
Detector 2 Type	Cl+Ex
Detector 2 Channel	
Detector 2 Extend (s)	0.0
Turn Type	NA
Protected Phases	9
Permitted Phases	
Detector Phase	9
Switch Phase	

Lanes, Volumes, Timings  
17: Fremont Ave & Grevelia St

12/28/2021



Lane Group	EBL2	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	NET
Minimum Initial (s)	10.0	10.0		6.0	6.0		40.0	40.0		40.0	40.0	40.5
Minimum Split (s)	20.0	20.0		11.0	11.0		45.0	45.0		45.0	45.0	45.0
Total Split (s)	25.0	25.0		25.0	25.0		45.0	45.0		45.0	45.0	45.0
Total Split (%)	21.7%	21.7%		21.7%	21.7%		39.1%	39.1%		39.1%	39.1%	39.1%
Maximum Green (s)	20.0	20.0		20.0	20.0		40.0	40.0		40.0	40.0	40.5
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		5.0			5.0			5.0			5.0	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.5	3.5		3.5	3.5		0.2	0.2		0.2	0.2	3.0
Recall Mode	None	None		None	None		Max	Max		Max	Max	None
Walk Time (s)	7.0	7.0								7.0	7.0	
Flash Dont Walk (s)	8.0	8.0								7.0	7.0	
Pedestrian Calls (#/hr)	0	0								0	0	
Act Effct Green (s)		10.9			8.3			53.5			53.5	45.1
Actuated g/C Ratio		0.16			0.13			0.81			0.81	0.68
v/c Ratio		0.13			0.14			0.65			0.57	0.01
Control Delay		31.7			32.8			14.8			14.4	11.6
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		31.7			32.8			14.8			14.4	11.6
LOS		C			C			B			B	B
Approach Delay		31.7			32.8			14.8			14.4	11.6
Approach LOS		C			C			B			B	B
Queue Length 50th (ft)		6			6			0			0	0
Queue Length 95th (ft)		46			37			#996			#761	14
Internal Link Dist (ft)		1121			366			175			537	229
Turn Bay Length (ft)												
Base Capacity (vph)		439			464			1355			1352	1069
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		0.07			0.05			0.65			0.57	0.01






Intersection Summary

Area Type: Other  
 Cycle Length: 115  
 Actuated Cycle Length: 66.2  
 Natural Cycle: 140  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.65  
 Intersection Signal Delay: 15.2      Intersection LOS: B  
 Intersection Capacity Utilization 110.7%      ICU Level of Service H  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Lanes, Volumes, Timings  
 17: Fremont Ave & Grevelia St

12/28/2021

Splits and Phases: 17: Fremont Ave & Grevelia St

 45 s	 25 s	 45 s
 45 s	 25 s	





Lane Group	SWT
Minimum Initial (s)	40.5
Minimum Split (s)	45.0
Total Split (s)	45.0
Total Split (%)	39.1%
Maximum Green (s)	40.5
Yellow Time (s)	3.5
All-Red Time (s)	1.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.5
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	45.1
Actuated g/C Ratio	0.68
v/c Ratio	0.01
Control Delay	11.6
Queue Delay	0.0
Total Delay	11.6
LOS	B
Approach Delay	11.6
Approach LOS	B
Queue Length 50th (ft)	0
Queue Length 95th (ft)	14
Internal Link Dist (ft)	325
Turn Bay Length (ft)	
Base Capacity (vph)	1069
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.01
<b>Intersection Summary</b>	

Lanes, Volumes, Timings  
18: Meridian Ave & Grevelia St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	↕
Traffic Volume (vph)	5	18	13	2	14	2	15	86	5	2	59	6
Future Volume (vph)	5	18	13	2	14	2	15	86	5	2	59	6
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	12	10	10	12	10	10
Storage Length (ft)	0		0	0		0	0		100	0		100
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.952			0.983				0.850			0.850
Flt Protected		0.993			0.994			0.993			0.998	
Satd. Flow (prot)	0	1532	0	0	1584	0	0	1454	1244	0	1461	1244
Flt Permitted		0.993			0.994			0.993			0.998	
Satd. Flow (perm)	0	1532	0	0	1584	0	0	1454	1244	0	1461	1244
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		441			1201			251			624	
Travel Time (s)		12.0			32.8			6.8			17.0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.84	0.84	0.84	0.80	0.80	0.80
Adj. Flow (vph)	6	23	16	3	18	3	18	102	6	3	74	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	45	0	0	24	0	0	120	6	0	77	8
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.35	1.35	1.24	1.35	1.35
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other

















Control Type: Unsignalized

Intersection Capacity Utilization 23.1% ICU Level of Service A

Analysis Period (min) 15

Lanes, Volumes, Timings  
19: Diamond Ave & Mission St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	355	6	25	336	1	26	0	46	0	0	0
Future Volume (vph)	0	355	6	25	336	1	26	0	46	0	0	0
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	11	12	12	11	12	10	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998						0.914				
Flt Protected					0.997			0.982				
Satd. Flow (prot)	0	1362	0	0	1338	0	0	1408	0	0	1569	0
Flt Permitted					0.997			0.982				
Satd. Flow (perm)	0	1362	0	0	1338	0	0	1408	0	0	1569	0
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		294			324			374			223	
Travel Time (s)		6.7			7.4			10.2			5.1	
Peak Hour Factor	0.84	0.84	0.84	0.88	0.88	0.88	0.87	0.87	0.87	0.25	0.25	0.25
Parking (#/hr)		0	0		3	3						
Adj. Flow (vph)	0	423	7	28	382	1	30	0	53	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	430	0	0	411	0	0	83	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.47	1.24	1.24	1.50	1.24	1.35	1.24	1.24	1.24	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	57.3%
Analysis Period (min)	15
	ICU Level of Service B

Lanes, Volumes, Timings  
20: Fairview Ave & Mission St

12/28/2021



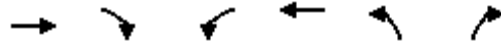
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	14	359	28	31	343	24	3	5	13	12	19	16
Future Volume (vph)	14	359	28	31	343	24	3	5	13	12	19	16
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	11	12	12	11	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.992			0.917			0.954	
Flt Protected		0.998			0.996			0.992			0.987	
Satd. Flow (prot)	0	1297	0	0	1273	0	0	1427	0	0	1477	0
Flt Permitted		0.998			0.996			0.992			0.987	
Satd. Flow (perm)	0	1297	0	0	1273	0	0	1427	0	0	1477	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		324			613			381			228	
Travel Time (s)		7.4			13.9			10.4			6.2	
Peak Hour Factor	0.94	0.94	0.94	0.86	0.86	0.86	0.80	0.80	0.80	0.80	0.80	0.80
Parking (#/hr)		7	7		10	10						
Adj. Flow (vph)	15	382	30	36	399	28	4	6	16	15	24	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	427	0	0	463	0	0	26	0	0	59	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.55	1.24	1.24	1.58	1.24	1.24	1.24	1.24	1.24	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	50.7%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
21: Pasadena Ave & Mission St

12/28/2021



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	210	23	107	141	29	112
Future Volume (vph)	210	23	107	141	29	112
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	13	13	12	12	11	14
Storage Length (ft)		0	0		100	100
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1621	1378	1490	1569	1441	2493
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1621	1378	1490	1569	1441	2493
Link Speed (mph)	30			30	30	
Link Distance (ft)	267			367	724	
Travel Time (s)	6.1			8.3	16.5	
Peak Hour Factor	0.88	0.88	0.80	0.80	0.80	0.80
Bus Blockages (#/hr)	0	0	0	0	0	2
Adj. Flow (vph)	239	26	134	176	36	140
Shared Lane Traffic (%)						
Lane Group Flow (vph)	239	26	134	176	36	140
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane					Yes	
Headway Factor	1.19	1.19	1.24	1.24	1.30	1.15
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Free	Free	

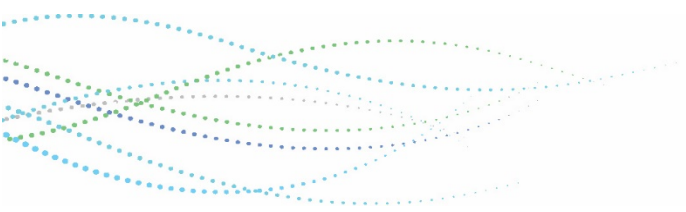
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	33.5%
ICU Level of Service	A
Analysis Period (min)	15



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## APPENDIX A: SYNCHRO OUTPUT SHEETS SCENARIO 3 - PM PEAK HOUR



Lanes, Volumes, Timings  
1: Fair Oaks Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	260	101	45	240	126	79	935	51	131	1236	95
Future Volume (vph)	109	260	101	45	240	126	79	935	51	131	1236	95
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	10	16	12	10	11	12	10	11	12
Storage Length (ft)	0		0	75		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr <sub>t</sub>		0.958			0.948			0.992			0.989	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1391	1241	0	1391	1685	0	1652	3360	0	1652	3336	0
Fl <sub>t</sub> Permitted	0.152			0.393			0.950			0.950		
Satd. Flow (perm)	223	1241	0	575	1685	0	1652	3360	0	1652	3336	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			25			7			10	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		427			901			375			717	
Travel Time (s)		9.7			20.5			8.5			16.3	
Peak Hour Factor	0.86	0.86	0.86	0.96	0.96	0.96	0.95	0.95	0.95	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	5	0	0	7	0
Parking (#/hr)		3	3									
Adj. Flow (vph)	127	302	117	47	250	131	83	984	54	142	1343	103
Shared Lane Traffic (%)												
Lane Group Flow (vph)	127	419	0	47	381	0	83	1038	0	142	1446	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.35	1.57	1.24	1.35	1.06	1.24	1.09	1.06	1.00	1.09	1.06	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
1: Fair Oaks Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases	3	8			4		1	6		5	2	
Permitted Phases	8			4								
Detector Phase	3	8		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	4.0	10.0		10.0	10.0		9.0	10.0		9.0	10.0	
Minimum Split (s)	8.5	28.5		27.0	27.0		13.5	25.0		13.5	25.0	
Total Split (s)	10.4	38.4		28.0	28.0		13.6	46.0		15.6	48.0	
Total Split (%)	10.4%	38.4%		28.0%	28.0%		13.6%	46.0%		15.6%	48.0%	
Maximum Green (s)	7.4	34.4		24.0	24.0		10.6	42.0		12.6	44.0	
Yellow Time (s)	3.0	3.5		3.5	3.5		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	0.5		0.5	0.5		0.0	0.0		0.0	0.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.5	3.0		3.0	3.0		1.5	4.0		1.5	4.0	
Minimum Gap (s)	2.5	3.0		3.0	3.0		1.5	3.0		1.5	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)		7.0		6.0	6.0			7.0			7.0	
Flash Dont Walk (s)		17.0		17.0	17.0			13.0			13.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	34.8	33.8		23.2	23.2		9.6	43.7		11.5	48.0	
Actuated g/C Ratio	0.35	0.34		0.23	0.23		0.10	0.44		0.12	0.48	
v/c Ratio	0.77	0.97		0.35	0.93		0.52	0.70		0.75	0.90	
Control Delay	55.1	68.6		40.3	65.7		65.4	22.3		67.0	34.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.5		0.0	0.0	
Total Delay	55.1	68.6		40.3	65.7		65.4	22.8		67.0	34.3	
LOS	E	E		D	E		E	C		E	C	
Approach Delay		65.5			62.9			26.0			37.2	
Approach LOS		E			E			C			D	
Queue Length 50th (ft)	57	248		25	222		52	298		88	447	
Queue Length 95th (ft)	#120	#411		62	#397		m107	368		#173	#633	
Internal Link Dist (ft)		347			821			295			637	
Turn Bay Length (ft)				75			150			150		
Base Capacity (vph)	165	440		138	423		175	1473		208	1605	
Starvation Cap Reductn	0	0		0	0		0	137		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.77	0.95		0.34	0.90		0.47	0.78		0.68	0.90	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow  
 Natural Cycle: 90



# Lanes, Volumes, Timings

## 1: Fair Oaks Ave & Mission St

12/28/2021

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 41.0

Intersection LOS: D

Intersection Capacity Utilization 89.9%

ICU Level of Service E




Analysis Period (min) 15

# 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.

Splits and Phases: 1: Fair Oaks Ave & Mission St

 Ø1	 Ø2 (R)	 Ø3	 Ø4
13.6 s	48 s	10.4 s	28 s
 Ø5	 Ø6 (R)	 Ø8	
15.6 s	46 s	38.4 s	

Lanes, Volumes, Timings  
2: Fremont Ave & Mission St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	329	135	46	320	74	122	738	26	115	608	38
Future Volume (vph)	38	329	135	46	320	74	122	738	26	115	608	38
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	10	12	10	10	12	10	10	10	10	10	10
Storage Length (ft)	95		50	200		50	190		100	165		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>			0.850			0.850			0.850			0.850
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1391	1264	1151	1391	1249	1137	1391	1464	1244	1391	1464	1244
Fl <sub>t</sub> Permitted	0.380			0.324			0.275			0.185		
Satd. Flow (perm)	556	1264	1151	474	1249	1137	403	1464	1244	271	1464	1244
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			103			58			27			41
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		613			414			375			744	
Travel Time (s)		13.9			9.4			8.5			16.9	
Peak Hour Factor	0.88	0.88	0.88	0.95	0.95	0.95	0.92	0.92	0.92	0.90	0.90	0.90
Bus Blockages (#/hr)	0	2	2	0	2	2	0	0	0	0	0	0
Parking (#/hr)		6	6		8	8						
Adj. Flow (vph)	43	374	153	48	337	78	133	802	28	128	676	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	374	153	48	337	78	133	802	28	128	676	42
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.35	1.62	1.49	1.35	1.64	1.51	1.35	1.35	1.35	1.35	1.35	1.35
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
2: Fremont Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	18.5	18.5	18.5	18.5	18.5	18.5	20.5	20.5	20.5	20.5	20.5	20.5
Total Split (s)	21.5	21.5	21.5	21.5	21.5	21.5	38.5	38.5	38.5	38.5	38.5	38.5
Total Split (%)	35.8%	35.8%	35.8%	35.8%	35.8%	35.8%	64.2%	64.2%	64.2%	64.2%	64.2%	64.2%
Maximum Green (s)	17.0	17.0	17.0	17.0	17.0	17.0	33.0	33.0	33.0	33.0	33.0	33.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	2.0	2.0	2.0	4.5	4.5	4.5	2.0	2.0	2.0
Minimum Gap (s)	3.0	3.0	3.0	2.0	2.0	2.0	3.5	3.5	3.5	2.0	2.0	2.0
Time Before Reduce (s)	1.5	1.5	1.5	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	7.0	7.0	7.0	7.0	7.0	7.0	8.0	8.0	8.0	8.0	8.0	8.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	17.0	17.0	17.0	17.0	17.0	17.0	33.0	33.0	33.0	33.0	33.0	33.0
Actuated g/C Ratio	0.28	0.28	0.28	0.28	0.28	0.28	0.55	0.55	0.55	0.55	0.55	0.55
v/c Ratio	0.27	1.04	0.38	0.36	0.95	0.21	0.60	1.00	0.04	0.86	0.84	0.06
Control Delay	22.3	86.0	10.2	26.2	63.6	9.0	10.2	28.7	0.5	64.4	23.8	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.8	0.0	0.0	3.2	0.0
Total Delay	22.3	86.0	10.3	26.2	63.6	9.0	10.2	35.5	0.5	64.4	27.0	2.7
LOS	C	F	B	C	E	A	B	D	A	E	C	A
Approach Delay		60.9			50.5			31.0			31.4	
Approach LOS		E			D			C			C	
Queue Length 50th (ft)	12	~152	13	14	119	5	7	41	0	35	183	0
Queue Length 95th (ft)	36	#286	52	42	#262	33	m9	m#72	m0	#133	#392	11
Internal Link Dist (ft)		533			334			295			664	
Turn Bay Length (ft)	95		50	200		50	190		100	165		100
Base Capacity (vph)	157	358	399	134	353	363	221	805	696	149	805	702
Starvation Cap Reductn	0	0	0	0	0	0	0	20	0	0	0	0
Spillback Cap Reductn	0	0	4	0	0	0	0	0	0	0	65	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	1.04	0.39	0.36	0.95	0.21	0.60	1.02	0.04	0.86	0.91	0.06

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 9 (15%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 90

# Lanes, Volumes, Timings

## 2: Fremont Ave & Mission St

12/28/2021

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 40.3

Intersection LOS: D

Intersection Capacity Utilization 94.3%

ICU Level of Service F

Analysis Period (min) 15

~ 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.

Splits and Phases: 2: Fremont Ave & Mission St

 Ø2 (R)	 Ø4
38.5 s	21.5 s
 Ø6 (R)	 Ø8
38.5 s	21.5 s

Lanes, Volumes, Timings  
3: Mission St & Meridian Ave

12/28/2021



Lane Group	EBL2	EBT	WBT	WBR	SBL	SBR2	NET	SWT
Lane Configurations		↕	↑	↗	↘		↑	↑
Traffic Volume (vph)	10	484	409	42	69	43	8	8
Future Volume (vph)	10	484	409	42	69	43	8	8
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	11	11	12	12	12	12	12
Storage Length (ft)				65	0			
Storage Lanes				1	1			
Taper Length (ft)					25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>				0.850	0.948			
Fl <sub>t</sub> Protected		0.999			0.970			
Satd. Flow (prot)	0	1307	1334	1173	1442	0	1569	1569
Fl <sub>t</sub> Permitted		0.991			0.970			
Satd. Flow (perm)	0	1297	1334	1173	1442	0	1569	1569
Right Turn on Red						No		
Satd. Flow (RTOR)								
Link Speed (mph)		30	30		25		30	30
Link Distance (ft)		408	294		340		356	325
Travel Time (s)		9.3	6.7		9.3		8.1	7.4
Peak Hour Factor	0.96	0.96	0.88	0.88	0.86	0.86	0.92	0.92
Bus Blockages (#/hr)	0	2	0	0	0	0	0	0
Parking (#/hr)		6	4	4				
Adj. Flow (vph)	10	504	465	48	80	50	9	9
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	514	465	48	130	0	9	9
Enter Blocked Intersection	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right	Left	Left
Median Width(ft)		0	0		12		0	0
Link Offset(ft)		0	0		0		0	0
Crosswalk Width(ft)		16	16		16		16	16
Two way Left Turn Lane								
Headway Factor	1.24	1.55	1.51	1.45	1.24	1.24	1.24	1.24
Turning Speed (mph)	15			9	15	9		
Number of Detectors	1	2	2	1	1		2	2
Detector Template	Left	Thru	Thru	Right	Left		Thru	Thru
Leading Detector (ft)	20	100	100	20	20		100	100
Trailing Detector (ft)	0	0	0	0	0		0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0
Detector 1 Size(ft)	20	6	6	20	20		6	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel								
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94	94				94	94
Detector 2 Size(ft)		6	6				6	6
Detector 2 Type		Cl+Ex	Cl+Ex				Cl+Ex	Cl+Ex
Detector 2 Channel								
Detector 2 Extend (s)		0.0	0.0				0.0	0.0

Lanes, Volumes, Timings  
3: Mission St & Meridian Ave

12/28/2021



Lane Group	EBL2	EBT	WBT	WBR	SBL	SBR2	NET	SWT
Turn Type	Perm	NA	NA	Perm	Prot		NA	NA
Protected Phases		2	6		4		9	9
Permitted Phases	2			6	4			
Detector Phase	2	2	6	6	4		9	9
Switch Phase								
Minimum Initial (s)	24.0	24.0	24.0	24.0	5.0		40.5	40.5
Minimum Split (s)	28.7	28.7	28.7	28.7	28.5		45.0	45.0
Total Split (s)	46.5	46.5	46.5	46.5	28.5		45.0	45.0
Total Split (%)	38.8%	38.8%	38.8%	38.8%	23.8%		37.5%	37.5%
Maximum Green (s)	41.8	41.8	41.8	41.8	24.3		40.5	40.5
Yellow Time (s)	3.2	3.2	3.2	3.2	3.2		3.5	3.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.0		1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		4.7	4.7	4.7	4.2		4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	1.0	1.0	1.0	1.0	3.5		3.0	3.0
Recall Mode	Min	Min	Min	Min	None		None	None
Walk Time (s)	5.0	5.0	5.0	5.0	5.0			
Flash Dont Walk (s)	12.0	12.0	16.0	16.0	18.0			
Pedestrian Calls (#/hr)	0	0	0	0	0			
Act Effct Green (s)		48.4	48.4	48.4	13.9		44.2	44.2
Actuated g/C Ratio		0.57	0.57	0.57	0.16		0.52	0.52
v/c Ratio		0.70	0.61	0.07	0.55		0.01	0.01
Control Delay		29.3	26.5	19.5	45.5		21.9	21.9
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0
Total Delay		29.3	26.5	19.5	45.5		21.9	21.9
LOS		C	C	B	D		C	C
Approach Delay		29.3	25.9		45.5		21.9	21.9
Approach LOS		C	C		D		C	C
Queue Length 50th (ft)		83	70	5	42		1	1
Queue Length 95th (ft)		#666	#551	52	145		16	16
Internal Link Dist (ft)		328	214		260		276	245
Turn Bay Length (ft)				65				
Base Capacity (vph)		746	768	675	448		813	813
Starvation Cap Reductn		0	0	0	0		0	0
Spillback Cap Reductn		0	0	0	0		0	0
Storage Cap Reductn		0	0	0	0		0	0
Reduced v/c Ratio		0.69	0.61	0.07	0.29		0.01	0.01

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	85.3
Natural Cycle:	125
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.70
Intersection Signal Delay:	29.5
Intersection Capacity Utilization:	96.2%
Intersection LOS:	C
ICU Level of Service:	F

Lanes, Volumes, Timings  
 3: Mission St & Meridian Ave





12/28/2021

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Mission St & Meridian Ave

 Ø2	 Ø4	 Ø9
46.5 s	28.5 s	45 s
 Ø6		
46.5 s		

Lanes, Volumes, Timings  
4: Mission St & Orange Grove Ave

12/28/2021

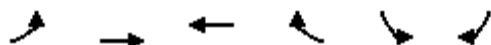


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	213	330	346	120	137	241
Future Volume (vph)	213	330	346	120	137	241
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	11	12	11	11
Storage Length (ft)	0			0	100	100
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88
Fr <sub>t</sub>			0.965			0.850
Fl <sub>t</sub> Protected	0.950				0.950	
Satd. Flow (prot)	1391	1279	1244	0	1441	2268
Fl <sub>t</sub> Permitted	0.425				0.950	
Satd. Flow (perm)	622	1279	1244	0	1441	2268
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			43			259
Link Speed (mph)		30	30		30	
Link Distance (ft)		161	588		432	
Travel Time (s)		3.7	13.4		9.8	
Peak Hour Factor	0.85	0.85	0.89	0.89	0.93	0.93
Bus Blockages (#/hr)	0	2	0	0	0	0
Parking (#/hr)		10	10	10		
Adj. Flow (vph)	251	388	389	135	147	259
Shared Lane Traffic (%)						
Lane Group Flow (vph)	251	388	524	0	147	259
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.35	1.59	1.58	1.24	1.30	1.30
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	6	6		20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			



Lanes, Volumes, Timings  
4: Mission St & Orange Grove Ave

12/28/2021



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Detector Phase	4	4	8		6	6
Switch Phase						
Minimum Initial (s)	30.0	30.0	30.0		4.0	4.0
Minimum Split (s)	35.0	35.0	36.0		24.0	24.0
Total Split (s)	36.0	36.0	36.0		24.0	24.0
Total Split (%)	60.0%	60.0%	60.0%		40.0%	40.0%
Maximum Green (s)	31.0	31.0	31.0		20.0	20.0
Yellow Time (s)	4.0	4.0	4.0		3.0	3.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Min	Min	Min		None	None
Walk Time (s)			20.0		8.0	8.0
Flash Dont Walk (s)			10.0		12.0	12.0
Pedestrian Calls (#/hr)			0		0	0
Act Effct Green (s)	30.8	30.8	30.8		10.3	10.3
Actuated g/C Ratio	0.61	0.61	0.61		0.21	0.21
v/c Ratio	0.66	0.49	0.67		0.50	0.39
Control Delay	19.6	8.9	12.7		23.6	4.6
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	19.6	8.9	12.7		23.6	4.6
LOS	B	A	B		C	A
Approach Delay		13.1	12.7		11.5	
Approach LOS		B	B		B	
Queue Length 50th (ft)	39	52	74		39	0
Queue Length 95th (ft)	#155	123	#228		81	24
Internal Link Dist (ft)		81	508		352	
Turn Bay Length (ft)					100	100
Base Capacity (vph)	386	795	789		577	1064
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	0.65	0.49	0.66		0.25	0.24

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	50.1
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.67
Intersection Signal Delay:	12.5
Intersection LOS:	B
Intersection Capacity Utilization:	76.0%
ICU Level of Service:	D

# Lanes, Volumes, Timings

## 4: Mission St & Orange Grove Ave

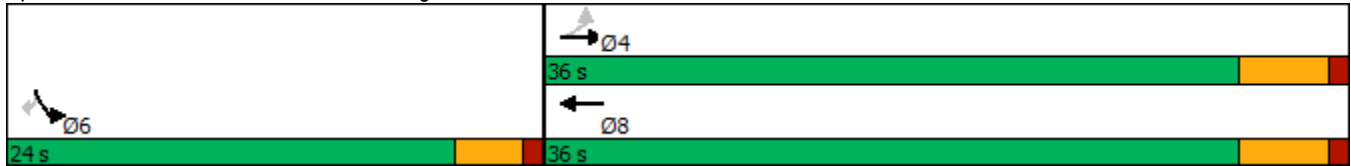
12/28/2021

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Mission St & Orange Grove Ave



Lanes, Volumes, Timings  
5: Fair Oaks Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Volume (vph)	43	38	98	17	29	24	61	998	24	18	1309	55
Future Volume (vph)	43	38	98	17	29	24	61	998	24	18	1309	55
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	11	12	10	11	12
Storage Length (ft)	0		0	0		0	75		0	75		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.926			0.953			0.996			0.994	
Flt Protected		0.988			0.988		0.950			0.950		
Satd. Flow (prot)	0	1387	0	0	1428	0	1652	3408	0	1652	3401	0
Flt Permitted		0.914			0.865		0.122			0.235		
Satd. Flow (perm)	0	1283	0	0	1250	0	212	3408	0	409	3401	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		58			25			4			7	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		420			404			386			375	
Travel Time (s)		11.5			11.0			8.8			8.5	
Peak Hour Factor	0.88	0.88	0.88	0.80	0.80	0.80	0.96	0.96	0.96	0.94	0.94	0.94
Adj. Flow (vph)	49	43	111	21	36	30	64	1040	25	19	1393	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	203	0	0	87	0	64	1065	0	19	1452	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.30	1.24	1.24	1.30	1.24	1.09	1.04	1.00	1.09	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		1	6		5	2	

Lanes, Volumes, Timings  
5: Fair Oaks Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		4.0	10.0		4.0	10.0	
Minimum Split (s)	27.0	27.0		27.0	27.0		7.0	34.0		8.0	34.0	
Total Split (s)	29.0	29.0		29.0	29.0		9.0	63.0		8.0	62.0	
Total Split (%)	29.0%	29.0%		29.0%	29.0%		9.0%	63.0%		8.0%	62.0%	
Maximum Green (s)	24.5	24.5		24.5	24.5		6.0	59.0		4.0	58.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.0	0.0		1.0	0.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		3.0	4.0		4.0	4.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	2.0		2.5	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)	7.0	7.0		6.0	6.0			9.0			9.0	
Flash Dont Walk (s)	15.5	15.5		16.5	16.5			21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		17.2			17.2		74.4	70.8		71.1	67.1	
Actuated g/C Ratio		0.17			0.17		0.74	0.71		0.71	0.67	
v/c Ratio		0.76			0.37		0.27	0.44		0.05	0.64	
Control Delay		45.1			29.5		7.0	8.3		4.1	9.4	
Queue Delay		0.1			0.0		0.0	0.1		0.0	0.7	
Total Delay		45.1			29.5		7.0	8.4		4.1	10.2	
LOS		D			C		A	A		A	B	
Approach Delay		45.1			29.5			8.3			10.1	
Approach LOS		D			C			A			B	
Queue Length 50th (ft)		89			35		9	110		4	222	
Queue Length 95th (ft)		152			63		25	251		m2	m92	
Internal Link Dist (ft)		340			324			306			295	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)		358			325		245	2415		352	2285	
Starvation Cap Reductn		0			0		0	0		0	466	
Spillback Cap Reductn		4			1		0	275		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.57			0.27		0.26	0.50		0.05	0.80	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 6 (6%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.76





Lanes, Volumes, Timings  
 5: Fair Oaks Ave & El Centro St

12/28/2021

Intersection Signal Delay: 12.4	Intersection LOS: B
Intersection Capacity Utilization 68.1%	ICU Level of Service C
Analysis Period (min) 15	

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

Splits and Phases: 5: Fair Oaks Ave & El Centro St

 Ø1	 Ø2 (R)	 Ø4
9 s	62 s	29 s
 Ø5	 Ø6 (R)	 Ø8
8 s	63 s	29 s

Lanes, Volumes, Timings  
6: Fremont Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘		↗	↘	
Traffic Volume (vph)	33	90	48	31	64	37	4	816	25	24	743	22
Future Volume (vph)	33	90	48	31	64	37	4	816	25	24	743	22
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	10	12	12	10	12	12
Storage Length (ft)	0		0	0		0	75		0	75		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.962			0.962			0.996			0.996	
Flt Protected		0.990			0.988		0.950			0.950		
Satd. Flow (prot)	0	1544	0	0	1541	0	1391	1562	0	1391	1562	0
Flt Permitted		0.923			0.897		0.233			0.148		
Satd. Flow (perm)	0	1439	0	0	1399	0	341	1562	0	217	1562	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33			32			4			4	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		632			417			438			375	
Travel Time (s)		17.2			11.4			10.0			8.5	
Peak Hour Factor	0.84	0.84	0.84	0.82	0.82	0.82	0.91	0.91	0.91	0.97	0.97	0.97
Adj. Flow (vph)	39	107	57	38	78	45	4	897	27	25	766	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	203	0	0	161	0	4	924	0	25	789	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.35	1.24	1.24	1.35	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	

Lanes, Volumes, Timings  
6: Fremont Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	22.0	22.0		22.0	22.0		38.0	38.0		38.0	38.0	
Total Split (%)	36.7%	36.7%		36.7%	36.7%		63.3%	63.3%		63.3%	63.3%	
Maximum Green (s)	17.0	17.0		17.0	17.0		33.0	33.0		33.0	33.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.5	4.5		4.5	4.5		4.0	4.0		4.0	4.0	
Minimum Gap (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	1.5	1.5		1.5	1.5		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		C-Min	C-Min		C-Min	C-Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		13.5			13.5		36.5	36.5		36.5	36.5	
Actuated g/C Ratio		0.22			0.22		0.61	0.61		0.61	0.61	
v/c Ratio		0.58			0.48		0.02	0.97		0.19	0.83	
Control Delay		23.6			19.9		6.5	39.2		11.1	17.7	
Queue Delay		0.0			0.0		0.0	26.1		0.0	0.7	
Total Delay		23.6			20.0		6.5	65.4		11.1	18.4	
LOS		C			B		A	E		B	B	
Approach Delay		23.6			20.0			65.1			18.1	
Approach LOS		C			B			E			B	
Queue Length 50th (ft)		54			40		1	279		3	136	
Queue Length 95th (ft)		94			72		4	#592		m7	m#403	
Internal Link Dist (ft)		552			337			358			295	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)		431			419		207	952		132	952	
Starvation Cap Reductn		0			0		0	0		0	30	
Spillback Cap Reductn		1			1		0	83		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.47			0.39		0.02	1.06		0.19	0.86	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 36 (60%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.97





Lanes, Volumes, Timings  
7: Meridian Ave & El Centro St

12/28/2021



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	103	102	66	85	47	37
Future Volume (vph)	103	102	66	85	47	37
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	13	12	12	13	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.933				0.941	
Flt Protected				0.979	0.973	
Satd. Flow (prot)	1512	0	0	1587	1436	0
Flt Permitted				0.979	0.973	
Satd. Flow (perm)	1512	0	0	1587	1436	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	1194			309	450	
Travel Time (s)	32.6			8.4	12.3	
Peak Hour Factor	0.80	0.80	0.87	0.87	0.80	0.80
Adj. Flow (vph)	129	128	76	98	59	46
Shared Lane Traffic (%)						
Lane Group Flow (vph)	257	0	0	174	105	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.19	1.24	1.24	1.19	1.24	1.24
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Stop	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	39.3%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings  
8: orange Grove Ave & El Centro St

12/28/2021





















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	↕
Traffic Volume (vph)	16	143	7	9	67	56	13	82	17	45	87	12
Future Volume (vph)	16	143	7	9	67	56	13	82	17	45	87	12
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	12	13	12	13	13	12
Storage Length (ft)	0		0	0		0	0		0	0		75
Storage Lanes	0		0	0		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.994			0.943			0.979			0.982	
Fl <sub>t</sub> Protected		0.995			0.997			0.994		0.950		
Satd. Flow (prot)	0	1603	0	0	1524	0	0	1577	0	1540	1592	0
Fl <sub>t</sub> Permitted		0.995			0.997			0.994		0.950		
Satd. Flow (perm)	0	1603	0	0	1524	0	0	1577	0	1540	1592	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		426			1194			450			376	
Travel Time (s)		11.6			32.6			12.3			10.3	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.82	0.82	0.82	0.92	0.92	0.92
Adj. Flow (vph)	20	179	9	11	84	70	16	100	21	49	95	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	208	0	0	165	0	0	137	0	49	108	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.19	1.24	1.19	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	35.6%
ICU Level of Service	A
Analysis Period (min)	15























Lanes, Volumes, Timings  
9: Pasadena Ave & El Centro St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	26	0	38	0	94	29	25	79	1
Future Volume (vph)	0	0	0	26	0	38	0	94	29	25	79	1
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	12	14	12	14	12	11	14	12	11	12
Storage Length (ft)	0		0	0		0	0		75	100		0
Storage Lanes	0		0	1		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.865				0.850		0.998	
Fl <sub>t</sub> Protected				0.950						0.950		
Satd. Flow (prot)	0	1569	0	1590	0	0	0	1516	1411	1490	1513	0
Fl <sub>t</sub> Permitted				0.950						0.950		
Satd. Flow (perm)	0	1569	0	1590	0	0	0	1516	1411	1490	1513	0
Link Speed (mph)		30			25			30			30	
Link Distance (ft)		367			417			410			724	
Travel Time (s)		8.3			11.4			9.3			16.5	
Peak Hour Factor	0.25	0.25	0.25	0.89	0.89	0.89	0.88	0.88	0.88	0.80	0.80	0.80
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	0
Adj. Flow (vph)	0	0	0	29	0	43	0	107	33	31	99	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	29	43	0	0	107	33	31	100	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		14			14			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.24	1.24	1.24	1.15	1.24	1.15	1.24	1.30	1.16	1.24	1.30	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization Err%	ICU Level of Service H											
Analysis Period (min)	15											

Lanes, Volumes, Timings  
11: Fremont Ave & Monterey Rd

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	596	177	49	618	36	161	746	32	67	702	49
Future Volume (vph)	68	596	177	49	618	36	161	746	32	67	702	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	12	12	10	12	12	10	10	16	10	10	16
Storage Length (ft)	150		0	125		0	100		50	100		40
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25		25			
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.966			0.992				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	3419	0	1652	3511	0	1391	1464	1511	1391	1464	1511
Flt Permitted	0.245			0.235			0.234			0.173		
Satd. Flow (perm)	426	3419	0	409	3511	0	343	1464	1511	253	1464	1511
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		64			10				36			36
Link Speed (mph)		35			35			30				30
Link Distance (ft)		666			643			396				474
Travel Time (s)		13.0			12.5			9.0				10.8
Peak Hour Factor	0.87	0.87	0.87	0.93	0.93	0.93	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	78	685	203	53	665	39	175	811	35	69	724	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	78	888	0	53	704	0	175	811	35	69	724	51
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.09	1.00	1.00	1.09	1.00	1.00	1.35	1.35	1.06	1.35	1.35	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			4			2				2

Lanes, Volumes, Timings  
11: Fremont Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			4			2		2	2		2
Detector Phase	4	4		4	4		2	2	2	2	2	2
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	22.0	22.0		22.0	22.0		38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	36.7%	36.7%		36.7%	36.7%		63.3%	63.3%	63.3%	63.3%	63.3%	63.3%
Maximum Green (s)	17.0	17.0		17.0	17.0		33.0	33.0	33.0	33.0	33.0	33.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.5	4.5		4.5	4.5		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Gap (s)	3.5	3.5		3.5	3.5		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	1.5	1.5		1.5	1.5		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	17.0	17.0		17.0	17.0		33.0	33.0	33.0	33.0	33.0	33.0
Actuated g/C Ratio	0.28	0.28		0.28	0.28		0.55	0.55	0.55	0.55	0.55	0.55
v/c Ratio	0.65	0.88		0.46	0.70		0.93	1.01	0.04	0.50	0.90	0.06
Control Delay	48.9	31.0		33.8	23.5		70.5	50.8	2.7	24.6	29.8	3.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	31.0		33.8	23.5		70.5	50.8	2.7	24.6	29.8	3.5
LOS	D	C		C	C		E	D	A	C	C	A
Approach Delay		32.5			24.2			52.6				27.8
Approach LOS		C			C			D				C
Queue Length 50th (ft)	25	148		16	117		52	~270	0	14	209	2
Queue Length 95th (ft)	#82	#235		#57	171		#168	#509	10	#69	#434	14
Internal Link Dist (ft)		586			563			316				394
Turn Bay Length (ft)	150			125			100		50	100		40
Base Capacity (vph)	120	1014		115	1001		188	805	847	139	805	847
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.88		0.46	0.70		0.93	1.01	0.04	0.50	0.90	0.06

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 36 (60%), Referenced to phase 2:NBSB and 6:, Start of Yellow  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.01

# Lanes, Volumes, Timings

## 11: Fremont Ave & Monterey Rd

12/28/2021

Intersection Signal Delay: 35.3 Intersection LOS: D

Intersection Capacity Utilization 96.6% ICU Level of Service F

Analysis Period (min) 15

~ 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.

Splits and Phases: 11: Fremont Ave & Monterey Rd



Lanes, Volumes, Timings  
12: Meridian Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	785	204	45	840	13	279	76	52	11	153	4
Future Volume (vph)	13	785	204	45	840	13	279	76	52	11	153	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	12	10	11	12	12	13	12	12	13	12
Storage Length (ft)	225		0	175		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.969			0.998			0.983			0.997	
Fl <sub>t</sub> Protected	0.950			0.950				0.967			0.997	
Satd. Flow (prot)	1652	3315	0	1652	3414	0	0	1541	0	0	1611	0
Fl <sub>t</sub> Permitted	0.230			0.176				0.675			0.967	
Satd. Flow (perm)	400	3315	0	306	3414	0	0	1076	0	0	1563	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		66			3			14			2	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1211			592			371			479	
Travel Time (s)		23.6			11.5			10.1			13.1	
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.87	0.87	0.87	0.85	0.85	0.85
Adj. Flow (vph)	14	835	217	48	903	14	321	87	60	13	180	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	1052	0	48	917	0	0	468	0	0	198	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.00	1.09	1.04	1.00	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	

Lanes, Volumes, Timings  
 12: Meridian Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	30.0	30.0		30.0	30.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	35.0	35.0		35.0	35.0		24.0	24.0		24.0	24.0	
Total Split (s)	35.0	35.0		35.0	35.0		30.0	30.0		30.0	30.0	
Total Split (%)	53.8%	53.8%		53.8%	53.8%		46.2%	46.2%		46.2%	46.2%	
Maximum Green (s)	30.0	30.0		30.0	30.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0			0.0		
Total Lost Time (s)	5.0	5.0		5.0	5.0		4.0			4.0		
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	30.0	30.0		30.0	30.0		26.0			26.0		
Actuated g/C Ratio	0.46	0.46		0.46	0.46		0.40			0.40		
v/c Ratio	0.08	0.67		0.34	0.58		1.07			0.32		
Control Delay	11.2	15.4		19.6	14.7		85.7			15.0		
Queue Delay	0.0	0.0		0.0	0.0		0.0			0.0		
Total Delay	11.2	15.4		19.6	14.7		85.7			15.0		
LOS	B	B		B	B		F			B		
Approach Delay		15.3			14.9		85.7			15.0		
Approach LOS		B			B		F			B		
Queue Length 50th (ft)	3	151		12	132		~208			51		
Queue Length 95th (ft)	13	213		40	185		#357			90		
Internal Link Dist (ft)		1131			512		291			399		
Turn Bay Length (ft)	225			175								
Base Capacity (vph)	184	1565		141	1577		438			626		
Starvation Cap Reductn	0	0		0	0		0			0		
Spillback Cap Reductn	0	0		0	0		0			0		
Storage Cap Reductn	0	0		0	0		0			0		
Reduced v/c Ratio	0.08	0.67		0.34	0.58		1.07			0.32		

**Intersection Summary**

Area Type: Other

Cycle Length: 65

Actuated Cycle Length: 65

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.07

Intersection Signal Delay: 27.4      Intersection LOS: C

Intersection Capacity Utilization 85.7%      ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.



# Lanes, Volumes, Timings

## 12: Meridian Ave & Monterey Rd

12/28/2021

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 12: Meridian Ave & Monterey Rd



Lanes, Volumes, Timings  
 13: Orange Grove Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	911	1	12	975	136	1	0	12	79	5	29
Future Volume (vph)	15	911	1	12	975	136	1	0	12	79	5	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	12	10	11	12	12	13	12	12	13	12
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.982			0.873				0.966
Fl <sub>t</sub> Protected	0.950			0.950				0.997				0.966
Satd. Flow (prot)	1652	3421	0	1652	3360	0	0	1411	0	0	1513	0
Fl <sub>t</sub> Permitted	0.202			0.248				0.997				0.966
Satd. Flow (perm)	351	3421	0	431	3360	0	0	1411	0	0	1513	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					16			79				20
Link Speed (mph)		35			35			25				25
Link Distance (ft)		429			1211			316				446
Travel Time (s)		8.4			23.6			8.6				12.2
Peak Hour Factor	0.89	0.89	0.89	0.94	0.94	0.94	0.80	0.80	0.80	0.90	0.90	0.90
Adj. Flow (vph)	17	1024	1	13	1037	145	1	0	15	88	6	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	1025	0	13	1182	0	0	16	0	0	126	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.00	1.09	1.04	1.00	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases		2			6		3	3		4	4	

Lanes, Volumes, Timings  
13: Orange Grove Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2				6							
Detector Phase	2	2			6	6	3	3			4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0	5.0	5.0	5.0			5.0	5.0
Minimum Split (s)	24.0	24.0			24.0	24.0	31.5	31.5			31.5	31.5
Total Split (s)	26.0	26.0			26.0	26.0	32.0	32.0			32.0	32.0
Total Split (%)	28.9%	28.9%			28.9%	28.9%	35.6%	35.6%			35.6%	35.6%
Maximum Green (s)	21.0	21.0			21.0	21.0	27.5	27.5			27.5	27.5
Yellow Time (s)	4.0	4.0			4.0	4.0	3.5	3.5			3.5	3.5
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0			1.0	1.0
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0				0.0	
Total Lost Time (s)	5.0	5.0			5.0	5.0	4.5				4.5	
Lead/Lag							Lead	Lead			Lag	Lag
Lead-Lag Optimize?							Yes	Yes			Yes	Yes
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode	C-Min	C-Min			C-Min	C-Min	None	None			None	None
Walk Time (s)	7.0	7.0			7.0	7.0	7.0	7.0			7.0	7.0
Flash Dont Walk (s)	12.0	12.0			12.0	12.0	20.0	20.0			20.0	20.0
Pedestrian Calls (#/hr)	0	0			0	0	0	0			0	0
Act Effct Green (s)	64.8	64.8			64.8	64.8	5.5				11.7	
Actuated g/C Ratio	0.72	0.72			0.72	0.72	0.06				0.13	
v/c Ratio	0.07	0.42			0.04	0.49	0.10				0.59	
Control Delay	7.4	7.0			7.0	7.7	1.2				41.2	
Queue Delay	0.0	0.0			0.0	0.0	0.0				0.0	
Total Delay	7.4	7.0			7.0	7.7	1.2				41.2	
LOS	A	A			A	A	A				D	
Approach Delay	7.0				7.7		1.2				41.2	
Approach LOS	A				A		A				D	
Queue Length 50th (ft)	2	81			1	99	0				57	
Queue Length 95th (ft)	13	210			11	261	0				107	
Internal Link Dist (ft)	349				1131		236				366	
Turn Bay Length (ft)	75				75							
Base Capacity (vph)	252	2462			310	2423	486				476	
Starvation Cap Reductn	0	0			0	0	0				0	
Spillback Cap Reductn	0	0			0	0	0				0	
Storage Cap Reductn	0	0			0	0	0				0	
Reduced v/c Ratio	0.07	0.42			0.04	0.49	0.03				0.26	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.59
Intersection Signal Delay:	9.1
Intersection LOS:	A
Intersection Capacity Utilization:	53.5%
ICU Level of Service:	A
Analysis Period (min):	15

Lanes, Volumes, Timings  
 13: Orange Grove Ave & Monterey Rd










12/28/2021

Splits and Phases: 13: Orange Grove Ave & Monterey Rd

Ø2 (R)	Ø3	Ø4
26 s	32 s	32 s
Ø6 (R)		
26 s		

Lanes, Volumes, Timings  
 16: Meridian Ave & Hope St

12/28/2021

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	10	70	16	13	52	149
Future Volume (vph)	10	70	16	13	52	149
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	13	12	12	13
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.882		0.940			
Flt Protected	0.994					0.987
Satd. Flow (prot)	1375	0	1524	0	0	1600
Flt Permitted	0.994					0.987
Satd. Flow (perm)	1375	0	1524	0	0	1600
Link Speed (mph)	25		25			25
Link Distance (ft)	299		340			399
Travel Time (s)	8.2		9.3			10.9
Peak Hour Factor	0.83	0.83	0.82	0.82	0.93	0.93
Adj. Flow (vph)	12	84	20	16	56	160
Shared Lane Traffic (%)						
Lane Group Flow (vph)	96	0	36	0	0	216
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.24	1.24	1.19	1.24	1.24	1.19
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	31.9%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings  
17: Fremont Ave & Grevelia St

12/28/2021



Lane Group	EBL2	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR2
Lane Configurations												
Traffic Volume (vph)	5	10	23	1	6	10	6	795	8	3	695	7
Future Volume (vph)	5	10	23	1	6	10	6	795	8	3	695	7
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	12	12	12	12	12	14	12	12	14	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.918			0.920			0.999			0.999	
Flt Protected		0.994			0.998							
Satd. Flow (prot)	0	1431	0	0	1440	0	0	1672	0	0	1672	0
Flt Permitted		0.953			0.983			0.996			0.998	
Satd. Flow (perm)	0	1372	0	0	1419	0	0	1665	0	0	1668	0
Right Turn on Red									Yes			Yes
Satd. Flow (RTOR)								62			62	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		1201			446			255			617	
Travel Time (s)		32.8			12.2			5.8			14.0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.94	0.94	0.94	0.96	0.96	0.96
Adj. Flow (vph)	6	13	29	1	8	13	6	846	9	3	724	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	48	0	0	22	0	0	861	0	0	734	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.15	1.24	1.24	1.15	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												

Lanes, Volumes, Timings  
 17: Fremont Ave & Grevelia St

12/28/2021



Lane Group	NET	SWT
Lane Configurations	↑	↑
Traffic Volume (vph)	8	8
Future Volume (vph)	8	8
Ideal Flow (vphpl)	1600	1600
Lane Width (ft)	12	12
Lane Util. Factor	1.00	1.00
Frt		
Flt Protected		
Satd. Flow (prot)	1569	1569
Flt Permitted		
Satd. Flow (perm)	1569	1569
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)	30	30
Link Distance (ft)	309	405
Travel Time (s)	7.0	9.2
Peak Hour Factor	0.92	0.92
Adj. Flow (vph)	9	9
Shared Lane Traffic (%)		
Lane Group Flow (vph)	9	9
Enter Blocked Intersection	No	No
Lane Alignment	Left	Left
Median Width(ft)	0	0
Link Offset(ft)	0	0
Crosswalk Width(ft)	16	16
Two way Left Turn Lane		
Headway Factor	1.24	1.24
Turning Speed (mph)		
Number of Detectors	2	2
Detector Template	Thru	Thru
Leading Detector (ft)	100	100
Trailing Detector (ft)	0	0
Detector 1 Position(ft)	0	0
Detector 1 Size(ft)	6	6
Detector 1 Type	Cl+Ex	Cl+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(ft)	94	94
Detector 2 Size(ft)	6	6
Detector 2 Type	Cl+Ex	Cl+Ex
Detector 2 Channel		
Detector 2 Extend (s)	0.0	0.0
Turn Type	NA	NA
Protected Phases	9	9
Permitted Phases		
Detector Phase	9	9
Switch Phase		

Lanes, Volumes, Timings  
17: Fremont Ave & Grevelia St

12/28/2021



Lane Group	EBL2	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR2
Minimum Initial (s)	10.0	10.0		6.0	6.0		40.0	40.0		40.0	40.0	
Minimum Split (s)	20.0	20.0		11.0	11.0		45.0	45.0		45.0	45.0	
Total Split (s)	25.0	25.0		25.0	25.0		45.0	45.0		45.0	45.0	
Total Split (%)	21.7%	21.7%		21.7%	21.7%		39.1%	39.1%		39.1%	39.1%	
Maximum Green (s)	20.0	20.0		20.0	20.0		40.0	40.0		40.0	40.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.5	3.5		3.5	3.5		0.2	0.2		0.2	0.2	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0								7.0	7.0	
Flash Dont Walk (s)	8.0	8.0								8.0	8.0	
Pedestrian Calls (#/hr)	0	0								0	0	
Act Effct Green (s)		11.2			9.4			51.6			51.6	
Actuated g/C Ratio		0.16			0.13			0.74			0.74	
v/c Ratio		0.22			0.12			0.69			0.59	
Control Delay		33.3			32.7			17.0			14.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		33.3			32.7			17.0			14.9	
LOS		C			C			B			B	
Approach Delay		33.3			32.7			17.0			14.9	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)		15			7			156			112	
Queue Length 95th (ft)		60			34			#992			#795	
Internal Link Dist (ft)		1121			366			175			537	
Turn Bay Length (ft)												
Base Capacity (vph)		415			429			1246			1248	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.12			0.05			0.69			0.59	

Intersection Summary






Area Type: Other  
 Cycle Length: 115  
 Actuated Cycle Length: 69.8  
 Natural Cycle: 130  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.69  
 Intersection Signal Delay: 16.7  
 Intersection LOS: B  
 Intersection Capacity Utilization 109.5%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.



Lanes, Volumes, Timings  
 17: Fremont Ave & Grevelia St

12/28/2021

Splits and Phases: 17: Fremont Ave & Grevelia St

 45 s	 25 s	 45 s
 45 s	 25 s	

Lanes, Volumes, Timings  
 17: Fremont Ave & Grevelia St



















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Lane Group	NET	SWT
Minimum Initial (s)	40.5	40.5
Minimum Split (s)	45.0	45.0
Total Split (s)	45.0	45.0
Total Split (%)	39.1%	39.1%
Maximum Green (s)	40.5	40.5
Yellow Time (s)	3.5	3.5
All-Red Time (s)	1.0	1.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	4.5	4.5
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)	42.8	42.8
Actuated g/C Ratio	0.61	0.61
v/c Ratio	0.01	0.01
Control Delay	12.6	12.6
Queue Delay	0.0	0.0
Total Delay	12.6	12.6
LOS	B	B
Approach Delay	12.6	12.6
Approach LOS	B	B
Queue Length 50th (ft)	1	1
Queue Length 95th (ft)	15	15
Internal Link Dist (ft)	229	325
Turn Bay Length (ft)		
Base Capacity (vph)	961	961
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.01	0.01
<b>Intersection Summary</b>		

















Lanes, Volumes, Timings  
18: Meridian Ave & Grevelia St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	17	13	2	14	3	21	124	14	7	155	1
Future Volume (vph)	1	17	13	2	14	3	21	124	14	7	155	1
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	12	10	10	12	10	10
Storage Length (ft)	0		0	0		0	0		100	0		100
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.943			0.978				0.850			0.850
Flt Protected		0.999			0.994			0.993			0.998	
Satd. Flow (prot)	0	1527	0	0	1576	0	0	1454	1244	0	1461	1244
Flt Permitted		0.999			0.994			0.993			0.998	
Satd. Flow (perm)	0	1527	0	0	1576	0	0	1454	1244	0	1461	1244
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		441			1201			251			624	
Travel Time (s)		12.0			32.8			6.8			17.0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.93	0.93	0.93	0.83	0.83	0.83
Adj. Flow (vph)	1	21	16	3	18	4	23	133	15	8	187	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	38	0	0	25	0	0	156	15	0	195	1
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.35	1.35	1.24	1.35	1.35
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	32.6%						ICU Level of Service A					
Analysis Period (min)	15											

Lanes, Volumes, Timings  
19: Diamond Ave & Mission St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	525	33	33	421	6	16	1	25	0	0	0
Future Volume (vph)	0	525	33	33	421	6	16	1	25	0	0	0
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	11	12	12	11	12	10	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992			0.998			0.920				
Flt Protected					0.996			0.981				
Satd. Flow (prot)	0	1354	0	0	1334	0	0	1416	0	0	1569	0
Flt Permitted					0.996			0.981				
Satd. Flow (perm)	0	1354	0	0	1334	0	0	1416	0	0	1569	0
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		294			324			374			223	
Travel Time (s)		6.7			7.4			10.2			5.1	
Peak Hour Factor	0.96	0.96	0.96	0.95	0.95	0.95	0.80	0.80	0.80	0.25	0.25	0.25
Parking (#/hr)		0	10		3	3						
Adj. Flow (vph)	0	547	34	35	443	6	20	1	31	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	581	0	0	484	0	0	52	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.47	1.24	1.24	1.50	1.24	1.35	1.24	1.24	1.24	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	69.1%
Analysis Period (min)	15
	ICU Level of Service C

Lanes, Volumes, Timings  
20: Fairview Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	20	478	52	43	406	31	7	2	14	10	8	47
Future Volume (vph)	20	478	52	43	406	31	7	2	14	10	8	47
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	11	12	12	11	12	12	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987			0.991			0.915			0.902	
Flt Protected		0.998			0.996			0.985			0.993	
Satd. Flow (prot)	0	1292	0	0	1272	0	0	1414	0	0	1405	0
Flt Permitted		0.998			0.996			0.985			0.993	
Satd. Flow (perm)	0	1292	0	0	1272	0	0	1414	0	0	1405	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		324			613			381			228	
Travel Time (s)		7.4			13.9			10.4			6.2	
Peak Hour Factor	0.90	0.90	0.90	0.86	0.86	0.86	0.83	0.83	0.83	0.89	0.89	0.89
Parking (#/hr)		7	7		10	10						
Adj. Flow (vph)	22	531	58	50	472	36	8	2	17	11	9	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	611	0	0	558	0	0	27	0	0	73	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.55	1.24	1.24	1.58	1.24	1.24	1.24	1.24	1.24	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	60.9%
Analysis Period (min)	15
	ICU Level of Service B

Lanes, Volumes, Timings  
 21: Pasadena Ave & Mission St

12/28/2021



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑↑	↑	↑	↑	↑↑
Traffic Volume (vph)	263	29	76	263	46	86
Future Volume (vph)	263	29	76	263	46	86
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	13	13	12	12	11	14
Storage Length (ft)		0	0		100	100
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1621	1378	1490	1569	1441	2493
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1621	1378	1490	1569	1441	2493
Link Speed (mph)	30			30	30	
Link Distance (ft)	267			367	724	
Travel Time (s)	6.1			8.3	16.5	
Peak Hour Factor	0.80	0.80	0.89	0.89	0.91	0.91
Bus Blockages (#/hr)	0	0	0	0	0	2
Adj. Flow (vph)	329	36	85	296	51	95
Shared Lane Traffic (%)						
Lane Group Flow (vph)	329	36	85	296	51	95
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane					Yes	
Headway Factor	1.19	1.19	1.24	1.24	1.30	1.15
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Free	Free	

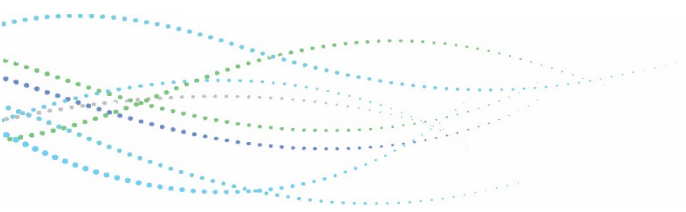
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	34.8%
ICU Level of Service	A
Analysis Period (min)	15



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## APPENDIX A: SYNCHRO OUTPUT SHEETS SCENARIO 4 - AM PEAK HOUR



Lanes, Volumes, Timings  
1: Fair Oaks Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	171	99	32	229	150	84	1082	20	84	873	61
Future Volume (vph)	79	171	99	32	229	150	84	1082	20	84	873	61
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	10	16	12	10	11	12	10	11	12
Storage Length (ft)	0		0	75		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.945			0.941			0.997			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1441	1312	0	1391	1673	0	1652	3377	0	1652	3340	0
Flt Permitted	0.146			0.567			0.950			0.950		
Satd. Flow (perm)	221	1312	0	830	1673	0	1652	3377	0	1652	3340	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33			32			2			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		427			434			375			355	
Travel Time (s)		9.7			9.9			8.5			8.1	
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.87	0.87	0.87	0.95	0.95	0.95
Bus Blockages (#/hr)	0	0	0	0	0	0	0	5	0	0	7	0
Parking (#/hr)		3	3									
Adj. Flow (vph)	86	186	108	34	241	158	97	1244	23	88	919	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	86	294	0	34	399	0	97	1267	0	88	983	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.44	1.24	1.35	1.06	1.24	1.09	1.06	1.00	1.09	1.06	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lanes, Volumes, Timings  
1: Fair Oaks Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases	3	8			4		1	6		5	2	
Permitted Phases	8			4								
Detector Phase	3	8		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	4.0	10.0		10.0	10.0		9.0	10.0		9.0	10.0	
Minimum Split (s)	9.5	28.5		27.0	27.0		13.5	25.0		13.5	25.0	
Total Split (s)	9.8	40.8		31.0	31.0		15.8	45.4		13.8	43.4	
Total Split (%)	9.8%	40.8%		31.0%	31.0%		15.8%	45.4%		13.8%	43.4%	
Maximum Green (s)	6.8	36.8		27.0	27.0		12.8	41.4		10.8	39.4	
Yellow Time (s)	3.0	3.5		3.5	3.5		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	0.5		0.5	0.5		0.0	0.0		0.0	0.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.5	3.0		3.0	3.0		1.5	4.0		1.5	4.0	
Minimum Gap (s)	2.5	3.0		3.0	3.0		1.5	3.0		1.5	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)		7.0		6.0	6.0			7.0			7.0	
Flash Dont Walk (s)		17.0		17.0	17.0			13.0			13.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	33.9	32.9		25.1	25.1		10.4	48.7		9.8	48.0	
Actuated g/C Ratio	0.34	0.33		0.25	0.25		0.10	0.49		0.10	0.48	
v/c Ratio	0.55	0.65		0.16	0.90		0.56	0.77		0.55	0.61	
Control Delay	35.5	31.6		30.4	57.7		58.4	24.1		56.2	23.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.3		0.0	0.0	
Total Delay	35.5	31.6		30.4	57.7		58.4	24.3		56.2	23.6	
LOS	D	C		C	E		E	C		E	C	
Approach Delay		32.5			55.6			26.7			26.2	
Approach LOS		C			E			C			C	
Queue Length 50th (ft)	36	132		17	222		60	380		55	260	
Queue Length 95th (ft)	70	222		43	#384		116	#476		105	353	
Internal Link Dist (ft)		347			354			295			275	
Turn Bay Length (ft)				75			150			150		
Base Capacity (vph)	157	503		224	475		211	1646		178	1608	
Starvation Cap Reductn	0	0		0	0		0	62		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.55	0.58		0.15	0.84		0.46	0.80		0.49	0.61	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow  
 Natural Cycle: 90

# Lanes, Volumes, Timings

## 1: Fair Oaks Ave & Mission St

12/28/2021

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 31.1

Intersection LOS: C

Intersection Capacity Utilization 81.8%








ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Fair Oaks Ave & Mission St

 Ø1	 Ø2 (R)	 Ø3	 Ø4
15.8 s	43.4 s	9.8 s	31 s
 Ø5	 Ø6 (R)	 Ø8	
13.8 s	45.4 s	40.8 s	

Lanes, Volumes, Timings  
2: Fremont Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	243	87	36	273	66	79	714	32	86	566	16
Future Volume (vph)	44	243	87	36	273	66	79	714	32	86	566	16
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	11	16	12	11	15	12	10	10	10	10	10	10
Storage Length (ft)	125		0	0		0	50		100	75		100
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.960			0.971				0.850			0.850
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1441	1473	0	1441	1429	0	1391	1464	1244	1391	1464	1244
Fl <sub>t</sub> Permitted	0.252			0.319			0.304			0.202		
Satd. Flow (perm)	382	1473	0	484	1429	0	445	1464	1244	296	1464	1244
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30			20				30			27
Link Speed (mph)		30			30			30				30
Link Distance (ft)		613			414			375				744
Travel Time (s)		13.9			9.4			8.5				16.9
Peak Hour Factor	0.87	0.87	0.87	0.80	0.80	0.80	0.92	0.92	0.92	0.89	0.89	0.89
Bus Blockages (#/hr)	0	2	2	0	2	2	0	0	0	0	0	0
Parking (#/hr)		6	6		8	8						
Adj. Flow (vph)	51	279	100	45	341	83	86	776	35	97	636	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	379	0	45	424	0	86	776	35	97	636	18
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		22			22			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.30	1.28	1.24	1.30	1.35	1.24	1.35	1.35	1.35	1.35	1.35	1.35
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
2: Fremont Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	18.5	18.5		18.5	18.5		20.5	20.5	20.5	20.5	20.5	20.5
Total Split (s)	21.6	21.6		21.6	21.6		38.4	38.4	38.4	38.4	38.4	38.4
Total Split (%)	36.0%	36.0%		36.0%	36.0%		64.0%	64.0%	64.0%	64.0%	64.0%	64.0%
Maximum Green (s)	17.1	17.1		17.1	17.1		32.9	32.9	32.9	32.9	32.9	32.9
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5		4.5	4.5		5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		2.0	2.0		4.5	4.5	4.5	2.0	2.0	2.0
Minimum Gap (s)	3.0	3.0		2.0	2.0		3.5	3.5	3.5	2.0	2.0	2.0
Time Before Reduce (s)	1.5	1.5		0.0	0.0		2.0	2.0	2.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		8.0	8.0	8.0	8.0	8.0	8.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	17.1	17.1		17.1	17.1		32.9	32.9	32.9	32.9	32.9	32.9
Actuated g/C Ratio	0.28	0.28		0.28	0.28		0.55	0.55	0.55	0.55	0.55	0.55
v/c Ratio	0.47	0.86		0.33	1.01		0.35	0.97	0.05	0.60	0.79	0.03
Control Delay	35.8	40.9		24.8	70.7		17.0	36.8	7.5	29.8	20.6	2.3
Queue Delay	0.0	0.2		0.0	0.0		0.0	1.8	0.0	0.0	5.3	0.0
Total Delay	35.8	41.2		24.8	70.7		17.0	38.6	7.5	29.8	25.9	2.3
LOS	D	D		C	E		B	D	A	C	C	A
Approach Delay		40.5			66.3			35.4			25.8	
Approach LOS		D			E			D			C	
Queue Length 50th (ft)	15	119		13	~148		23	222	3	21	165	0
Queue Length 95th (ft)	#54	#246		34	#261		m33	m#377	m7	#91	#351	6
Internal Link Dist (ft)		533			334			295			664	
Turn Bay Length (ft)	125						50		100	75		100
Base Capacity (vph)	108	441		137	421		244	802	695	162	802	694
Starvation Cap Reductn	0	0		0	0		0	9	0	0	0	0
Spillback Cap Reductn	0	2		0	0		0	0	0	0	114	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.86		0.33	1.01		0.35	0.98	0.05	0.60	0.92	0.03

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 18 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 90

# Lanes, Volumes, Timings

## 2: Fremont Ave & Mission St

12/28/2021

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 39.1 Intersection LOS: D

Intersection Capacity Utilization 92.1% ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

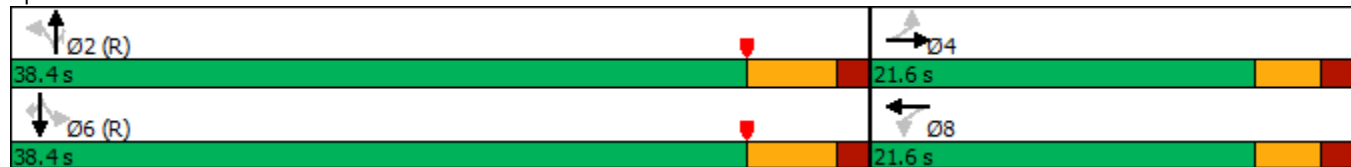
Queue shown is maximum after two cycles.

# 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.

Splits and Phases: 2: Fremont Ave & Mission St



Lanes, Volumes, Timings  
3: Meridian Ave & Mission St

12/28/2021



Lane Group	EBL2	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR2
Lane Configurations		↗			↖	↗		↖			↗	↖
Traffic Volume (vph)	6	320	49	6	306	40	60	139	16	15	100	3
Future Volume (vph)	6	320	49	6	306	40	60	139	16	15	100	3
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	12	12	11	11	12	13	12	12	13	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.983				0.850		0.990			0.996	
Flt Protected		0.999			0.999			0.986			0.994	
Satd. Flow (prot)	0	1329	0	0	1333	1134	0	1582	0	0	1605	0
Flt Permitted		0.993			0.992			0.884			0.946	
Satd. Flow (perm)	0	1321	0	0	1324	1134	0	1419	0	0	1527	0
Right Turn on Red									No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		408			294			373			340	
Travel Time (s)		9.3			6.7			10.2			9.3	
Peak Hour Factor	0.90	0.90	0.90	0.82	0.82	0.82	0.80	0.80	0.80	0.80	0.80	0.80
Bus Blockages (#/hr)	0	2	2	0	0	0	0	0	0	0	0	0
Parking (#/hr)		6	6		4	4						
Adj. Flow (vph)	7	356	54	7	373	49	75	174	20	19	125	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	417	0	0	380	49	0	269	0	0	148	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.49	1.24	1.24	1.51	1.51	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8			4		

Lanes, Volumes, Timings  
3: Meridian Ave & Mission St

12/28/2021



Lane Group	NET	SWT
Lane Configurations	↑	↑
Traffic Volume (vph)	8	8
Future Volume (vph)	8	8
Ideal Flow (vphpl)	1600	1600
Lane Width (ft)	12	12
Lane Util. Factor	1.00	1.00
Frt		
Flt Protected		
Satd. Flow (prot)	1569	1569
Flt Permitted		
Satd. Flow (perm)	1569	1569
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)	30	30
Link Distance (ft)	356	325
Travel Time (s)	8.1	7.4
Peak Hour Factor	0.92	0.92
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Adj. Flow (vph)	9	9
Shared Lane Traffic (%)		
Lane Group Flow (vph)	9	9
Enter Blocked Intersection	No	No
Lane Alignment	Left	Left
Median Width(ft)	0	0
Link Offset(ft)	0	0
Crosswalk Width(ft)	16	16
Two way Left Turn Lane		
Headway Factor	1.24	1.24
Turning Speed (mph)		
Number of Detectors	2	2
Detector Template	Thru	Thru
Leading Detector (ft)	100	100
Trailing Detector (ft)	0	0
Detector 1 Position(ft)	0	0
Detector 1 Size(ft)	6	6
Detector 1 Type	Cl+Ex	Cl+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(ft)	94	94
Detector 2 Size(ft)	6	6
Detector 2 Type	Cl+Ex	Cl+Ex
Detector 2 Channel		
Detector 2 Extend (s)	0.0	0.0
Turn Type	NA	NA
Protected Phases	9	9
Permitted Phases		

Lanes, Volumes, Timings  
3: Meridian Ave & Mission St

12/28/2021



Lane Group	EBL2	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR2
Detector Phase	2	2		6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	24.0	24.0		24.0	24.0	24.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	28.7	28.7		28.7	28.7	28.7	28.5	28.5		27.5	27.5	
Total Split (s)	48.0	48.0		48.0	48.0	48.0	32.0	32.0		32.0	32.0	
Total Split (%)	38.4%	38.4%		38.4%	38.4%	38.4%	25.6%	25.6%		25.6%	25.6%	
Maximum Green (s)	43.3	43.3		43.3	43.3	43.3	27.8	27.8		27.8	27.8	
Yellow Time (s)	3.2	3.2		3.2	3.2	3.2	3.2	3.2		3.2	3.2	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		4.7			4.7	4.7		4.2			4.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	3.5	3.5		3.5	3.5	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	12.0	12.0		16.0	16.0	16.0	19.0	19.0		18.0	18.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	
Act Effct Green (s)		34.0			34.0	34.0		27.1			27.1	
Actuated g/C Ratio		0.41			0.41	0.41		0.32			0.32	
v/c Ratio		0.78			0.71	0.11		0.58			0.30	
Control Delay		38.8			35.0	23.7		38.3			32.7	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		38.8			35.0	23.7		38.3			32.7	
LOS		D			D	C		D			C	
Approach Delay		38.8			33.7			38.3			32.7	
Approach LOS		D			C			D			C	
Queue Length 50th (ft)		120			105	10		69			34	
Queue Length 95th (ft)		#518			362	52		#291			149	
Internal Link Dist (ft)		328			214			293			260	
Turn Bay Length (ft)												
Base Capacity (vph)		800			801	686		551			593	
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		0.52			0.47	0.07		0.49			0.25	

Intersection Summary






Area Type:	Other
Cycle Length:	125
Actuated Cycle Length:	83.6
Natural Cycle:	115
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.78
Intersection Signal Delay:	36.1
Intersection LOS:	D
Intersection Capacity Utilization:	94.7%
ICU Level of Service:	F
Analysis Period (min):	15
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	



Lanes, Volumes, Timings  
 3: Meridian Ave & Mission St

12/28/2021

Splits and Phases: 3: Meridian Ave & Mission St

 Ø2 48 s	 Ø4 32 s	 Ø9 45 s
 Ø6 48 s	 Ø8 32 s	

Lanes, Volumes, Timings  
 3: Meridian Ave & Mission St

12/28/2021



Lane Group	NET	SWT
Detector Phase	9	9
Switch Phase		
Minimum Initial (s)	40.5	40.5
Minimum Split (s)	45.0	45.0
Total Split (s)	45.0	45.0
Total Split (%)	36.0%	36.0%
Maximum Green (s)	40.5	40.5
Yellow Time (s)	3.5	3.5
All-Red Time (s)	1.0	1.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	4.5	4.5
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)	47.4	47.4
Actuated g/C Ratio	0.57	0.57
v/c Ratio	0.01	0.01
Control Delay	25.0	25.0
Queue Delay	0.0	0.0
Total Delay	25.0	25.0
LOS	C	C
Approach Delay	25.0	25.0
Approach LOS	C	C
Queue Length 50th (ft)	1	1
Queue Length 95th (ft)	18	18
Internal Link Dist (ft)	276	245
Turn Bay Length (ft)		
Base Capacity (vph)	888	888
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.01	0.01
<b>Intersection Summary</b>		

Lanes, Volumes, Timings  
4: Mission St & Orange Grove Ave

12/28/2021



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	279	263	256	110	130	185
Future Volume (vph)	279	263	256	110	130	185
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	11	12	11	11
Storage Length (ft)	40			0	100	100
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	0.91
Fr <sub>t</sub>			0.955		0.941	0.850
Fl <sub>t</sub> Protected	0.950				0.971	
Satd. Flow (prot)	1391	2654	2545	0	2688	1173
Fl <sub>t</sub> Permitted	0.506				0.971	
Satd. Flow (perm)	741	2654	2545	0	2688	1173
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			126		106	125
Link Speed (mph)		30	30		30	
Link Distance (ft)		161	588		432	
Travel Time (s)		3.7	13.4		9.8	
Peak Hour Factor	0.80	0.80	0.87	0.87	0.80	0.80
Bus Blockages (#/hr)	0	2	0	0	0	0
Parking (#/hr)		10	10	10		
Adj. Flow (vph)	349	329	294	126	163	231
Shared Lane Traffic (%)						46%
Lane Group Flow (vph)	349	329	420	0	269	125
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		22	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.35	1.43	1.43	1.24	1.30	1.30
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	6	6		20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			

Lanes, Volumes, Timings  
4: Mission St & Orange Grove Ave

12/28/2021



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Detector Phase	4	4	8		6	6
Switch Phase						
Minimum Initial (s)	30.0	30.0	30.0		4.0	4.0
Minimum Split (s)	35.0	35.0	35.0		24.0	24.0
Total Split (s)	36.0	36.0	36.0		24.0	24.0
Total Split (%)	60.0%	60.0%	60.0%		40.0%	40.0%
Maximum Green (s)	31.0	31.0	31.0		20.0	20.0
Yellow Time (s)	4.0	4.0	4.0		3.0	3.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Min	Min	Min		None	None
Walk Time (s)			20.0		8.0	8.0
Flash Dont Walk (s)			10.0		12.0	12.0
Pedestrian Calls (#/hr)			0		0	0
Act Effct Green (s)	30.6	30.6	30.6		8.3	8.3
Actuated g/C Ratio	0.64	0.64	0.64		0.17	0.17
v/c Ratio	0.74	0.19	0.25		0.49	0.41
Control Delay	20.3	4.3	3.3		14.0	8.8
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	20.3	4.3	3.3		14.0	8.8
LOS	C	A	A		B	A
Approach Delay		12.5	3.3		12.3	
Approach LOS		B	A		B	
Queue Length 50th (ft)	52	15	13		21	0
Queue Length 95th (ft)	#174	30	32		39	27
Internal Link Dist (ft)		81	508		352	
Turn Bay Length (ft)	40				100	100
Base Capacity (vph)	479	1717	1691		1184	562
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	0.73	0.19	0.25		0.23	0.22

Intersection Summary	
Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	48
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.74
Intersection Signal Delay:	9.9
Intersection Capacity Utilization	68.4%
Intersection LOS:	A
ICU Level of Service	C

# Lanes, Volumes, Timings

## 4: Mission St & Orange Grove Ave

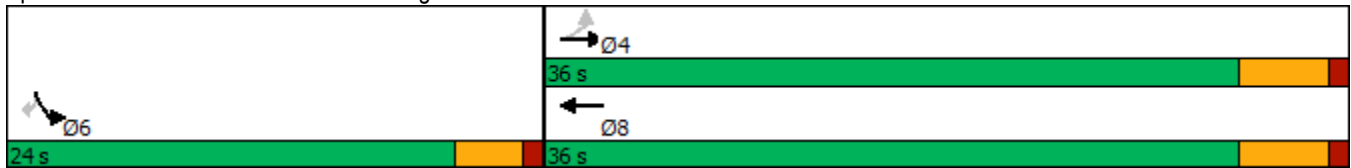
12/28/2021

Analysis Period (min) 15

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




















Queue shown is maximum after two cycles.

Splits and Phases: 4: Mission St & Orange Grove Ave



Lanes, Volumes, Timings  
5: Fair Oaks Ave & El Centro St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	26	26	5	25	2	76	1166	14	8	945	51
Future Volume (vph)	18	26	26	5	25	2	76	1166	14	8	945	51
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	11	12	10	11	12
Storage Length (ft)	0		0	0		0	75		0	75		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.950			0.990			0.998			0.992	
Flt Protected		0.987			0.993		0.950			0.950		
Satd. Flow (prot)	0	1422	0	0	1491	0	1652	3414	0	1652	3394	0
Flt Permitted		0.904			0.965		0.233			0.196		
Satd. Flow (perm)	0	1302	0	0	1449	0	405	3414	0	341	3394	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			3			2			9	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		420			404			386			375	
Travel Time (s)		11.5			11.0			8.8			8.5	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	23	33	33	6	31	3	83	1267	15	9	1005	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	89	0	0	40	0	83	1282	0	9	1059	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.30	1.24	1.24	1.30	1.24	1.09	1.04	1.00	1.09	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		1	6		5	2	

Lanes, Volumes, Timings  
5: Fair Oaks Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		4.0	10.0		4.0	10.0	
Minimum Split (s)	27.0	27.0		27.0	27.0		7.0	34.0		8.0	34.0	
Total Split (s)	29.0	29.0		29.0	29.0		9.0	63.0		8.0	62.0	
Total Split (%)	29.0%	29.0%		29.0%	29.0%		9.0%	63.0%		8.0%	62.0%	
Maximum Green (s)	24.5	24.5		24.5	24.5		6.0	59.0		4.0	58.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.0	0.0		1.0	0.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		3.0	4.0		4.0	4.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	2.0		2.5	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)	7.0	7.0		6.0	6.0			9.0			9.0	
Flash Dont Walk (s)	15.5	15.5		16.5	16.5			21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		11.5			11.5		83.5	81.8		79.6	76.3	
Actuated g/C Ratio		0.12			0.12		0.84	0.82		0.80	0.76	
v/c Ratio		0.51			0.24		0.20	0.46		0.03	0.41	
Control Delay		39.5			40.5		3.3	4.8		1.5	2.7	
Queue Delay		0.0			0.0		0.0	0.1		0.0	0.1	
Total Delay		39.5			40.5		3.3	5.0		1.5	2.9	
LOS		D			D		A	A		A	A	
Approach Delay		39.5			40.5			4.9			2.9	
Approach LOS		D			D			A			A	
Queue Length 50th (ft)		37			22		7	93		1	63	
Queue Length 95th (ft)		71			46		20	258		m1	46	
Internal Link Dist (ft)		340			324			306			295	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)		340			357		416	2792		338	2590	
Starvation Cap Reductn		0			0		0	0		0	569	
Spillback Cap Reductn		4			0		0	533		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.26			0.11		0.20	0.57		0.03	0.52	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 34 (34%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.51




Lanes, Volumes, Timings  
 5: Fair Oaks Ave & El Centro St

12/28/2021

Intersection Signal Delay: 5.8	Intersection LOS: A
Intersection Capacity Utilization 54.8%	ICU Level of Service A
Analysis Period (min) 15	

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

Splits and Phases: 5: Fair Oaks Ave & El Centro St

 Ø1	 Ø2 (R)	 Ø4
9 s	62 s	29 s
 Ø5	 Ø6 (R)	 Ø8
8 s	63 s	29 s



Lanes, Volumes, Timings  
6: Fremont Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Volume (vph)	19	86	43	16	69	24	45	782	8	5	670	14
Future Volume (vph)	19	86	43	16	69	24	45	782	8	5	670	14
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	10	12	12	10	12	12
Storage Length (ft)	0		0	0		0	75		0	75		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.961			0.970			0.998			0.997	
Flt Protected		0.994			0.993		0.950			0.950		
Satd. Flow (prot)	0	1548	0	0	1561	0	1391	1565	0	1391	1564	0
Flt Permitted		0.945			0.944		0.265			0.209		
Satd. Flow (perm)	0	1472	0	0	1484	0	388	1565	0	306	1564	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		34			24			1			3	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		632			417			438			375	
Travel Time (s)		17.2			11.4			10.0			8.5	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.94	0.94	0.94	0.91	0.91	0.91
Adj. Flow (vph)	24	108	54	20	86	30	48	832	9	5	736	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	186	0	0	136	0	48	841	0	5	751	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.35	1.24	1.24	1.35	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	

Lanes, Volumes, Timings  
6: Fremont Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	22.0	22.0		22.0	22.0		38.0	38.0		38.0	38.0	
Total Split (%)	36.7%	36.7%		36.7%	36.7%		63.3%	63.3%		63.3%	63.3%	
Maximum Green (s)	17.0	17.0		17.0	17.0		33.0	33.0		33.0	33.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.5	4.5		4.5	4.5		4.0	4.0		4.0	4.0	
Minimum Gap (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	1.5	1.5		1.5	1.5		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		C-Min	C-Min		C-Min	C-Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		12.8			12.8		37.2	37.2		37.2	37.2	
Actuated g/C Ratio		0.21			0.21		0.62	0.62		0.62	0.62	
v/c Ratio		0.55			0.41		0.20	0.87		0.03	0.77	
Control Delay		22.5			19.4		9.0	24.1		4.2	14.1	
Queue Delay		2.0			1.0		0.0	1.7		0.0	9.6	
Total Delay		24.5			20.4		9.0	25.8		4.2	23.6	
LOS		C			C		A	C		A	C	
Approach Delay		24.5			20.4			24.9			23.5	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)		49			35		6	212		0	239	
Queue Length 95th (ft)		80			61		26	#519		m1	m#408	
Internal Link Dist (ft)		552			337			358			295	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)		441			437		240	971		189	971	
Starvation Cap Reductn		0			0		0	0		0	194	
Spillback Cap Reductn		141			142		0	45		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.62			0.46		0.20	0.91		0.03	0.97	

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	36 (60%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle:	65
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.87

Lanes, Volumes, Timings  
6: Fremont Ave & El Centro St

12/28/2021

Intersection Signal Delay: 24.0	Intersection LOS: C
Intersection Capacity Utilization 70.3%	ICU Level of Service C
Analysis Period (min) 15	
# 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.	

Splits and Phases: 6: Fremont Ave & El Centro St



Lanes, Volumes, Timings  
7: Meridian Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	17	105	94	23	110	24	71	174	31	12	137	6
Future Volume (vph)	17	105	94	23	110	24	71	174	31	12	137	6
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	12	13	12	12	13	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.941			0.979			0.985			0.995	
Flt Protected		0.996			0.993			0.987			0.996	
Satd. Flow (prot)	0	1519	0	0	1576	0	0	1576	0	0	1606	0
Flt Permitted		0.996			0.993			0.987			0.996	
Satd. Flow (perm)	0	1519	0	0	1576	0	0	1576	0	0	1606	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1194			309			450			373	
Travel Time (s)		32.6			8.4			12.3			10.2	
Peak Hour Factor	0.81	0.81	0.81	0.80	0.80	0.80	0.80	0.80	0.80	0.86	0.86	0.86
Adj. Flow (vph)	21	130	116	29	138	30	89	218	39	14	159	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	267	0	0	197	0	0	346	0	0	180	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	54.4%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
8: orange Grove Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	↕
Traffic Volume (vph)	16	128	14	5	126	56	20	43	6	82	52	15
Future Volume (vph)	16	128	14	5	126	56	20	43	6	82	52	15
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	12	13	12	13	13	12
Storage Length (ft)	0		0	0		0	0		0	0		75
Storage Lanes	0		0	0		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.960			0.988			0.967	
Flt Protected		0.995			0.999			0.986		0.950		
Satd. Flow (prot)	0	1593	0	0	1555	0	0	1579	0	1540	1567	0
Flt Permitted		0.995			0.999			0.986		0.950		
Satd. Flow (perm)	0	1593	0	0	1555	0	0	1579	0	1540	1567	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		426			1194			450			376	
Travel Time (s)		11.6			32.6			12.3			10.3	
Peak Hour Factor	0.88	0.88	0.88	0.87	0.87	0.87	0.80	0.80	0.80	0.87	0.87	0.87
Adj. Flow (vph)	18	145	16	6	145	64	25	54	8	94	60	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	179	0	0	215	0	0	87	0	94	77	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.19	1.24	1.19	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	37.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
 9: Pasadena Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↑	↗	↘	↑	
Traffic Volume (vph)	1	0	2	29	0	35	1	95	70	64	55	1
Future Volume (vph)	1	0	2	29	0	35	1	95	70	64	55	1
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	12	14	12	14	12	11	14	12	11	12
Storage Length (ft)	0		0	0		0	0		75	100		0
Storage Lanes	0		0	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.899			0.926				0.850		0.998	
Flt Protected		0.988			0.978					0.950		
Satd. Flow (prot)	0	1393	0	0	1421	0	0	1516	1411	1490	1513	0
Flt Permitted		0.988			0.978					0.950		
Satd. Flow (perm)	0	1393	0	0	1421	0	0	1516	1411	1490	1513	0
Link Speed (mph)		30			25			30			30	
Link Distance (ft)		367			417			410			724	
Travel Time (s)		8.3			11.4			9.3			16.5	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	0
Adj. Flow (vph)	1	0	3	36	0	44	1	119	88	80	69	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	80	0	0	120	88	80	70	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.24	1.24	1.24	1.15	1.24	1.15	1.24	1.30	1.16	1.24	1.30	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.2%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
11: Fremont Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	564	236	89	559	39	151	720	32	40	620	31
Future Volume (vph)	90	564	236	89	559	39	151	720	32	40	620	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	12	12	10	12	12	10	10	16	10	10	16
Storage Length (ft)	150		0	125		0	100		50	100		40
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25		25			
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.956			0.990				0.850			0.850
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	3383	0	1652	3504	0	1391	1464	1511	1391	1464	1511
Fl <sub>t</sub> Permitted	0.230			0.222			0.264			0.172		
Satd. Flow (perm)	400	3383	0	386	3504	0	387	1464	1511	252	1464	1511
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		109			12				36			36
Link Speed (mph)		35			35			30				30
Link Distance (ft)		666			643			396				474
Travel Time (s)		13.0			12.5			9.0				10.8
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.91	0.91	0.91	0.93	0.93	0.93
Adj. Flow (vph)	113	705	295	111	699	49	166	791	35	43	667	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	113	1000	0	111	748	0	166	791	35	43	667	33
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.09	1.00	1.00	1.09	1.00	1.00	1.35	1.35	1.06	1.35	1.35	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			4			2				2

Lanes, Volumes, Timings  
 11: Fremont Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			4			2		2	2		2
Detector Phase	4	4		4	4		2	2	2	2	2	2
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	23.0	23.0		23.0	23.0		37.0	37.0	37.0	37.0	37.0	37.0
Total Split (%)	38.3%	38.3%		38.3%	38.3%		61.7%	61.7%	61.7%	61.7%	61.7%	61.7%
Maximum Green (s)	18.0	18.0		18.0	18.0		32.0	32.0	32.0	32.0	32.0	32.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.5	4.5		4.5	4.5		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Gap (s)	3.5	3.5		3.5	3.5		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	1.5	1.5		1.5	1.5		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	18.0	18.0		18.0	18.0		32.0	32.0	32.0	32.0	32.0	32.0
Actuated g/C Ratio	0.30	0.30		0.30	0.30		0.53	0.53	0.53	0.53	0.53	0.53
v/c Ratio	0.94	0.92		0.97	0.71		0.81	1.01	0.04	0.32	0.86	0.04
Control Delay	97.4	33.3		105.3	22.7		45.6	53.6	2.8	16.0	25.9	2.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	97.4	33.3		105.3	22.7		45.6	53.6	2.8	16.0	25.9	2.7
LOS	F	C		F	C		D	D	A	B	C	A
Approach Delay		39.8			33.4			50.5			24.3	
Approach LOS		D			C			D			C	
Queue Length 50th (ft)	39	163		39	123		45	~271	0	8	188	0
Queue Length 95th (ft)	#107	#206		#108	151		#151	#501	10	32	#394	9
Internal Link Dist (ft)		586			563			316			394	
Turn Bay Length (ft)	150			125			100		50	100		40
Base Capacity (vph)	120	1091		115	1059		206	780	822	134	780	822
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.92		0.97	0.71		0.81	1.01	0.04	0.32	0.86	0.04

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 36 (60%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.01



Lanes, Volumes, Timings  
11: Fremont Ave & Monterey Rd

12/28/2021

Intersection Signal Delay: 38.1 Intersection LOS: D

Intersection Capacity Utilization 93.4% ICU Level of Service F

Analysis Period (min) 15

~ 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.

Splits and Phases: 11: Fremont Ave & Monterey Rd



Lanes, Volumes, Timings  
 12: Meridian Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	911	194	31	795	15	304	219	48	70	158	16
Future Volume (vph)	36	911	194	31	795	15	304	219	48	70	158	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	12	10	11	12	12	13	12	12	13	12
Storage Length (ft)	225		0	175		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.974			0.997			0.989			0.991	
Fl <sub>t</sub> Protected	0.950			0.950				0.974			0.986	
Satd. Flow (prot)	1652	3332	0	1652	3411	0	0	1561	0	0	1584	0
Fl <sub>t</sub> Permitted	0.191			0.133				0.680			0.792	
Satd. Flow (perm)	332	3332	0	231	3411	0	0	1090	0	0	1272	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		52			4			9			7	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1211			592			371			479	
Travel Time (s)		23.6			11.5			10.1			13.1	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.95	0.95	0.95	0.91	0.91	0.91
Adj. Flow (vph)	45	1139	243	39	994	19	320	231	51	77	174	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	45	1382	0	39	1013	0	0	602	0	0	269	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.00	1.09	1.04	1.00	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	

Lanes, Volumes, Timings  
 12: Meridian Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	30.0	30.0		30.0	30.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	35.0	35.0		35.0	35.0		24.5	24.5		24.5	24.5	
Total Split (s)	35.0	35.0		35.0	35.0		30.0	30.0		30.0	30.0	
Total Split (%)	53.8%	53.8%		53.8%	53.8%		46.2%	46.2%		46.2%	46.2%	
Maximum Green (s)	30.0	30.0		30.0	30.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	30.0	30.0		30.0	30.0			26.0			26.0	
Actuated g/C Ratio	0.46	0.46		0.46	0.46			0.40			0.40	
v/c Ratio	0.29	0.88		0.37	0.64			1.37			0.52	
Control Delay	17.4	24.0		23.6	15.7			200.9			19.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	17.4	24.0		23.6	15.7			200.9			19.0	
LOS	B	C		C	B			F			B	
Approach Delay		23.8			16.0			200.9			19.0	
Approach LOS		C			B			F			B	
Queue Length 50th (ft)	11	238		10	152			~325			76	
Queue Length 95th (ft)	30	267		31	176			#509			143	
Internal Link Dist (ft)		1131			512			291			399	
Turn Bay Length (ft)	225			175								
Base Capacity (vph)	153	1565		106	1576			441			513	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.29	0.88		0.37	0.64			1.37			0.52	

Intersection Summary

Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	65
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.37
Intersection Signal Delay:	52.8
Intersection LOS:	D
Intersection Capacity Utilization:	95.0%
ICU Level of Service:	F
Analysis Period (min):	15

~ Volume exceeds capacity, queue is theoretically infinite.

Lanes, Volumes, Timings  
12: Meridian Ave & Monterey Rd

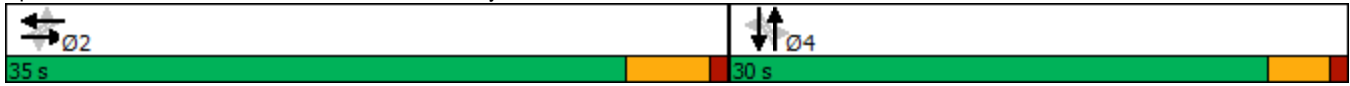
12/28/2021

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 12: Meridian Ave & Monterey Rd



Lanes, Volumes, Timings  
 13: Orange Grove Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	1041	2	7	978	130	1	3	6	94	1	12
Future Volume (vph)	17	1041	2	7	978	130	1	3	6	94	1	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	12	10	11	12	12	13	12	12	13	12
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.982			0.917				0.985
Fl <sub>t</sub> Protected	0.950			0.950				0.996				0.958
Satd. Flow (prot)	1652	3421	0	1652	3360	0	0	1480	0	0	1530	0
Fl <sub>t</sub> Permitted	0.173			0.199				0.996				0.958
Satd. Flow (perm)	301	3421	0	346	3360	0	0	1480	0	0	1530	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					15			8				6
Link Speed (mph)		35			35			25				25
Link Distance (ft)		429			1211			316				446
Travel Time (s)		8.4			23.6			8.6				12.2
Peak Hour Factor	0.87	0.87	0.87	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	20	1197	2	8	1151	153	1	4	8	118	1	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	1199	0	8	1304	0	0	13	0	0	134	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.00	1.09	1.04	1.00	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases		2			6		3	3		4		4

Lanes, Volumes, Timings  
 13: Orange Grove Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		6		3		3		4		4	
Detector Phase	2	2	6		6		3		3		4	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0		5.0		5.0		5.0		5.0	
Minimum Split (s)	24.0	24.0	24.0		24.0		31.5		31.5		31.5	
Total Split (s)	36.0	36.0	36.0		36.0		32.0		32.0		32.0	
Total Split (%)	36.0%	36.0%	36.0%		36.0%		32.0%		32.0%		32.0%	
Maximum Green (s)	31.0	31.0	31.0		31.0		27.5		27.5		27.5	
Yellow Time (s)	4.0	4.0	4.0		4.0		3.5		3.5		3.5	
All-Red Time (s)	1.0	1.0	1.0		1.0		1.0		1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0		0.0		0.0	
Total Lost Time (s)	5.0	5.0	5.0		5.0		4.5		4.5		4.5	
Lead/Lag							Lead	Lead			Lag	Lag
Lead-Lag Optimize?							Yes	Yes			Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0		3.0		3.0	
Recall Mode	C-Min	C-Min	C-Min		C-Min		None		None		None	
Walk Time (s)	7.0	7.0	7.0		7.0		7.0		7.0		7.0	
Flash Dont Walk (s)	12.0	12.0	12.0		12.0		20.0		20.0		20.0	
Pedestrian Calls (#/hr)	0	0	0		0		0		0		0	
Act Effct Green (s)	74.4	74.4	74.4		74.4		6.2		6.2		13.7	
Actuated g/C Ratio	0.74	0.74	0.74		0.74		0.06		0.06		0.14	
v/c Ratio	0.09	0.47	0.03		0.52		0.13		0.13		0.62	
Control Delay	7.4	7.1	6.7		7.6		32.4		32.4		50.9	
Queue Delay	0.0	0.0	0.0		0.0		0.0		0.0		0.0	
Total Delay	7.4	7.1	6.7		7.6		32.4		32.4		50.9	
LOS	A	A	A		A		C		C		D	
Approach Delay	7.1				7.6		32.4		32.4		50.9	
Approach LOS	A				A		C		C		D	
Queue Length 50th (ft)	3	116	1		132		3		3		78	
Queue Length 95th (ft)	17	283	8		308		19		19		114	
Internal Link Dist (ft)	349				1131		236		236		366	
Turn Bay Length (ft)	75		75									
Base Capacity (vph)	223	2543	257		2502		412		412		425	
Starvation Cap Reductn	0	0	0		0		0		0		0	
Spillback Cap Reductn	0	0	0		0		0		0		0	
Storage Cap Reductn	0	0	0		0		0		0		0	
Reduced v/c Ratio	0.09	0.47	0.03		0.52		0.03		0.03		0.32	







Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow  
 Natural Cycle: 100  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.62  
 Intersection Signal Delay: 9.7  
 Intersection Capacity Utilization 52.9%  
 Analysis Period (min) 15  
 Intersection LOS: A  
 ICU Level of Service A

Lanes, Volumes, Timings  
13: Orange Grove Ave & Monterey Rd

12/28/2021

Splits and Phases: 13: Orange Grove Ave & Monterey Rd

 Ø2 (R) 36 s		 Ø3 32 s	 Ø4 32 s
 Ø5 (R) 36 s			

Lanes, Volumes, Timings  
 16: Meridian Ave & Hope St

12/28/2021



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	3	53	169	16	60	115
Future Volume (vph)	3	53	169	16	60	115
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	13	12	12	13
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.873		0.988			
Flt Protected	0.997					0.983
Satd. Flow (prot)	1365	0	1601	0	0	1593
Flt Permitted	0.997					0.983
Satd. Flow (perm)	1365	0	1601	0	0	1593
Link Speed (mph)	25		25			25
Link Distance (ft)	299		340			399
Travel Time (s)	8.2		9.3			10.9
Peak Hour Factor	0.80	0.80	0.80	0.80	0.83	0.83
Adj. Flow (vph)	4	66	211	20	72	139
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	0	231	0	0	211
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.24	1.24	1.19	1.24	1.24	1.19
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free


















Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	36.9%
Analysis Period (min)	15
	ICU Level of Service A



Lanes, Volumes, Timings  
17: Fremont Ave & Grevelia St

12/28/2021

													
Lane Group	EBL2	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	NET	
Lane Configurations													
Traffic Volume (vph)	5	7	13	2	10	7	8	762	2	2	612	8	
Future Volume (vph)	5	7	13	2	10	7	8	762	2	2	612	8	
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Lane Width (ft)	12	12	12	12	12	12	12	14	12	12	14	12	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.930			0.951								
Flt Protected		0.990			0.994			0.999					
Satd. Flow (prot)	0	1444	0	0	1483	0	0	1672	0	0	1673	1569	
Flt Permitted		0.921			0.952			0.993			0.999		
Satd. Flow (perm)	0	1344	0	0	1420	0	0	1661	0	0	1672	1569	
Right Turn on Red	Yes												
Satd. Flow (RTOR)									62				
Link Speed (mph)					25					30			30
Link Distance (ft)					1201					446			255
Travel Time (s)					32.8					12.2			5.8
Peak Hour Factor	0.88	0.88	0.88	0.80	0.80	0.80	0.91	0.91	0.91	0.82	0.82	0.92	
Adj. Flow (vph)	6	8	15	3	13	9	9	837	2	2	746	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	29	0	0	25	0	0	848	0	0	748	9	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Left	
Median Width(ft)	0				0				0		0		
Link Offset(ft)	0				0				0		0		
Crosswalk Width(ft)	16				16				16				
Two way Left Turn Lane													
Headway Factor	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.15	1.24	1.24	1.15	1.24	
Turning Speed (mph)	15	9		15	9		15	9		15			
Number of Detectors	1	2	1		2	1		2	1		2	2	
Detector Template	Left	Thru	Left		Thru	Left		Thru	Left		Thru	Thru	
Leading Detector (ft)	20	100	20		100	20		100	20		100	100	
Trailing Detector (ft)	0	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20		6	20		6	20		6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel													
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	94				94				94				
Detector 2 Size(ft)	6				6				6				
Detector 2 Type	Cl+Ex				Cl+Ex				Cl+Ex				
Detector 2 Channel													
Detector 2 Extend (s)	0.0				0.0				0.0				
Turn Type	Perm	NA	Perm		NA	Perm		NA	Perm		NA	NA	
Protected Phases	4			8			2			6			
Permitted Phases	4			8			2			6			
Detector Phase	4	4	8		8	2		2	6		6	9	
Switch Phase													

Lanes, Volumes, Timings  
 17: Fremont Ave & Grevelia St

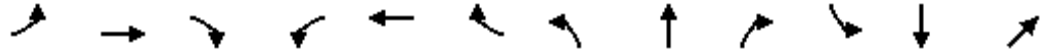
12/28/2021



Lane Group	SWT
Lane Configurations	↑
Traffic Volume (vph)	8
Future Volume (vph)	8
Ideal Flow (vphpl)	1600
Lane Width (ft)	12
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	1569
Flt Permitted	
Satd. Flow (perm)	1569
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	30
Link Distance (ft)	405
Travel Time (s)	9.2
Peak Hour Factor	0.92
Adj. Flow (vph)	9
Shared Lane Traffic (%)	
Lane Group Flow (vph)	9
Enter Blocked Intersection	No
Lane Alignment	Left
Median Width(ft)	0
Link Offset(ft)	0
Crosswalk Width(ft)	16
Two way Left Turn Lane	
Headway Factor	1.24
Turning Speed (mph)	
Number of Detectors	2
Detector Template	Thru
Leading Detector (ft)	100
Trailing Detector (ft)	0
Detector 1 Position(ft)	0
Detector 1 Size(ft)	6
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	94
Detector 2 Size(ft)	6
Detector 2 Type	Cl+Ex
Detector 2 Channel	
Detector 2 Extend (s)	0.0
Turn Type	NA
Protected Phases	9
Permitted Phases	
Detector Phase	9
Switch Phase	

Lanes, Volumes, Timings  
17: Fremont Ave & Grevelia St

12/28/2021



Lane Group	EBL2	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	NET
Minimum Initial (s)	10.0	10.0		6.0	6.0		40.0	40.0		40.0	40.0	40.5
Minimum Split (s)	20.0	20.0		11.0	11.0		45.0	45.0		45.0	45.0	45.0
Total Split (s)	25.0	25.0		25.0	25.0		45.0	45.0		45.0	45.0	45.0
Total Split (%)	21.7%	21.7%		21.7%	21.7%		39.1%	39.1%		39.1%	39.1%	39.1%
Maximum Green (s)	20.0	20.0		20.0	20.0		40.0	40.0		40.0	40.0	40.5
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		5.0			5.0			5.0			5.0	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.5	3.5		3.5	3.5		0.2	0.2		0.2	0.2	3.0
Recall Mode	None	None		None	None		Max	Max		Max	Max	None
Walk Time (s)	7.0	7.0								7.0	7.0	
Flash Dont Walk (s)	8.0	8.0								7.0	7.0	
Pedestrian Calls (#/hr)	0	0								0	0	
Act Effct Green (s)		10.9			8.3			53.5			53.5	45.1
Actuated g/C Ratio		0.16			0.13			0.81			0.81	0.68
v/c Ratio		0.13			0.14			0.63			0.55	0.01
Control Delay		31.7			32.8			14.4			14.1	11.6
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		31.7			32.8			14.4			14.1	11.6
LOS		C			C			B			B	B
Approach Delay		31.7			32.8			14.4			14.1	11.6
Approach LOS		C			C			B			B	B
Queue Length 50th (ft)		6			6			0			0	0
Queue Length 95th (ft)		46			37			#946			#725	14
Internal Link Dist (ft)		1121			366			175			537	229
Turn Bay Length (ft)												
Base Capacity (vph)		439			464			1355			1352	1069
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		0.07			0.05			0.63			0.55	0.01






Intersection Summary

Area Type: Other  
 Cycle Length: 115  
 Actuated Cycle Length: 66.2  
 Natural Cycle: 130  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.63  
 Intersection Signal Delay: 14.8      Intersection LOS: B  
 Intersection Capacity Utilization 108.8%      ICU Level of Service G  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Lanes, Volumes, Timings  
 17: Fremont Ave & Grevelia St

12/28/2021

Splits and Phases: 17: Fremont Ave & Grevelia St



















 Ø2	 Ø4	 Ø9
45 s	25 s	45 s
 Ø6	 Ø8	
45 s	25 s	



Lane Group	SWT
Minimum Initial (s)	40.5
Minimum Split (s)	45.0
Total Split (s)	45.0
Total Split (%)	39.1%
Maximum Green (s)	40.5
Yellow Time (s)	3.5
All-Red Time (s)	1.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.5
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	45.1
Actuated g/C Ratio	0.68
v/c Ratio	0.01
Control Delay	11.6
Queue Delay	0.0
Total Delay	11.6
LOS	B
Approach Delay	11.6
Approach LOS	B
Queue Length 50th (ft)	0
Queue Length 95th (ft)	14
Internal Link Dist (ft)	325
Turn Bay Length (ft)	
Base Capacity (vph)	1069
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.01
<b>Intersection Summary</b>	

















Lanes, Volumes, Timings  
18: Meridian Ave & Grevelia St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	18	13	2	14	2	15	146	5	2	99	6
Future Volume (vph)	5	18	13	2	14	2	15	146	5	2	99	6
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	12	10	10	12	10	10
Storage Length (ft)	0		0	0		0	0		100	0		100
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.952			0.983				0.850			0.850
Flt Protected		0.993			0.994			0.995			0.999	
Satd. Flow (prot)	0	1532	0	0	1584	0	0	1457	1244	0	1463	1244
Flt Permitted		0.993			0.994			0.995			0.999	
Satd. Flow (perm)	0	1532	0	0	1584	0	0	1457	1244	0	1463	1244
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		441			1201			251			624	
Travel Time (s)		12.0			32.8			6.8			17.0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.84	0.84	0.84	0.80	0.80	0.80
Adj. Flow (vph)	6	23	16	3	18	3	18	174	6	3	124	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	45	0	0	24	0	0	192	6	0	127	8
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.35	1.35	1.24	1.35	1.35
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	26.9%						ICU Level of Service A					
Analysis Period (min)	15											

Lanes, Volumes, Timings  
 19: Diamond Ave & Mission St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	345	6	15	326	1	26	0	46	0	0	0
Future Volume (vph)	0	345	6	15	326	1	26	0	46	0	0	0
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	11	12	12	11	12	10	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998						0.914				
Flt Protected					0.998			0.982				
Satd. Flow (prot)	0	1362	0	0	1339	0	0	1408	0	0	1569	0
Flt Permitted					0.998			0.982				
Satd. Flow (perm)	0	1362	0	0	1339	0	0	1408	0	0	1569	0
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		294			324			374			223	
Travel Time (s)		6.7			7.4			10.2			5.1	
Peak Hour Factor	0.84	0.84	0.84	0.88	0.88	0.88	0.87	0.87	0.87	0.25	0.25	0.25
Parking (#/hr)		0	0		3	3						
Adj. Flow (vph)	0	411	7	17	370	1	30	0	53	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	418	0	0	388	0	0	83	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.47	1.24	1.24	1.50	1.24	1.35	1.24	1.24	1.24	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	46.7%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings  
20: Fairview Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	349	28	21	323	24	3	5	13	12	19	16
Future Volume (vph)	14	349	28	21	323	24	3	5	13	12	19	16
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	11	13	12	11	14	12	12	12	12	12	12	12
Storage Length (ft)	50		0	50		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989			0.990			0.917			0.954	
Flt Protected	0.950			0.950				0.992			0.987	
Satd. Flow (prot)	1441	1387	0	1441	1408	0	0	1427	0	0	1477	0
Flt Permitted	0.950			0.950				0.992			0.987	
Satd. Flow (perm)	1441	1387	0	1441	1408	0	0	1427	0	0	1477	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		324			613			381			228	
Travel Time (s)		7.4			13.9			10.4			6.2	
Peak Hour Factor	0.94	0.94	0.94	0.86	0.86	0.86	0.80	0.80	0.80	0.80	0.80	0.80
Parking (#/hr)		7	7		10	10						
Adj. Flow (vph)	15	371	30	24	376	28	4	6	16	15	24	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	401	0	24	404	0	0	26	0	0	59	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.43	1.24	1.30	1.40	1.24	1.24	1.24	1.24	1.24	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	35.8%
ICU Level of Service	A
Analysis Period (min)	15



Lanes, Volumes, Timings  
 21: Pasadena Ave & Mission St

12/28/2021



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑↑	↑	↑	↑	↑↑
Traffic Volume (vph)	210	23	97	141	29	102
Future Volume (vph)	210	23	97	141	29	102
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	13	13	12	12	11	14
Storage Length (ft)		0	0		100	100
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1621	1378	1490	1569	1441	2493
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1621	1378	1490	1569	1441	2493
Link Speed (mph)	30			30	30	
Link Distance (ft)	267			367	724	
Travel Time (s)	6.1			8.3	16.5	
Peak Hour Factor	0.88	0.88	0.80	0.80	0.80	0.80
Bus Blockages (#/hr)	0	0	0	0	0	2
Adj. Flow (vph)	239	26	121	176	36	128
Shared Lane Traffic (%)						
Lane Group Flow (vph)	239	26	121	176	36	128
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane					Yes	
Headway Factor	1.19	1.19	1.24	1.24	1.30	1.15
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Free	Free	

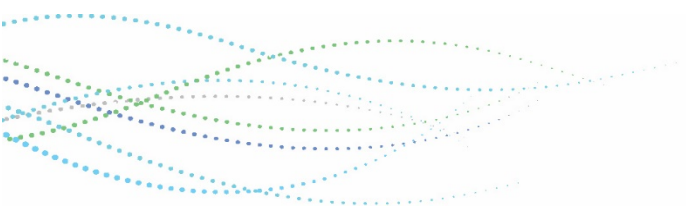
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	32.8%
ICU Level of Service	A
Analysis Period (min)	15



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## APPENDIX A: SYNCHRO OUTPUT SHEETS SCENARIO 4 - PM PEAK HOUR



Lanes, Volumes, Timings  
1: Fair Oaks Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	260	101	45	240	126	79	935	51	131	1236	95
Future Volume (vph)	109	260	101	45	240	126	79	935	51	131	1236	95
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	10	16	12	10	11	12	10	11	12
Storage Length (ft)	0		0	75		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr <sub>t</sub>		0.958			0.948			0.992			0.989	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1441	1330	0	1391	1685	0	1652	3360	0	1652	3336	0
Fl <sub>t</sub> Permitted	0.155			0.378			0.950			0.950		
Satd. Flow (perm)	235	1330	0	553	1685	0	1652	3360	0	1652	3336	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			24			7			10	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		427			434			375			355	
Travel Time (s)		9.7			9.9			8.5			8.1	
Peak Hour Factor	0.86	0.86	0.86	0.96	0.96	0.96	0.95	0.95	0.95	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	5	0	0	7	0
Parking (#/hr)		3	3									
Adj. Flow (vph)	127	302	117	47	250	131	83	984	54	142	1343	103
Shared Lane Traffic (%)												
Lane Group Flow (vph)	127	419	0	47	381	0	83	1038	0	142	1446	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.44	1.24	1.35	1.06	1.24	1.09	1.06	1.00	1.09	1.06	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
1: Fair Oaks Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases	3	8			4		1	6		5	2	
Permitted Phases	8			4								
Detector Phase	3	8		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	4.0	10.0		10.0	10.0		9.0	10.0		9.0	10.0	
Minimum Split (s)	8.5	28.5		27.0	27.0		13.5	25.0		13.5	25.0	
Total Split (s)	10.1	37.1		27.0	27.0		13.6	47.3		15.6	49.3	
Total Split (%)	10.1%	37.1%		27.0%	27.0%		13.6%	47.3%		15.6%	49.3%	
Maximum Green (s)	7.1	33.1		23.0	23.0		10.6	43.3		12.6	45.3	
Yellow Time (s)	3.0	3.5		3.5	3.5		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	0.5		0.5	0.5		0.0	0.0		0.0	0.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.5	3.0		3.0	3.0		1.5	4.0		1.5	4.0	
Minimum Gap (s)	2.5	3.0		3.0	3.0		1.5	3.0		1.5	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)		7.0		6.0	6.0			7.0			7.0	
Flash Dont Walk (s)		17.0		17.0	17.0			13.0			13.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	34.0	33.0		22.7	22.7		9.6	44.5		11.5	48.8	
Actuated g/C Ratio	0.34	0.33		0.23	0.23		0.10	0.44		0.12	0.49	
v/c Ratio	0.77	0.93		0.37	0.95		0.52	0.69		0.75	0.89	
Control Delay	55.1	59.6		42.6	70.7		65.5	22.5		67.0	32.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.5		0.0	0.0	
Total Delay	55.1	59.6		42.6	70.7		65.5	23.0		67.0	32.3	
LOS	E	E		D	E		E	C		E	C	
Approach Delay		58.6			67.6			26.1			35.4	
Approach LOS		E			E			C			D	
Queue Length 50th (ft)	58	245		25	226		52	292		88	435	
Queue Length 95th (ft)	#119	#402		63	#409		m107	307		#173	#617	
Internal Link Dist (ft)		347			354			295			275	
Turn Bay Length (ft)				75			150			150		
Base Capacity (vph)	166	454		127	406		175	1500		208	1632	
Starvation Cap Reductn	0	0		0	0		0	144		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.77	0.92		0.37	0.94		0.47	0.77		0.68	0.89	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow  
 Natural Cycle: 90

Lanes, Volumes, Timings  
 1: Fair Oaks Ave & Mission St

12/28/2021

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 39.7 Intersection LOS: D

Intersection Capacity Utilization 89.9% ICU Level of Service E


Analysis Period (min) 15

# 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.

Splits and Phases: 1: Fair Oaks Ave & Mission St

 Ø1	 Ø2 (R)	 Ø3	 Ø4
13.6 s	49.3 s	10.1 s	27 s
 Ø5	 Ø6 (R)	 Ø8	
15.6 s	47.3 s	37.1 s	

Lanes, Volumes, Timings  
2: Fremont Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	329	125	46	320	74	102	708	26	115	588	28
Future Volume (vph)	38	329	125	46	320	74	102	708	26	115	588	28
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	11	16	12	11	15	12	10	10	10	10	10	10
Storage Length (ft)	125		0	0		0	50		100	75		100
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.959			0.972				0.850			0.850
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1441	1471	0	1441	1431	0	1391	1464	1244	1391	1464	1244
Fl <sub>t</sub> Permitted	0.301			0.214			0.272			0.183		
Satd. Flow (perm)	456	1471	0	324	1431	0	398	1464	1244	268	1464	1244
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33			20				27			30
Link Speed (mph)		30			30			30				30
Link Distance (ft)		613			414			375				744
Travel Time (s)		13.9			9.4			8.5				16.9
Peak Hour Factor	0.88	0.88	0.88	0.95	0.95	0.95	0.92	0.92	0.92	0.90	0.90	0.90
Bus Blockages (#/hr)	0	2	2	0	2	2	0	0	0	0	0	0
Parking (#/hr)		6	6		8	8						
Adj. Flow (vph)	43	374	142	48	337	78	111	770	28	128	653	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	516	0	48	415	0	111	770	28	128	653	31
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		22			22			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.30	1.28	1.24	1.30	1.35	1.24	1.35	1.35	1.35	1.35	1.35	1.35
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings  
2: Fremont Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	18.5	18.5		18.5	18.5		20.5	20.5	20.5	20.5	20.5	20.5
Total Split (s)	23.2	23.2		23.2	23.2		36.8	36.8	36.8	36.8	36.8	36.8
Total Split (%)	38.7%	38.7%		38.7%	38.7%		61.3%	61.3%	61.3%	61.3%	61.3%	61.3%
Maximum Green (s)	18.7	18.7		18.7	18.7		31.3	31.3	31.3	31.3	31.3	31.3
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5		4.5	4.5		5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		2.0	2.0		4.5	4.5	4.5	2.0	2.0	2.0
Minimum Gap (s)	3.0	3.0		2.0	2.0		3.5	3.5	3.5	2.0	2.0	2.0
Time Before Reduce (s)	1.5	1.5		0.0	0.0		2.0	2.0	2.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		8.0	8.0	8.0	8.0	8.0	8.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	18.7	18.7		18.7	18.7		31.3	31.3	31.3	31.3	31.3	31.3
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.52	0.52	0.52	0.52	0.52	0.52
v/c Ratio	0.30	1.07		0.48	0.90		0.54	1.01	0.04	0.92	0.86	0.05
Control Delay	22.7	85.5		37.0	46.3		10.4	36.4	1.2	80.6	26.6	3.4
Queue Delay	0.0	0.8		0.0	0.0		0.0	4.7	0.0	0.0	3.5	0.0
Total Delay	22.7	86.3		37.0	46.3		10.4	41.1	1.2	80.6	30.1	3.4
LOS	C	F		D	D		B	D	A	F	C	A
Approach Delay		81.4			45.3			36.1			37.0	
Approach LOS		F			D			D			D	
Queue Length 50th (ft)	12	~206		14	135		7	~50	0	39	186	0
Queue Length 95th (ft)	36	#361		#56	#293		m11	m#358	m1	#136	#389	10
Internal Link Dist (ft)		533			334			295			664	
Turn Bay Length (ft)	125						50		100	75		100
Base Capacity (vph)	142	481		100	459		207	763	661	139	763	663
Starvation Cap Reductn	0	0		0	0		0	12	0	0	0	0
Spillback Cap Reductn	0	1		0	0		0	0	0	0	55	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.30	1.07		0.48	0.90		0.54	1.03	0.04	0.92	0.92	0.05

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 9 (15%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 90

# Lanes, Volumes, Timings

## 2: Fremont Ave & Mission St

12/28/2021

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.07

Intersection Signal Delay: 47.2 Intersection LOS: D

Intersection Capacity Utilization 101.4% ICU Level of Service G

Analysis Period (min) 15

~ 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.

Splits and Phases: 2: Fremont Ave & Mission St





Lanes, Volumes, Timings  
3: Meridian Ave & Mission St

12/28/2021



Lane Group	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR2	NET
Lane Configurations	↔			↑	↗		↖			↖		↑
Traffic Volume (vph)	474	46	6	389	32	41	97	35	39	107	13	8
Future Volume (vph)	474	46	6	389	32	41	97	35	39	107	13	8
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	12	11	11	12	13	12	12	13	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.988				0.850		0.972			0.989		
Flt Protected				0.999			0.988			0.988		
Satd. Flow (prot)	1338	0	0	1333	1134	0	1557	0	0	1584	0	1569
Flt Permitted				0.992			0.866			0.844		
Satd. Flow (perm)	1338	0	0	1324	1134	0	1364	0	0	1353	0	1569
Right Turn on Red								No			No	
Satd. Flow (RTOR)												
Link Speed (mph)	30			30			25			25		30
Link Distance (ft)	408			294			373			340		356
Travel Time (s)	9.3			6.7			10.2			9.3		8.1
Peak Hour Factor	0.96	0.96	0.88	0.88	0.88	0.80	0.80	0.80	0.86	0.86	0.86	0.92
Bus Blockages (#/hr)	2	2	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)	6	6		4	4							
Adj. Flow (vph)	494	48	7	442	36	51	121	44	45	124	15	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	542	0	0	449	36	0	216	0	0	184	0	9
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left
Median Width(ft)	0			0			0			0		0
Link Offset(ft)	0			0			0			0		0
Crosswalk Width(ft)	16			16			16			16		16
Two way Left Turn Lane												
Headway Factor	1.49	1.24	1.24	1.51	1.51	1.24	1.19	1.24	1.24	1.19	1.24	1.24
Turning Speed (mph)		9	15		9	15		9	15		9	
Number of Detectors	2		1	2	1	1	2		1	2		2
Detector Template	Thru		Left	Thru	Right	Left	Thru		Left	Thru		Thru
Leading Detector (ft)	100		20	100	20	20	100		20	100		100
Trailing Detector (ft)	0		0	0	0	0	0		0	0		0
Detector 1 Position(ft)	0		0	0	0	0	0		0	0		0
Detector 1 Size(ft)	6		20	6	20	20	6		20	6		6
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Detector 2 Position(ft)	94			94			94			94		94
Detector 2 Size(ft)	6			6			6			6		6
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		0.0
Turn Type	NA		Perm	NA	Perm	Perm	NA		Perm	NA		NA
Protected Phases	2			6			8			4		9
Permitted Phases			6		6	8			4			

Lanes, Volumes, Timings  
 3: Meridian Ave & Mission St

12/28/2021



Lane Group	SWT
Lane Configurations	↑
Traffic Volume (vph)	8
Future Volume (vph)	8
Ideal Flow (vphpl)	1600
Lane Width (ft)	12
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	1569
Flt Permitted	
Satd. Flow (perm)	1569
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	30
Link Distance (ft)	325
Travel Time (s)	7.4
Peak Hour Factor	0.92
Bus Blockages (#/hr)	0
Parking (#/hr)	
Adj. Flow (vph)	9
Shared Lane Traffic (%)	
Lane Group Flow (vph)	9
Enter Blocked Intersection	No
Lane Alignment	Left
Median Width(ft)	0
Link Offset(ft)	0
Crosswalk Width(ft)	16
Two way Left Turn Lane	
Headway Factor	1.24
Turning Speed (mph)	
Number of Detectors	2
Detector Template	Thru
Leading Detector (ft)	100
Trailing Detector (ft)	0
Detector 1 Position(ft)	0
Detector 1 Size(ft)	6
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	94
Detector 2 Size(ft)	6
Detector 2 Type	Cl+Ex
Detector 2 Channel	
Detector 2 Extend (s)	0.0
Turn Type	NA
Protected Phases	9
Permitted Phases	

Lanes, Volumes, Timings  
 3: Meridian Ave & Mission St

12/28/2021



Lane Group	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR2	NET
Detector Phase	2		6	6	6	8	8		4	4		9
Switch Phase												
Minimum Initial (s)	24.0		24.0	24.0	24.0	5.0	5.0		5.0	5.0		40.5
Minimum Split (s)	28.7		28.7	28.7	28.7	28.5	28.5		28.5	28.5		45.0
Total Split (s)	46.5		46.5	46.5	46.5	28.5	28.5		28.5	28.5		45.0
Total Split (%)	38.8%		38.8%	38.8%	38.8%	23.8%	23.8%		23.8%	23.8%		37.5%
Maximum Green (s)	41.8		41.8	41.8	41.8	24.3	24.3		24.3	24.3		40.5
Yellow Time (s)	3.2		3.2	3.2	3.2	3.2	3.2		3.2	3.2		3.5
All-Red Time (s)	1.5		1.5	1.5	1.5	1.0	1.0		1.0	1.0		1.0
Lost Time Adjust (s)	0.0			0.0	0.0		0.0			0.0		0.0
Total Lost Time (s)	4.7			4.7	4.7		4.2			4.2		4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0		1.0	1.0	1.0	3.5	3.5		3.5	3.5		3.0
Recall Mode	Min		Min	Min	Min	None	None		None	None		None
Walk Time (s)	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0		
Flash Dont Walk (s)	12.0		16.0	16.0	16.0	19.0	19.0		18.0	18.0		
Pedestrian Calls (#/hr)	0		0	0	0	0	0		0	0		
Act Effct Green (s)	45.4			45.4	45.4		19.5			19.5		44.0
Actuated g/C Ratio	0.52			0.52	0.52		0.22			0.22		0.50
v/c Ratio	0.78			0.66	0.06		0.71			0.61		0.01
Control Delay	34.9			29.9	21.4		50.1			45.2		23.5
Queue Delay	0.0			0.0	0.0		0.0			0.0		0.0
Total Delay	34.9			29.9	21.4		50.1			45.2		23.5
LOS	C			C	C		D			D		C
Approach Delay	34.9			29.3			50.1			45.2		23.5
Approach LOS	C			C			D			D		C
Queue Length 50th (ft)	135			101	5		80			66		1
Queue Length 95th (ft)	#716			#536	43		#219			203		17
Internal Link Dist (ft)	328			214			293			260		276
Turn Bay Length (ft)												
Base Capacity (vph)	692			685	586		410			406		786
Starvation Cap Reductn	0			0	0		0			0		0
Spillback Cap Reductn	0			0	0		0			0		0
Storage Cap Reductn	0			0	0		0			0		0
Reduced v/c Ratio	0.78			0.66	0.06		0.53			0.45		0.01





















Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	87.8
Natural Cycle:	125
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.78
Intersection Signal Delay:	36.4
Intersection LOS:	D
Intersection Capacity Utilization:	92.7%
ICU Level of Service:	F
Analysis Period (min):	15
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Lanes, Volumes, Timings  
 3: Meridian Ave & Mission St

12/28/2021

Splits and Phases: 3: Meridian Ave & Mission St

 Ø2   	 Ø4   	 Ø9   
 Ø6   	 Ø8   	

Lanes, Volumes, Timings  
 3: Meridian Ave & Mission St

12/28/2021



Lane Group	SWT
Detector Phase	9
Switch Phase	
Minimum Initial (s)	40.5
Minimum Split (s)	45.0
Total Split (s)	45.0
Total Split (%)	37.5%
Maximum Green (s)	40.5
Yellow Time (s)	3.5
All-Red Time (s)	1.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.5
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	44.0
Actuated g/C Ratio	0.50
v/c Ratio	0.01
Control Delay	23.5
Queue Delay	0.0
Total Delay	23.5
LOS	C
Approach Delay	23.5
Approach LOS	C
Queue Length 50th (ft)	1
Queue Length 95th (ft)	17
Internal Link Dist (ft)	245
Turn Bay Length (ft)	
Base Capacity (vph)	786
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.01
<b>Intersection Summary</b>	

Lanes, Volumes, Timings  
4: Mission St & Orange Grove Ave

12/28/2021



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	213	350	346	120	147	211
Future Volume (vph)	213	350	346	120	147	211
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	11	12	11	11
Storage Length (ft)	40			0	100	100
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	0.91
Fr <sub>t</sub>			0.961		0.940	0.850
Fl <sub>t</sub> Protected	0.950				0.971	
Satd. Flow (prot)	1391	2654	2561	0	2685	1173
Fl <sub>t</sub> Permitted	0.458				0.971	
Satd. Flow (perm)	671	2654	2561	0	2685	1173
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			119		104	123
Link Speed (mph)		30	30		30	
Link Distance (ft)		161	588		432	
Travel Time (s)		3.7	13.4		9.8	
Peak Hour Factor	0.85	0.85	0.89	0.89	0.93	0.93
Bus Blockages (#/hr)	0	2	0	0	0	0
Parking (#/hr)		10	10	10		
Adj. Flow (vph)	251	412	389	135	158	227
Shared Lane Traffic (%)						46%
Lane Group Flow (vph)	251	412	524	0	262	123
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		22	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.35	1.43	1.43	1.24	1.30	1.30
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	6	6		20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			

Lanes, Volumes, Timings  
4: Mission St & Orange Grove Ave

12/28/2021



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Detector Phase	4	4	8		6	6
Switch Phase						
Minimum Initial (s)	30.0	30.0	30.0		4.0	4.0
Minimum Split (s)	35.0	35.0	36.0		24.0	24.0
Total Split (s)	36.0	36.0	36.0		24.0	24.0
Total Split (%)	60.0%	60.0%	60.0%		40.0%	40.0%
Maximum Green (s)	31.0	31.0	31.0		20.0	20.0
Yellow Time (s)	4.0	4.0	4.0		3.0	3.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Min	Min	Min		None	None
Walk Time (s)			20.0		8.0	8.0
Flash Dont Walk (s)			10.0		12.0	12.0
Pedestrian Calls (#/hr)			0		0	0
Act Effct Green (s)	30.3	30.3	30.3		8.2	8.2
Actuated g/C Ratio	0.64	0.64	0.64		0.17	0.17
v/c Ratio	0.59	0.24	0.31		0.48	0.40
Control Delay	13.4	4.5	3.8		13.8	8.7
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	13.4	4.5	3.8		13.8	8.7
LOS	B	A	A		B	A
Approach Delay		7.9	3.8		12.2	
Approach LOS		A	A		B	
Queue Length 50th (ft)	31	20	20		20	0
Queue Length 95th (ft)	99	39	44		46	36
Internal Link Dist (ft)		81	508		352	
Turn Bay Length (ft)	40				100	100
Base Capacity (vph)	438	1734	1715		1192	565
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	0.24	0.31		0.22	0.22

Intersection Summary

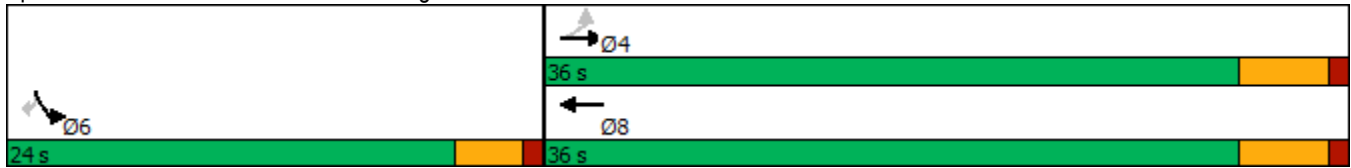
Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	47.5
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.59
Intersection Signal Delay:	7.6
Intersection Capacity Utilization:	69.3%
Intersection LOS:	A
ICU Level of Service:	C

Lanes, Volumes, Timings  
4: Mission St & Orange Grove Ave

12/28/2021

Analysis Period (min) 15

Splits and Phases: 4: Mission St & Orange Grove Ave





Lanes, Volumes, Timings  
5: Fair Oaks Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕↔		↕	↕↔	
Traffic Volume (vph)	43	38	98	17	29	24	61	998	24	18	1309	55
Future Volume (vph)	43	38	98	17	29	24	61	998	24	18	1309	55
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	11	12	10	11	12
Storage Length (ft)	0		0	0		0	75		0	75		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.926			0.953			0.996			0.994	
Flt Protected		0.988			0.988		0.950			0.950		
Satd. Flow (prot)	0	1387	0	0	1428	0	1652	3408	0	1652	3401	0
Flt Permitted		0.914			0.865		0.122			0.235		
Satd. Flow (perm)	0	1283	0	0	1250	0	212	3408	0	409	3401	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		58			25			4			7	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		420			404			386			375	
Travel Time (s)		11.5			11.0			8.8			8.5	
Peak Hour Factor	0.88	0.88	0.88	0.80	0.80	0.80	0.96	0.96	0.96	0.94	0.94	0.94
Adj. Flow (vph)	49	43	111	21	36	30	64	1040	25	19	1393	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	203	0	0	87	0	64	1065	0	19	1452	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.30	1.24	1.24	1.30	1.24	1.09	1.04	1.00	1.09	1.04	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		1	6		5	2	

Lanes, Volumes, Timings  
5: Fair Oaks Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		4.0	10.0		4.0	10.0	
Minimum Split (s)	27.0	27.0		27.0	27.0		7.0	34.0		8.0	34.0	
Total Split (s)	29.0	29.0		29.0	29.0		9.0	63.0		8.0	62.0	
Total Split (%)	29.0%	29.0%		29.0%	29.0%		9.0%	63.0%		8.0%	62.0%	
Maximum Green (s)	24.5	24.5		24.5	24.5		6.0	59.0		4.0	58.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.0	0.0		1.0	0.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		3.0	4.0		4.0	4.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	2.0		2.5	2.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)	7.0	7.0		6.0	6.0			9.0			9.0	
Flash Dont Walk (s)	15.5	15.5		16.5	16.5			21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)		17.2			17.2		74.4	70.8		71.1	67.1	
Actuated g/C Ratio		0.17			0.17		0.74	0.71		0.71	0.67	
v/c Ratio		0.76			0.37		0.27	0.44		0.05	0.64	
Control Delay		45.1			29.5		7.0	8.3		4.0	8.6	
Queue Delay		0.1			0.0		0.0	0.1		0.0	0.7	
Total Delay		45.1			29.5		7.0	8.4		4.0	9.3	
LOS		D			C		A	A		A	A	
Approach Delay		45.1			29.5			8.3			9.2	
Approach LOS		D			C			A			A	
Queue Length 50th (ft)		89			35		9	110		4	208	
Queue Length 95th (ft)		152			63		25	251		m2	m93	
Internal Link Dist (ft)		340			324			306			295	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)		358			325		245	2415		352	2285	
Starvation Cap Reductn		0			0		0	0		0	441	
Spillback Cap Reductn		3			1		0	233		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.57			0.27		0.26	0.49		0.05	0.79	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 6 (6%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.76

# Lanes, Volumes, Timings

## 5: Fair Oaks Ave & El Centro St

12/28/2021

Intersection Signal Delay: 12.0	Intersection LOS: B
Intersection Capacity Utilization 68.1%	ICU Level of Service C
Analysis Period (min) 15	

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

Splits and Phases: 5: Fair Oaks Ave & El Centro St

 Ø1	 Ø2 (R)	 Ø4
9 s	62 s	29 s
 Ø5	 Ø6 (R)	 Ø8
8 s	63 s	29 s

Lanes, Volumes, Timings  
6: Fremont Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘		↗	↘	
Traffic Volume (vph)	33	90	58	31	64	37	24	766	25	24	713	22
Future Volume (vph)	33	90	58	31	64	37	24	766	25	24	713	22
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	10	12	12	10	12	12
Storage Length (ft)	0		0	0		0	75		0	75		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.957			0.962			0.995			0.995	
Flt Protected		0.991			0.988		0.950			0.950		
Satd. Flow (prot)	0	1537	0	0	1541	0	1391	1561	0	1391	1561	0
Flt Permitted		0.927			0.890		0.253			0.183		
Satd. Flow (perm)	0	1438	0	0	1388	0	370	1561	0	268	1561	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		40			32			4			4	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		632			417			438			375	
Travel Time (s)		17.2			11.4			10.0			8.5	
Peak Hour Factor	0.84	0.84	0.84	0.82	0.82	0.82	0.91	0.91	0.91	0.97	0.97	0.97
Adj. Flow (vph)	39	107	69	38	78	45	26	842	27	25	735	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	215	0	0	161	0	26	869	0	25	758	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.35	1.24	1.24	1.35	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	

Lanes, Volumes, Timings  
6: Fremont Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	22.0	22.0		22.0	22.0		38.0	38.0		38.0	38.0	
Total Split (%)	36.7%	36.7%		36.7%	36.7%		63.3%	63.3%		63.3%	63.3%	
Maximum Green (s)	17.0	17.0		17.0	17.0		33.0	33.0		33.0	33.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.5	4.5		4.5	4.5		4.0	4.0		4.0	4.0	
Minimum Gap (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	1.5	1.5		1.5	1.5		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		C-Min	C-Min		C-Min	C-Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		13.5			13.5		36.5	36.5		36.5	36.5	
Actuated g/C Ratio		0.22			0.22		0.61	0.61		0.61	0.61	
v/c Ratio		0.61			0.48		0.12	0.91		0.15	0.80	
Control Delay		23.6			19.9		8.0	30.0		8.9	14.0	
Queue Delay		0.0			0.0		0.0	20.2		0.0	0.6	
Total Delay		23.7			19.9		8.0	50.1		8.9	14.7	
LOS		C			B		A	D		A	B	
Approach Delay		23.7			19.9			48.9			14.5	
Approach LOS		C			B			D			B	
Queue Length 50th (ft)		55			40		4	244		3	122	
Queue Length 95th (ft)		98			72		15	#544		m5	m#195	
Internal Link Dist (ft)		552			337			358			295	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)		436			416		224	950		162	950	
Starvation Cap Reductn		0			0		0	0		0	39	
Spillback Cap Reductn		2			1		0	107		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.50			0.39		0.12	1.03		0.15	0.83	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 36 (60%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.91



Lanes, Volumes, Timings  
7: Meridian Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	10	93	72	36	85	51	47	112	47	13	138	8
Future Volume (vph)	10	93	72	36	85	51	47	112	47	13	138	8
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	12	13	12	12	13	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.945			0.960			0.969			0.993	
Flt Protected		0.997			0.990			0.989			0.996	
Satd. Flow (prot)	0	1527	0	0	1541	0	0	1553	0	0	1603	0
Flt Permitted		0.997			0.990			0.989			0.996	
Satd. Flow (perm)	0	1527	0	0	1541	0	0	1553	0	0	1603	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1194			309			450			373	
Travel Time (s)		32.6			8.4			12.3			10.2	
Peak Hour Factor	0.80	0.80	0.80	0.87	0.87	0.87	0.80	0.80	0.80	0.85	0.85	0.85
Adj. Flow (vph)	13	116	90	41	98	59	59	140	59	15	162	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	219	0	0	198	0	0	258	0	0	186	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 58.5% ICU Level of Service B

Analysis Period (min) 15

Lanes, Volumes, Timings  
8: orange Grove Ave & El Centro St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	↕
Traffic Volume (vph)	16	123	7	9	75	56	13	52	7	45	37	12
Future Volume (vph)	16	123	7	9	75	56	13	52	7	45	37	12
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	12	13	12	13	13	12
Storage Length (ft)	0		0	0		0	0		0	0		75
Storage Lanes	0		0	0		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.993			0.946			0.986			0.963	
Fl <sub>t</sub> Protected		0.995			0.997			0.991		0.950		
Satd. Flow (prot)	0	1602	0	0	1529	0	0	1584	0	1540	1561	0
Fl <sub>t</sub> Permitted		0.995			0.997			0.991		0.950		
Satd. Flow (perm)	0	1602	0	0	1529	0	0	1584	0	1540	1561	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		426			1194			450			376	
Travel Time (s)		11.6			32.6			12.3			10.3	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.82	0.82	0.82	0.92	0.92	0.92
Adj. Flow (vph)	20	154	9	11	94	70	16	63	9	49	40	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	183	0	0	175	0	0	88	0	49	53	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			13			13	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.19	1.24	1.19	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	32.0%
ICU Level of Service	A
Analysis Period (min)	15



Lanes, Volumes, Timings  
 9: Pasadena Ave & El Centro St

12/28/2021

























Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↑	↗	↘	↑	
Traffic Volume (vph)	0	0	0	36	0	38	0	84	29	25	69	1
Future Volume (vph)	0	0	0	36	0	38	0	84	29	25	69	1
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	12	14	12	14	12	11	14	12	11	12
Storage Length (ft)	0		0	0		0	0		75	100		0
Storage Lanes	0		0	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.930				0.850		0.998	
Fl <sub>t</sub> Protected					0.976					0.950		
Satd. Flow (prot)	0	1569	0	0	1424	0	0	1516	1411	1490	1513	0
Fl <sub>t</sub> Permitted					0.976					0.950		
Satd. Flow (perm)	0	1569	0	0	1424	0	0	1516	1411	1490	1513	0
Link Speed (mph)		30			25			30			30	
Link Distance (ft)		367			417			410			724	
Travel Time (s)		8.3			11.4			9.3			16.5	
Peak Hour Factor	0.25	0.25	0.25	0.89	0.89	0.89	0.88	0.88	0.88	0.80	0.80	0.80
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	0
Adj. Flow (vph)	0	0	0	40	0	43	0	95	33	31	86	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	83	0	0	95	33	31	87	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.24	1.24	1.24	1.15	1.24	1.15	1.24	1.30	1.16	1.24	1.30	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	20.1%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
11: Fremont Ave & Monterey Rd

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	596	177	49	618	36	161	716	32	67	682	49
Future Volume (vph)	68	596	177	49	618	36	161	716	32	67	682	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	12	12	10	12	12	10	10	16	10	10	16
Storage Length (ft)	150		0	125		0	100		50	100		40
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25		25			
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.966			0.992				0.850			0.850
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	3419	0	1652	3511	0	1391	1464	1511	1391	1464	1511
Fl <sub>t</sub> Permitted	0.245			0.235			0.250			0.196		
Satd. Flow (perm)	426	3419	0	409	3511	0	366	1464	1511	287	1464	1511
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		64			10				36			36
Link Speed (mph)		35			35			30				30
Link Distance (ft)		666			643			396				474
Travel Time (s)		13.0			12.5			9.0				10.8
Peak Hour Factor	0.87	0.87	0.87	0.93	0.93	0.93	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	78	685	203	53	665	39	175	778	35	69	703	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	78	888	0	53	704	0	175	778	35	69	703	51
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.09	1.00	1.00	1.09	1.00	1.00	1.35	1.35	1.06	1.35	1.35	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			4			2				2

Lanes, Volumes, Timings  
 11: Fremont Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			4			2		2	2		2
Detector Phase	4	4		4	4		2	2	2	2	2	2
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	22.0	22.0		22.0	22.0		38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	36.7%	36.7%		36.7%	36.7%		63.3%	63.3%	63.3%	63.3%	63.3%	63.3%
Maximum Green (s)	17.0	17.0		17.0	17.0		33.0	33.0	33.0	33.0	33.0	33.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.5	4.5		4.5	4.5		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Gap (s)	3.5	3.5		3.5	3.5		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	1.5	1.5		1.5	1.5		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	17.0	17.0		17.0	17.0		33.0	33.0	33.0	33.0	33.0	33.0
Actuated g/C Ratio	0.28	0.28		0.28	0.28		0.55	0.55	0.55	0.55	0.55	0.55
v/c Ratio	0.65	0.88		0.46	0.70		0.87	0.97	0.04	0.44	0.87	0.06
Control Delay	48.9	31.0		33.8	23.5		56.1	41.0	2.7	19.0	26.8	3.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	31.0		33.8	23.5		56.1	41.0	2.7	19.0	26.8	3.5
LOS	D	C		C	C		E	D	A	B	C	A
Approach Delay		32.5			24.2			42.3				24.7
Approach LOS		C			C			D				C
Queue Length 50th (ft)	25	148		16	117		49	243	0	13	198	2
Queue Length 95th (ft)	#82	#235		#57	171		#163	#481	10	#52	#416	14
Internal Link Dist (ft)		586			563			316				394
Turn Bay Length (ft)	150			125			100		50	100		40
Base Capacity (vph)	120	1014		115	1001		201	805	847	157	805	847
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.88		0.46	0.70		0.87	0.97	0.04	0.44	0.87	0.06

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 36 (60%), Referenced to phase 2:NBSB and 6:, Start of Yellow  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.97

Lanes, Volumes, Timings  
11: Fremont Ave & Monterey Rd

12/28/2021

Intersection Signal Delay: 31.6	Intersection LOS: C
Intersection Capacity Utilization 95.3%	ICU Level of Service F
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 11: Fremont Ave & Monterey Rd



Lanes, Volumes, Timings  
12: Meridian Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	775	194	45	830	23	239	146	52	31	193	14
Future Volume (vph)	23	775	194	45	830	23	239	146	52	31	193	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	12	10	11	12	12	13	12	12	13	12
Storage Length (ft)	225		0	175		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.970			0.996			0.984			0.992	
Fl <sub>t</sub> Protected	0.950			0.950				0.973			0.994	
Satd. Flow (prot)	1652	3319	0	1652	3408	0	0	1552	0	0	1598	0
Fl <sub>t</sub> Permitted	0.230			0.185				0.651			0.919	
Satd. Flow (perm)	400	3319	0	322	3408	0	0	1038	0	0	1478	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		63			6			13			6	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		1211			592			371			479	
Travel Time (s)		23.6			11.5			10.1			13.1	
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.87	0.87	0.87	0.85	0.85	0.85
Adj. Flow (vph)	24	824	206	48	892	25	275	168	60	36	227	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	1030	0	48	917	0	0	503	0	0	279	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.00	1.09	1.04	1.00	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			4			4	

Lanes, Volumes, Timings  
 12: Meridian Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			2			4			4		
Detector Phase	2	2		2	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	30.0	30.0		30.0	30.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	35.0	35.0		35.0	35.0		24.0	24.0		24.0	24.0	
Total Split (s)	35.0	35.0		35.0	35.0		30.0	30.0		30.0	30.0	
Total Split (%)	53.8%	53.8%		53.8%	53.8%		46.2%	46.2%		46.2%	46.2%	
Maximum Green (s)	30.0	30.0		30.0	30.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0			0.0		
Total Lost Time (s)	5.0	5.0		5.0	5.0		4.0			4.0		
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	30.0	30.0		30.0	30.0		26.0			26.0		
Actuated g/C Ratio	0.46	0.46		0.46	0.46		0.40			0.40		
v/c Ratio	0.13	0.66		0.32	0.58		1.19			0.47		
Control Delay	12.3	15.1		18.6	14.7		129.4			17.3		
Queue Delay	0.0	0.0		0.0	0.0		0.0			0.0		
Total Delay	12.3	15.1		18.6	14.7		129.4			17.3		
LOS	B	B		B	B		F			B		
Approach Delay		15.1			14.8		129.4			17.3		
Approach LOS		B			B		F			B		
Queue Length 50th (ft)	5	146		11	132		~246			77		
Queue Length 95th (ft)	19	208		39	185		#398			128		
Internal Link Dist (ft)		1131			512		291			399		
Turn Bay Length (ft)	225			175								
Base Capacity (vph)	184	1565		148	1576		423			594		
Starvation Cap Reductn	0	0		0	0		0			0		
Spillback Cap Reductn	0	0		0	0		0			0		
Storage Cap Reductn	0	0		0	0		0			0		
Reduced v/c Ratio	0.13	0.66		0.32	0.58		1.19			0.47		

Intersection Summary

Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	65
Natural Cycle:	75
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.19
Intersection Signal Delay:	35.8
Intersection LOS:	D
Intersection Capacity Utilization:	91.9%
ICU Level of Service:	F
Analysis Period (min):	15
~ Volume exceeds capacity, queue is theoretically infinite.	

Lanes, Volumes, Timings  
12: Meridian Ave & Monterey Rd

12/28/2021

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 12: Meridian Ave & Monterey Rd



Lanes, Volumes, Timings  
 13: Orange Grove Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	911	1	12	975	96	1	0	12	69	5	9
Future Volume (vph)	15	911	1	12	975	96	1	0	12	69	5	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1600	1600	1600	1600	1600	1600
Lane Width (ft)	10	11	12	10	11	12	12	13	12	12	13	12
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.987			0.873				0.985
Fl <sub>t</sub> Protected	0.950			0.950				0.997				0.960
Satd. Flow (prot)	1652	3421	0	1652	3377	0	0	1411	0	0	1533	0
Fl <sub>t</sub> Permitted	0.220			0.254				0.997				0.960
Satd. Flow (perm)	382	3421	0	442	3377	0	0	1411	0	0	1533	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					11			79				7
Link Speed (mph)		35			35			25				25
Link Distance (ft)		429			1211			316				446
Travel Time (s)		8.4			23.6			8.6				12.2
Peak Hour Factor	0.89	0.89	0.89	0.94	0.94	0.94	0.80	0.80	0.80	0.90	0.90	0.90
Adj. Flow (vph)	17	1024	1	13	1037	102	1	0	15	77	6	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	1025	0	13	1139	0	0	16	0	0	93	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.00	1.09	1.04	1.00	1.24	1.19	1.24	1.24	1.19	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases		2			6		3	3		4	4	



Lanes, Volumes, Timings  
 13: Orange Grove Ave & Monterey Rd

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2				6							
Detector Phase	2	2			6	6	3	3			4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0	5.0	5.0	5.0			5.0	5.0
Minimum Split (s)	24.0	24.0			24.0	24.0	31.5	31.5			31.5	31.5
Total Split (s)	26.0	26.0			26.0	26.0	32.0	32.0			32.0	32.0
Total Split (%)	28.9%	28.9%			28.9%	28.9%	35.6%	35.6%			35.6%	35.6%
Maximum Green (s)	21.0	21.0			21.0	21.0	27.5	27.5			27.5	27.5
Yellow Time (s)	4.0	4.0			4.0	4.0	3.5	3.5			3.5	3.5
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0			1.0	1.0
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0				0.0	
Total Lost Time (s)	5.0	5.0			5.0	5.0	4.5				4.5	
Lead/Lag							Lead	Lead			Lag	Lag
Lead-Lag Optimize?							Yes	Yes			Yes	Yes
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode	C-Min	C-Min			C-Min	C-Min	None	None			None	None
Walk Time (s)	7.0	7.0			7.0	7.0	7.0	7.0			7.0	7.0
Flash Dont Walk (s)	12.0	12.0			12.0	12.0	20.0	20.0			20.0	20.0
Pedestrian Calls (#/hr)	0	0			0	0	0	0			0	0
Act Effct Green (s)	69.1	69.1			69.1	69.1	5.5				10.4	
Actuated g/C Ratio	0.77	0.77			0.77	0.77	0.06				0.12	
v/c Ratio	0.06	0.39			0.04	0.44	0.10				0.51	
Control Delay	6.5	6.0			6.2	6.4	1.2				43.2	
Queue Delay	0.0	0.0			0.0	0.0	0.0				0.0	
Total Delay	6.5	6.0			6.2	6.4	1.2				43.2	
LOS	A	A			A	A	A				D	
Approach Delay	6.0				6.4		1.2				43.2	
Approach LOS	A				A		A				D	
Queue Length 50th (ft)	2	74			1	86	0				47	
Queue Length 95th (ft)	12	195			10	230	0				90	
Internal Link Dist (ft)	349				1131		236				366	
Turn Bay Length (ft)	75				75							
Base Capacity (vph)	293	2628			339	2596	486				473	
Starvation Cap Reductn	0	0			0	0	0				0	
Spillback Cap Reductn	0	0			0	0	0				0	
Storage Cap Reductn	0	0			0	0	0				0	
Reduced v/c Ratio	0.06	0.39			0.04	0.44	0.03				0.20	

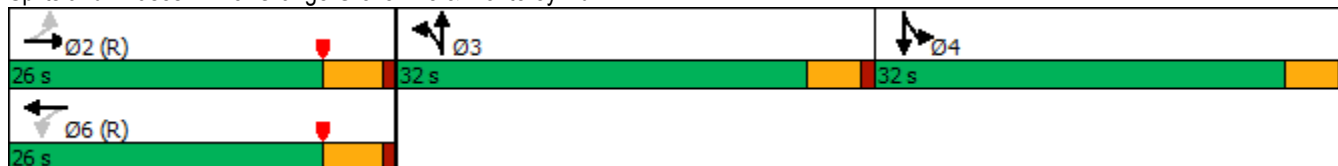
Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.51
Intersection Signal Delay:	7.7
Intersection LOS:	A
Intersection Capacity Utilization:	50.1%
ICU Level of Service:	A
Analysis Period (min):	15

Lanes, Volumes, Timings  
 13: Orange Grove Ave & Monterey Rd

12/28/2021

Splits and Phases: 13: Orange Grove Ave & Monterey Rd



Lanes, Volumes, Timings  
 16: Meridian Ave & Hope St

12/28/2021



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	10	70	116	13	52	149
Future Volume (vph)	10	70	116	13	52	149
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	13	12	12	13
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.882		0.986			
Flt Protected	0.994					0.987
Satd. Flow (prot)	1375	0	1598	0	0	1600
Flt Permitted	0.994					0.987
Satd. Flow (perm)	1375	0	1598	0	0	1600
Link Speed (mph)	25		25			25
Link Distance (ft)	299		340			399
Travel Time (s)	8.2		9.3			10.9
Peak Hour Factor	0.83	0.83	0.82	0.82	0.93	0.93
Adj. Flow (vph)	12	84	141	16	56	160
Shared Lane Traffic (%)						
Lane Group Flow (vph)	96	0	157	0	0	216
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.24	1.24	1.19	1.24	1.24	1.19
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	36.7%
	ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings  
17: Fremont Ave & Grevelia St

12/28/2021



Lane Group	EBL2	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR2
Lane Configurations												
Traffic Volume (vph)	5	10	23	1	6	10	6	765	8	3	675	7
Future Volume (vph)	5	10	23	1	6	10	6	765	8	3	675	7
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	12	12	12	12	12	12	14	12	12	14	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.918			0.920			0.999			0.999	
Flt Protected		0.994			0.998							
Satd. Flow (prot)	0	1431	0	0	1440	0	0	1672	0	0	1672	0
Flt Permitted		0.953			0.983			0.996			0.998	
Satd. Flow (perm)	0	1372	0	0	1419	0	0	1665	0	0	1668	0
Right Turn on Red									Yes			Yes
Satd. Flow (RTOR)								62			62	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		1201			446			255			617	
Travel Time (s)		32.8			12.2			5.8			14.0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.94	0.94	0.94	0.96	0.96	0.96
Adj. Flow (vph)	6	13	29	1	8	13	6	814	9	3	703	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	48	0	0	22	0	0	829	0	0	713	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.15	1.24	1.24	1.15	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												

Lanes, Volumes, Timings  
 17: Fremont Ave & Grevelia St

12/28/2021



Lane Group	NET	SWT
Lane Configurations	↑	↑
Traffic Volume (vph)	8	8
Future Volume (vph)	8	8
Ideal Flow (vphpl)	1600	1600
Lane Width (ft)	12	12
Lane Util. Factor	1.00	1.00
Frt		
Flt Protected		
Satd. Flow (prot)	1569	1569
Flt Permitted		
Satd. Flow (perm)	1569	1569
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)	30	30
Link Distance (ft)	309	405
Travel Time (s)	7.0	9.2
Peak Hour Factor	0.92	0.92
Adj. Flow (vph)	9	9
Shared Lane Traffic (%)		
Lane Group Flow (vph)	9	9
Enter Blocked Intersection	No	No
Lane Alignment	Left	Left
Median Width(ft)	0	0
Link Offset(ft)	0	0
Crosswalk Width(ft)	16	16
Two way Left Turn Lane		
Headway Factor	1.24	1.24
Turning Speed (mph)		
Number of Detectors	2	2
Detector Template	Thru	Thru
Leading Detector (ft)	100	100
Trailing Detector (ft)	0	0
Detector 1 Position(ft)	0	0
Detector 1 Size(ft)	6	6
Detector 1 Type	Cl+Ex	Cl+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(ft)	94	94
Detector 2 Size(ft)	6	6
Detector 2 Type	Cl+Ex	Cl+Ex
Detector 2 Channel		
Detector 2 Extend (s)	0.0	0.0
Turn Type	NA	NA
Protected Phases	9	9
Permitted Phases		
Detector Phase	9	9
Switch Phase		

Lanes, Volumes, Timings  
17: Fremont Ave & Grevelia St

12/28/2021



Lane Group	EBL2	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR2
Minimum Initial (s)	10.0	10.0		6.0	6.0		40.0	40.0		40.0	40.0	
Minimum Split (s)	20.0	20.0		11.0	11.0		45.0	45.0		45.0	45.0	
Total Split (s)	25.0	25.0		25.0	25.0		45.0	45.0		45.0	45.0	
Total Split (%)	21.7%	21.7%		21.7%	21.7%		39.1%	39.1%		39.1%	39.1%	
Maximum Green (s)	20.0	20.0		20.0	20.0		40.0	40.0		40.0	40.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.5	3.5		3.5	3.5		0.2	0.2		0.2	0.2	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0								7.0	7.0	
Flash Dont Walk (s)	8.0	8.0								8.0	8.0	
Pedestrian Calls (#/hr)	0	0								0	0	
Act Effct Green (s)		11.2			9.4			51.6			51.6	
Actuated g/C Ratio		0.16			0.13			0.74			0.74	
v/c Ratio		0.22			0.12			0.67			0.57	
Control Delay		33.3			32.7			16.4			14.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		33.3			32.7			16.4			14.6	
LOS		C			C			B			B	
Approach Delay		33.3			32.7			16.4			14.6	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)		15			7			144			107	
Queue Length 95th (ft)		60			34			#944			#761	
Internal Link Dist (ft)		1121			366			175			537	
Turn Bay Length (ft)												
Base Capacity (vph)		415			429			1246			1248	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.12			0.05			0.67			0.57	






Intersection Summary

Area Type: Other  
 Cycle Length: 115  
 Actuated Cycle Length: 69.8  
 Natural Cycle: 130  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.67  
 Intersection Signal Delay: 16.3      Intersection LOS: B  
 Intersection Capacity Utilization 107.6%      ICU Level of Service G  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Lanes, Volumes, Timings  
 17: Fremont Ave & Grevelia St

12/28/2021

Splits and Phases: 17: Fremont Ave & Grevelia St

 Ø2 45 s	 Ø4 25 s	 Ø9 45 s
 Ø6 45 s	 Ø8 25 s	

Lanes, Volumes, Timings  
 17: Fremont Ave & Grevelia St

12/28/2021





















Lane Group	NET	SWT
Minimum Initial (s)	40.5	40.5
Minimum Split (s)	45.0	45.0
Total Split (s)	45.0	45.0
Total Split (%)	39.1%	39.1%
Maximum Green (s)	40.5	40.5
Yellow Time (s)	3.5	3.5
All-Red Time (s)	1.0	1.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	4.5	4.5
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)	42.8	42.8
Actuated g/C Ratio	0.61	0.61
v/c Ratio	0.01	0.01
Control Delay	12.6	12.6
Queue Delay	0.0	0.0
Total Delay	12.6	12.6
LOS	B	B
Approach Delay	12.6	12.6
Approach LOS	B	B
Queue Length 50th (ft)	1	1
Queue Length 95th (ft)	15	15
Internal Link Dist (ft)	229	325
Turn Bay Length (ft)		
Base Capacity (vph)	961	961
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.01	0.01
<b>Intersection Summary</b>		



Lanes, Volumes, Timings  
18: Meridian Ave & Grevelia St

12/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	17	13	2	14	3	21	124	14	7	155	1
Future Volume (vph)	1	17	13	2	14	3	21	124	14	7	155	1
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	13	12	12	13	12	12	10	10	12	10	10
Storage Length (ft)	0		0	0		0	0		100	0		100
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.943			0.978				0.850			0.850
Flt Protected		0.999			0.994			0.993			0.998	
Satd. Flow (prot)	0	1527	0	0	1576	0	0	1454	1244	0	1461	1244
Flt Permitted		0.999			0.994			0.993			0.998	
Satd. Flow (perm)	0	1527	0	0	1576	0	0	1454	1244	0	1461	1244
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		441			1201			251			624	
Travel Time (s)		12.0			32.8			6.8			17.0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.93	0.93	0.93	0.83	0.83	0.83
Adj. Flow (vph)	1	21	16	3	18	4	23	133	15	8	187	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	38	0	0	25	0	0	156	15	0	195	1
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.19	1.24	1.24	1.19	1.24	1.24	1.35	1.35	1.24	1.35	1.35
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	32.6%						ICU Level of Service A					
Analysis Period (min)	15											

Lanes, Volumes, Timings  
 19: Diamond Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (vph)	0	515	33	23	411	6	16	1	25	0	0	0
Future Volume (vph)	0	515	33	23	411	6	16	1	25	0	0	0
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	12	11	12	12	11	12	10	12	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992			0.998			0.920				
Flt Protected					0.997			0.981				
Satd. Flow (prot)	0	1354	0	0	1335	0	0	1416	0	0	1569	0
Flt Permitted					0.997			0.981				
Satd. Flow (perm)	0	1354	0	0	1335	0	0	1416	0	0	1569	0
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		294			324			374			223	
Travel Time (s)		6.7			7.4			10.2			5.1	
Peak Hour Factor	0.96	0.96	0.96	0.95	0.95	0.95	0.80	0.80	0.80	0.25	0.25	0.25
Parking (#/hr)		0	0		3	3						
Adj. Flow (vph)	0	536	34	24	433	6	20	1	31	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	570	0	0	463	0	0	52	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.47	1.24	1.24	1.50	1.24	1.35	1.24	1.24	1.24	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	58.5%
ICU Level of Service	B
Analysis Period (min)	15

Lanes, Volumes, Timings  
20: Fairview Ave & Mission St

12/28/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	468	52	33	386	31	7	2	14	10	8	47
Future Volume (vph)	20	468	52	33	386	31	7	2	14	10	8	47
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Lane Width (ft)	11	13	12	11	14	12	12	12	12	12	12	12
Storage Length (ft)	50		0	50		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.985			0.989			0.915			0.902	
Fl <sub>t</sub> Protected	0.950			0.950				0.985			0.993	
Satd. Flow (prot)	1441	1381	0	1441	1407	0	0	1414	0	0	1405	0
Fl <sub>t</sub> Permitted	0.950			0.950				0.985			0.993	
Satd. Flow (perm)	1441	1381	0	1441	1407	0	0	1414	0	0	1405	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		324			613			381			228	
Travel Time (s)		7.4			13.9			10.4			6.2	
Peak Hour Factor	0.90	0.90	0.90	0.86	0.86	0.86	0.83	0.83	0.83	0.89	0.89	0.89
Parking (#/hr)		7	7		10	10						
Adj. Flow (vph)	22	520	58	38	449	36	8	2	17	11	9	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	578	0	38	485	0	0	27	0	0	73	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.30	1.43	1.24	1.30	1.40	1.24	1.24	1.24	1.24	1.24	1.24	1.24
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	44.8%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
21: Pasadena Ave & Mission St

12/28/2021



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	263	29	66	263	46	76
Future Volume (vph)	263	29	66	263	46	76
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Lane Width (ft)	13	13	12	12	11	14
Storage Length (ft)		0	0		100	100
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1621	1378	1490	1569	1441	2493
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1621	1378	1490	1569	1441	2493
Link Speed (mph)	30			30	30	
Link Distance (ft)	267			367	724	
Travel Time (s)	6.1			8.3	16.5	
Peak Hour Factor	0.80	0.80	0.89	0.89	0.91	0.91
Bus Blockages (#/hr)	0	0	0	0	0	2
Adj. Flow (vph)	329	36	74	296	51	84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	329	36	74	296	51	84
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane					Yes	
Headway Factor	1.19	1.19	1.24	1.24	1.30	1.15
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Free	Free	

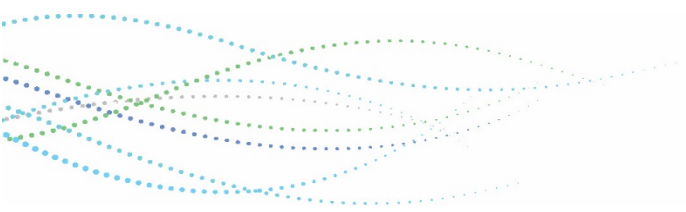
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	34.1%
ICU Level of Service	A
Analysis Period (min)	15



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## APPENDIX B: SIMTRAFFIC OUTPUT SHEETS EXISTING CONDITIONS - AM PEAK HOUR



Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	6:45	6:45	6:45	6:45	6:45	6:45	6:45
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	75	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	6947	7075	6970	7054	7047	7024	7149
Vehs Exited	6913	7080	7013	7096	7002	7038	7185
Starting Vehs	177	178	199	181	189	177	206
Ending Vehs	211	173	156	139	234	163	170
Travel Distance (mi)	2659	2679	2659	2704	2687	2689	2737
Travel Time (hr)	182.6	173.6	173.4	177.9	176.8	178.5	194.0
Total Delay (hr)	87.5	77.9	78.3	81.4	81.2	82.3	96.1
Total Stops	10777	10605	10547	10594	10530	10821	11339
Fuel Used (gal)	117.5	115.6	114.8	117.3	116.0	116.9	122.6

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	6:45	6:45	6:45	6:45
End Time	8:00	8:00	8:00	8:00
Total Time (min)	75	75	75	75
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	7031	7130	7113	7052
Vehs Exited	7037	7135	7092	7060
Starting Vehs	182	179	190	173
Ending Vehs	176	174	211	170
Travel Distance (mi)	2697	2715	2705	2693
Travel Time (hr)	185.4	214.5	191.0	184.8
Total Delay (hr)	89.1	117.7	94.3	88.6
Total Stops	10982	11415	11127	10875
Fuel Used (gal)	118.8	126.9	120.3	118.7

Interval #0 Information Seeding

Start Time	6:45
End Time	7:00
Total Time (min)	15
Volumes adjusted by PHF, Growth Factors.	
No data recorded this interval.	

**Interval #1 Information Recording**

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	6947	7075	6970	7054	7047	7024	7149
Vehs Exited	6913	7080	7013	7096	7002	7038	7185
Starting Vehs	177	178	199	181	189	177	206
Ending Vehs	211	173	156	139	234	163	170
Travel Distance (mi)	2659	2679	2659	2704	2687	2689	2737
Travel Time (hr)	182.6	173.6	173.4	177.9	176.8	178.5	194.0
Total Delay (hr)	87.5	77.9	78.3	81.4	81.2	82.3	96.1
Total Stops	10777	10605	10547	10594	10530	10821	11339
Fuel Used (gal)	117.5	115.6	114.8	117.3	116.0	116.9	122.6

**Interval #1 Information Recording**

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by PHF, Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	7031	7130	7113	7052
Vehs Exited	7037	7135	7092	7060
Starting Vehs	182	179	190	173
Ending Vehs	176	174	211	170
Travel Distance (mi)	2697	2715	2705	2693
Travel Time (hr)	185.4	214.5	191.0	184.8
Total Delay (hr)	89.1	117.7	94.3	88.6
Total Stops	10982	11415	11127	10875
Fuel Used (gal)	118.8	126.9	120.3	118.7

Intersection: 1: Fair Oaks Ave & Mission St

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	124	302	99	464	174	313	318	174	351	318
Average Queue (ft)	55	143	29	246	100	244	234	80	210	183
95th Queue (ft)	105	249	89	423	194	347	333	173	315	284
Link Distance (ft)	352	352		887		297	297		749	749
Upstream Blk Time (%)		0				3	2			
Queuing Penalty (veh)		0				20	11			
Storage Bay Dist (ft)			75		150			150		
Storage Blk Time (%)			0	49	1	21		0	17	
Queuing Penalty (veh)			2	17	7	21		1	15	

Intersection: 2: Fremont Ave & Mission St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	91	152	234	97	157	190	75	317	125	100	578	115
Average Queue (ft)	33	53	105	36	75	100	50	288	37	69	234	15
95th Queue (ft)	71	113	180	81	132	162	87	350	123	117	469	74
Link Distance (ft)		542	542		346	346		301			701	
Upstream Blk Time (%)								7			1	
Queuing Penalty (veh)								59			0	
Storage Bay Dist (ft)	75			75			50		100	75		100
Storage Blk Time (%)	1	2		3	8		15	39	0	16	26	0
Queuing Penalty (veh)	2	1		5	4		119	47	0	104	30	0

Intersection: 3: Meridian Ave & Mission St

Movement	EB	EB	WB	WB	NB	SB	NE	SW
Directions Served	<T	TR	<T	TR	LT>	LT>	T	T
Maximum Queue (ft)	170	194	179	194	229	156	32	31
Average Queue (ft)	56	85	63	84	107	65	5	6
95th Queue (ft)	123	158	137	161	192	129	22	23
Link Distance (ft)	316	316	205	205	292	259	294	264
Upstream Blk Time (%)			0	0	0			
Queuing Penalty (veh)			0	1	0			
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								



**Intersection: 4: Mission St & Orange Grove Ave**

Movement	EB	EB	EB	WB	WB	SB	SB	SB
Directions Served	L	T	T	T	TR	L	LR	R
Maximum Queue (ft)	68	153	106	104	149	124	258	123
Average Queue (ft)	61	97	46	40	59	25	115	13
95th Queue (ft)	72	159	97	82	114	85	198	74
Link Distance (ft)		104	104	526	526		389	
Upstream Blk Time (%)		10	0				0	
Queuing Penalty (veh)		28	1				0	
Storage Bay Dist (ft)	40					100		100
Storage Blk Time (%)	40	8				0	11	0
Queuing Penalty (veh)	65	28				0	21	0

**Intersection: 5: Fair Oaks Ave & El Centro St**

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	141	87	96	241	211	32	149	163
Average Queue (ft)	57	32	40	109	76	6	32	39
95th Queue (ft)	111	70	87	200	164	25	93	103
Link Distance (ft)	346	359		785	785		297	297
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			75			75		
Storage Blk Time (%)			1	10			1	
Queuing Penalty (veh)			6	8			0	

**Intersection: 6: Fremont Ave & El Centro St**

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	163	139	100	450	37	284
Average Queue (ft)	78	63	39	338	4	142
95th Queue (ft)	137	118	97	526	23	255
Link Distance (ft)	569	356		409		301
Upstream Blk Time (%)				29		0
Queuing Penalty (veh)				0		0
Storage Bay Dist (ft)			75		75	
Storage Blk Time (%)			1	39		12
Queuing Penalty (veh)			8	19		1

**Intersection: 7: Meridian Ave & El Centro St**

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	106	84	133	134
Average Queue (ft)	54	46	69	58
95th Queue (ft)	86	73	108	106
Link Distance (ft)	1116	251	420	292
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

**Intersection: 8: orange Grove Ave & El Centro St**

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	L	TR
Maximum Queue (ft)	91	78	53	54	42
Average Queue (ft)	40	42	23	24	14
95th Queue (ft)	68	67	41	44	31
Link Distance (ft)	376	1116	405	283	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					75
Storage Blk Time (%)				0	0
Queuing Penalty (veh)				0	0

**Intersection: 16: Meridian Ave & Hope St**

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	60	2	62
Average Queue (ft)	31	0	13
95th Queue (ft)	51	2	44
Link Distance (ft)	270	259	376
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 19: Diamond Ave & Mission St

Movement	WB	WB	NB
Directions Served	LT	TR	LTR
Maximum Queue (ft)	50	17	74
Average Queue (ft)	6	1	34
95th Queue (ft)	30	11	55
Link Distance (ft)	266	266	306
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: Fairview Ave & Mission St

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	41	8	50	8	42	62
Average Queue (ft)	3	0	7	0	19	29
95th Queue (ft)	21	4	31	6	42	54
Link Distance (ft)	266	266	542	542	305	184
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

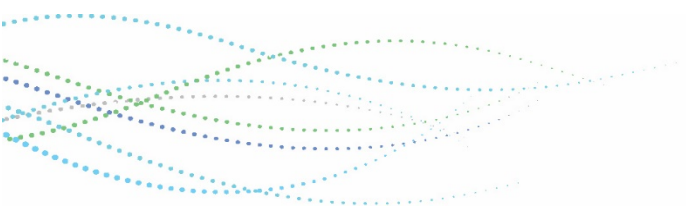
Zone Summary

Zone wide Queuing Penalty: 652



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## APPENDIX B: SIMTRAFFIC OUTPUT SHEETS EXISTING CONDITIONS - PM PEAK HOUR



Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	6:45	6:45	6:45	6:45	6:45	6:45	6:45
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	75	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	7311	7280	7305	7257	7278	7322	7387
Vehs Exited	7256	7292	7310	7261	7280	7333	7338
Starting Vehs	222	271	242	237	230	257	205
Ending Vehs	277	259	237	233	228	246	254
Travel Distance (mi)	2910	2902	2893	2854	2872	2887	2939
Travel Time (hr)	285.9	251.9	255.9	273.2	357.7	376.6	339.3
Total Delay (hr)	182.2	148.4	152.7	171.3	255.4	273.5	234.4
Total Stops	14056	13041	13233	13061	13719	13829	13938
Fuel Used (gal)	150.3	141.8	143.1	144.8	165.8	170.3	163.2

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	6:45	6:45	6:45	6:45
End Time	8:00	8:00	8:00	8:00
Total Time (min)	75	75	75	75
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	7355	7188	7327	7300
Vehs Exited	7309	7181	7331	7292
Starting Vehs	215	226	258	219
Ending Vehs	261	233	254	233
Travel Distance (mi)	2908	2833	2908	2890
Travel Time (hr)	287.3	419.3	413.0	326.0
Total Delay (hr)	183.8	318.4	309.4	223.0
Total Stops	14135	13132	13776	13593
Fuel Used (gal)	151.2	178.5	179.7	158.9

Interval #0 Information Seeding

Start Time	6:45
End Time	7:00
Total Time (min)	15
Volumes adjusted by PHF, Growth Factors.	
No data recorded this interval.	

**Interval #1 Information Recording**

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	7311	7280	7305	7257	7278	7322	7387
Vehs Exited	7256	7292	7310	7261	7280	7333	7338
Starting Vehs	222	271	242	237	230	257	205
Ending Vehs	277	259	237	233	228	246	254
Travel Distance (mi)	2910	2902	2893	2854	2872	2887	2939
Travel Time (hr)	285.9	251.9	255.9	273.2	357.7	376.6	339.3
Total Delay (hr)	182.2	148.4	152.7	171.3	255.4	273.5	234.4
Total Stops	14056	13041	13233	13061	13719	13829	13938
Fuel Used (gal)	150.3	141.8	143.1	144.8	165.8	170.3	163.2

**Interval #1 Information Recording**

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by PHF, Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	7355	7188	7327	7300
Vehs Exited	7309	7181	7331	7292
Starting Vehs	215	226	258	219
Ending Vehs	261	233	254	233
Travel Distance (mi)	2908	2833	2908	2890
Travel Time (hr)	287.3	419.3	413.0	326.0
Total Delay (hr)	183.8	318.4	309.4	223.0
Total Stops	14135	13132	13776	13593
Fuel Used (gal)	151.2	178.5	179.7	158.9

Intersection: 1: Fair Oaks Ave & Mission St

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	175	356	99	508	174	313	317	175	796	797
Average Queue (ft)	73	208	47	269	89	241	230	140	681	668
95th Queue (ft)	133	330	109	494	188	342	328	220	936	942
Link Distance (ft)	352	352		887		297	297		749	749
Upstream Blk Time (%)		1				3	2		40	40
Queuing Penalty (veh)		3				14	10		0	0
Storage Bay Dist (ft)			75		150			150		
Storage Blk Time (%)			1	52	0	23		4	52	
Queuing Penalty (veh)			6	24	2	19		30	73	

Intersection: 2: Fremont Ave & Mission St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	96	247	312	98	150	185	75	319	125	100	736	125
Average Queue (ft)	34	95	168	43	72	93	57	245	26	84	468	37
95th Queue (ft)	82	196	276	88	126	155	90	366	98	122	849	120
Link Distance (ft)		542	542		346	346		301			701	
Upstream Blk Time (%)								6			23	
Queuing Penalty (veh)								52			0	
Storage Bay Dist (ft)	75			75			50		100	75		100
Storage Blk Time (%)	1	8		10	6		27	40	0	31	33	0
Queuing Penalty (veh)	2	3		16	3		214	56	0	215	53	0

Intersection: 3: Meridian Ave & Mission St

Movement	EB	EB	WB	WB	NB	SB	NE	SW
Directions Served	T	TR	<T	TR	LT>	LT>	T	T
Maximum Queue (ft)	216	243	164	196	204	180	34	31
Average Queue (ft)	79	112	69	97	95	82	6	5
95th Queue (ft)	168	202	141	173	171	151	23	22
Link Distance (ft)	316	316	205	205	292	259	294	264
Upstream Blk Time (%)		0	0	0				
Queuing Penalty (veh)		0	0	0				
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

**Intersection: 4: Mission St & Orange Grove Ave**

Movement	EB	EB	EB	WB	WB	SB	SB	SB
Directions Served	L	T	T	T	TR	L	LR	R
Maximum Queue (ft)	67	150	107	130	166	114	257	114
Average Queue (ft)	59	81	50	44	71	16	116	16
95th Queue (ft)	72	151	97	99	136	69	206	81
Link Distance (ft)		104	104	526	526		389	
Upstream Blk Time (%)		6	0				0	
Queuing Penalty (veh)		19	1				0	
Storage Bay Dist (ft)	40					100		100
Storage Blk Time (%)	32	8					11	0
Queuing Penalty (veh)	66	21					22	0

**Intersection: 5: Fair Oaks Ave & El Centro St**

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	253	140	99	248	204	82	318	325
Average Queue (ft)	119	59	40	128	91	16	221	229
95th Queue (ft)	214	113	87	220	180	54	375	381
Link Distance (ft)	346	359		785	785		297	297
Upstream Blk Time (%)	0						4	4
Queuing Penalty (veh)	0						27	32
Storage Bay Dist (ft)			75			75		
Storage Blk Time (%)			1	15			19	
Queuing Penalty (veh)			4	9			4	

**Intersection: 6: Fremont Ave & El Centro St**

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	193	170	100	461	90	289
Average Queue (ft)	86	75	29	423	26	174
95th Queue (ft)	156	134	89	491	74	271
Link Distance (ft)	569	356		409		301
Upstream Blk Time (%)				69		0
Queuing Penalty (veh)				0		1
Storage Bay Dist (ft)			75		75	
Storage Blk Time (%)			0	53	1	25
Queuing Penalty (veh)			1	14	9	6



**Intersection: 7: Meridian Ave & El Centro St**

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	87	91	103	121
Average Queue (ft)	48	43	55	54
95th Queue (ft)	74	70	87	96
Link Distance (ft)	1116	251	420	292
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

**Intersection: 8: orange Grove Ave & El Centro St**

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	L	TR
Maximum Queue (ft)	70	70	54	44	42
Average Queue (ft)	39	37	21	17	12
95th Queue (ft)	62	58	40	34	27
Link Distance (ft)	376	1116	405	283	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					75
Storage Blk Time (%)					
Queuing Penalty (veh)					

**Intersection: 16: Meridian Ave & Hope St**

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	58	41
Average Queue (ft)	33	7
95th Queue (ft)	52	30
Link Distance (ft)	270	376
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 19: Diamond Ave & Mission St

Movement	EB	WB	WB	NB
Directions Served	TR	LT	TR	LTR
Maximum Queue (ft)	6	48	6	63
Average Queue (ft)	0	8	0	28
95th Queue (ft)	4	33	5	54
Link Distance (ft)	205	266	266	306
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 20: Fairview Ave & Mission St

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	47	8	70	2	37	73
Average Queue (ft)	7	0	15	0	17	32
95th Queue (ft)	30	5	48	2	40	57
Link Distance (ft)	266	266	542	542	305	184
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

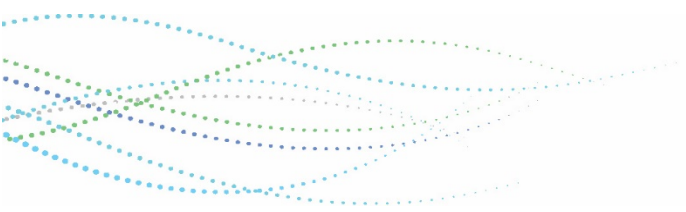
Zone Summary

Zone wide Queuing Penalty: 1032
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## APPENDIX B: SIMTRAFFIC OUTPUT SHEETS SCENARIO 3 - AM PEAK HOUR



Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	6:45	6:45	6:45	6:45	6:45	6:45	6:45
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	75	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	7077	6943	6910	6956	6955	7011	7046
Vehs Exited	7013	6946	6867	6951	6973	7008	7025
Starting Vehs	153	158	149	166	186	207	167
Ending Vehs	217	155	192	171	168	210	188
Travel Distance (mi)	2448	2423	2391	2424	2386	2463	2469
Travel Time (hr)	194.1	180.7	193.2	180.0	168.4	196.7	178.1
Total Delay (hr)	106.5	93.9	107.5	93.2	82.8	108.4	89.3
Total Stops	11152	10738	10678	10647	10228	11142	10821
Fuel Used (gal)	116.0	112.0	113.4	112.3	108.1	116.5	112.6

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	6:45	6:45	6:45	6:45
End Time	8:00	8:00	8:00	8:00
Total Time (min)	75	75	75	75
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	6873	7063	6987	6983
Vehs Exited	6856	7053	7021	6969
Starting Vehs	206	164	186	163
Ending Vehs	223	174	152	174
Travel Distance (mi)	2398	2447	2430	2428
Travel Time (hr)	272.5	183.1	192.5	193.9
Total Delay (hr)	186.4	95.6	105.5	106.9
Total Stops	11774	10518	10649	10830
Fuel Used (gal)	130.7	113.0	114.9	115.0

Interval #0 Information Seeding

Start Time	6:45
End Time	7:00
Total Time (min)	15
Volumes adjusted by PHF, Growth Factors.	
No data recorded this interval.	

**Interval #1 Information Recording**

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	7077	6943	6910	6956	6955	7011	7046
Vehs Exited	7013	6946	6867	6951	6973	7008	7025
Starting Vehs	153	158	149	166	186	207	167
Ending Vehs	217	155	192	171	168	210	188
Travel Distance (mi)	2448	2423	2391	2424	2386	2463	2469
Travel Time (hr)	194.1	180.7	193.2	180.0	168.4	196.7	178.1
Total Delay (hr)	106.5	93.9	107.5	93.2	82.8	108.4	89.3
Total Stops	11152	10738	10678	10647	10228	11142	10821
Fuel Used (gal)	116.0	112.0	113.4	112.3	108.1	116.5	112.6

**Interval #1 Information Recording**

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by PHF, Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	6873	7063	6987	6983
Vehs Exited	6856	7053	7021	6969
Starting Vehs	206	164	186	163
Ending Vehs	223	174	152	174
Travel Distance (mi)	2398	2447	2430	2428
Travel Time (hr)	272.5	183.1	192.5	193.9
Total Delay (hr)	186.4	95.6	105.5	106.9
Total Stops	11774	10518	10649	10830
Fuel Used (gal)	130.7	113.0	114.9	115.0

**Intersection: 1: Fair Oaks Ave & Mission St**

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	118	247	100	441	174	307	308	174	382	329
Average Queue (ft)	52	130	27	221	92	250	232	93	219	186
95th Queue (ft)	97	215	83	377	187	345	330	183	328	290
Link Distance (ft)	353	353		835		288	288		685	685
Upstream Blk Time (%)						5	2			
Queuing Penalty (veh)						30	14			
Storage Bay Dist (ft)			75		150			150		
Storage Blk Time (%)			0	45	1	25		1	19	
Queuing Penalty (veh)			1	15	4	24		2	16	

**Intersection: 2: Fremont Ave & Mission St**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	120	526	75	224	354	75	215	318	125	189	461	103
Average Queue (ft)	73	248	63	72	226	58	140	283	37	91	192	17
95th Queue (ft)	139	521	97	194	367	101	268	334	122	179	371	75
Link Distance (ft)		543			346			301			699	
Upstream Blk Time (%)		6			3			4			0	
Queuing Penalty (veh)		23			12			40			0	
Storage Bay Dist (ft)	95		50	200		50	190		100	165		100
Storage Blk Time (%)	21	48	9	0	60	9	0	39	0	2	19	0
Queuing Penalty (veh)	83	77	30	1	76	34	1	56	0	14	25	0

**Intersection: 3: Mission St & Meridian Ave**

Movement	EB	WB	WB	SB	NE	SW
Directions Served	<LT	T	R	LR>	T	T
Maximum Queue (ft)	296	210	90	118	20	36
Average Queue (ft)	123	82	23	37	2	7
95th Queue (ft)	280	186	74	86	11	27
Link Distance (ft)	323	201		247	305	264
Upstream Blk Time (%)	4	1				
Queuing Penalty (veh)	15	5				
Storage Bay Dist (ft)			65			
Storage Blk Time (%)		11	0			
Queuing Penalty (veh)		7	2			

**Intersection: 4: Mission St & Orange Grove Ave**

Movement	EB	EB	WB	SB	SB	SB
Directions Served	L	T	TR	L	R	R
Maximum Queue (ft)	122	111	199	111	79	88
Average Queue (ft)	95	61	82	56	31	43
95th Queue (ft)	132	105	151	99	62	73
Link Distance (ft)	101	101	532		392	392
Upstream Blk Time (%)	13	2				
Queuing Penalty (veh)	40	5				
Storage Bay Dist (ft)				100		
Storage Blk Time (%)				1	0	
Queuing Penalty (veh)				1	0	

**Intersection: 5: Fair Oaks Ave & El Centro St**

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	142	89	100	312	235	32	124	125
Average Queue (ft)	59	30	43	127	73	7	28	35
95th Queue (ft)	116	69	92	246	174	27	81	85
Link Distance (ft)	346	359		357	357		288	288
Upstream Blk Time (%)				0	0			
Queuing Penalty (veh)				0	0			
Storage Bay Dist (ft)			75			75		
Storage Blk Time (%)			1	12			1	
Queuing Penalty (veh)			7	10			0	

**Intersection: 6: Fremont Ave & El Centro St**

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	158	140	99	460	46	273
Average Queue (ft)	77	66	25	381	5	111
95th Queue (ft)	135	118	76	534	26	216
Link Distance (ft)	569	356		409		301
Upstream Blk Time (%)				37		0
Queuing Penalty (veh)				0		0
Storage Bay Dist (ft)			75		75	
Storage Blk Time (%)			0	40		8
Queuing Penalty (veh)			2	11		0

**Intersection: 7: Meridian Ave & El Centro St**

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	86	80	75
Average Queue (ft)	52	41	37
95th Queue (ft)	75	65	61
Link Distance (ft)	1110	258	420
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

**Intersection: 8: orange Grove Ave & El Centro St**

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	L	TR
Maximum Queue (ft)	100	138	69	66	65
Average Queue (ft)	43	49	29	30	19
95th Queue (ft)	80	112	54	53	43
Link Distance (ft)	376	1110	405	283	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					75
Storage Blk Time (%)				0	0
Queuing Penalty (veh)				0	0

**Intersection: 16: Meridian Ave & Hope St**

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	54	47
Average Queue (ft)	29	7
95th Queue (ft)	49	30
Link Distance (ft)	270	376
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		



Intersection: 19: Diamond Ave & Mission St

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	27	102	111
Average Queue (ft)	21	16	56
95th Queue (ft)	130	63	167
Link Distance (ft)	201	266	317
Upstream Blk Time (%)	4		4
Queuing Penalty (veh)	18		3
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: Fairview Ave & Mission St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	125	97	46	82
Average Queue (ft)	36	19	19	40
95th Queue (ft)	169	66	44	107
Link Distance (ft)	266	543	316	195
Upstream Blk Time (%)	4			4
Queuing Penalty (veh)	19			0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

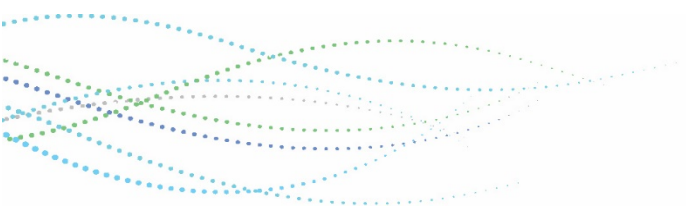
Zone Summary

Zone wide Queuing Penalty: 727



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## APPENDIX B: SIMTRAFFIC OUTPUT SHEETS SCENARIO 3- PM PEAK HOUR



Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	6:45	6:45	6:45	6:45	6:45	6:45	6:45
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	75	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	7396	7357	7359	7437	7329	7350	7365
Vehs Exited	7356	7282	7220	7245	7311	7244	7272
Starting Vehs	237	199	248	225	271	210	214
Ending Vehs	277	274	387	417	289	316	307
Travel Distance (mi)	2625	2628	2567	2633	2626	2587	2608
Travel Time (hr)	265.8	295.5	385.5	388.5	360.9	396.3	389.5
Total Delay (hr)	171.7	201.4	293.7	294.2	266.9	303.7	296.0
Total Stops	13521	13902	14319	15238	14217	14941	14015
Fuel Used (gal)	137.8	144.6	164.6	166.5	160.0	166.5	167.0

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	6:45	6:45	6:45	6:45
End Time	8:00	8:00	8:00	8:00
Total Time (min)	75	75	75	75
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	7204	7408	7351	7354
Vehs Exited	7105	7377	7254	7262
Starting Vehs	214	238	201	213
Ending Vehs	313	269	298	307
Travel Distance (mi)	2568	2612	2600	2605
Travel Time (hr)	373.5	278.9	315.1	344.9
Total Delay (hr)	281.9	185.5	222.1	251.7
Total Stops	15095	13776	14211	14325
Fuel Used (gal)	160.7	141.3	148.6	155.8

Interval #0 Information Seeding

Start Time	6:45
End Time	7:00
Total Time (min)	15
Volumes adjusted by PHF, Growth Factors.	
No data recorded this interval.	

**Interval #1 Information Recording**

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	7396	7357	7359	7437	7329	7350	7365
Vehs Exited	7356	7282	7220	7245	7311	7244	7272
Starting Vehs	237	199	248	225	271	210	214
Ending Vehs	277	274	387	417	289	316	307
Travel Distance (mi)	2625	2628	2567	2633	2626	2587	2608
Travel Time (hr)	265.8	295.5	385.5	388.5	360.9	396.3	389.5
Total Delay (hr)	171.7	201.4	293.7	294.2	266.9	303.7	296.0
Total Stops	13521	13902	14319	15238	14217	14941	14015
Fuel Used (gal)	137.8	144.6	164.6	166.5	160.0	166.5	167.0

**Interval #1 Information Recording**

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by PHF, Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	7204	7408	7351	7354
Vehs Exited	7105	7377	7254	7262
Starting Vehs	214	238	201	213
Ending Vehs	313	269	298	307
Travel Distance (mi)	2568	2612	2600	2605
Travel Time (hr)	373.5	278.9	315.1	344.9
Total Delay (hr)	281.9	185.5	222.1	251.7
Total Stops	15095	13776	14211	14325
Fuel Used (gal)	160.7	141.3	148.6	155.8

**Intersection: 1: Fair Oaks Ave & Mission St**

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	144	308	100	689	175	309	304	175	735	730
Average Queue (ft)	69	186	43	384	95	249	228	141	645	632
95th Queue (ft)	120	282	107	767	199	343	324	214	850	853
Link Distance (ft)	353	353		835		288	288		685	685
Upstream Blk Time (%)		0		8		6	2		41	41
Queuing Penalty (veh)		1		0		33	10		0	0
Storage Bay Dist (ft)			75		150			150		
Storage Blk Time (%)			1	61	3	23		7	51	
Queuing Penalty (veh)			3	29	15	19		48	72	

**Intersection: 2: Fremont Ave & Mission St**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	120	562	76	225	362	76	214	317	125	190	710	125
Average Queue (ft)	73	501	67	128	262	55	126	192	17	147	403	37
95th Queue (ft)	148	673	99	264	415	103	234	333	75	237	800	118
Link Distance (ft)		543			346			301				699
Upstream Blk Time (%)		24			12			3				20
Queuing Penalty (veh)		136			58			33				0
Storage Bay Dist (ft)	95		50	200		50	190		100	165		100
Storage Blk Time (%)	8	68	16	10	59	7	11	20	0	26	28	0
Queuing Penalty (veh)	40	133	65	44	74	25	88	32	0	186	47	0

**Intersection: 3: Mission St & Meridian Ave**

Movement	EB	WB	WB	SB	NE	SW
Directions Served	<LT	T	R	LR>	T	T
Maximum Queue (ft)	334	208	90	148	19	31
Average Queue (ft)	192	103	24	53	3	6
95th Queue (ft)	382	208	77	116	12	25
Link Distance (ft)	323	201		247	305	264
Upstream Blk Time (%)	10	2		0		
Queuing Penalty (veh)	54	7		0		
Storage Bay Dist (ft)			65			
Storage Blk Time (%)		15	0			
Queuing Penalty (veh)		7	0			

**Intersection: 4: Mission St & Orange Grove Ave**

Movement	EB	EB	WB	SB	SB	SB
Directions Served	L	T	TR	L	R	R
Maximum Queue (ft)	120	120	229	111	81	121
Average Queue (ft)	85	72	106	56	17	58
95th Queue (ft)	128	120	196	100	57	95
Link Distance (ft)	101	101	532		392	392
Upstream Blk Time (%)	11	4				
Queuing Penalty (veh)	31	13				
Storage Bay Dist (ft)				100		
Storage Blk Time (%)				1		
Queuing Penalty (veh)				2		

**Intersection: 5: Fair Oaks Ave & El Centro St**

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	258	146	100	316	256	84	314	321
Average Queue (ft)	118	57	38	145	95	15	202	211
95th Queue (ft)	214	112	87	269	210	53	363	365
Link Distance (ft)	346	359		357	357		288	288
Upstream Blk Time (%)	0			1	0		3	4
Queuing Penalty (veh)	0			0	0		25	29
Storage Bay Dist (ft)			75			75		
Storage Blk Time (%)			1	18		0	16	
Queuing Penalty (veh)			5	12		0	3	

**Intersection: 6: Fremont Ave & El Centro St**

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	180	174	45	459	100	298
Average Queue (ft)	87	72	3	413	28	191
95th Queue (ft)	150	128	23	514	78	283
Link Distance (ft)	569	356		409		301
Upstream Blk Time (%)				56		1
Queuing Penalty (veh)				0		6
Storage Bay Dist (ft)			75		75	
Storage Blk Time (%)				46	2	28
Queuing Penalty (veh)				2	19	7

**Intersection: 7: Meridian Ave & El Centro St**

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	81	70	65
Average Queue (ft)	50	38	36
95th Queue (ft)	72	57	57
Link Distance (ft)	1110	258	420
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

**Intersection: 8: orange Grove Ave & El Centro St**

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	L	TR
Maximum Queue (ft)	91	77	75	53	61
Average Queue (ft)	46	39	29	18	18
95th Queue (ft)	75	64	55	38	40
Link Distance (ft)	376	1110	405	283	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					75
Storage Blk Time (%)				0	0
Queuing Penalty (veh)				0	0

**Intersection: 16: Meridian Ave & Hope St**

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	61	26
Average Queue (ft)	34	2
95th Queue (ft)	52	16
Link Distance (ft)	270	376
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 19: Diamond Ave & Mission St

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	219	160	180
Average Queue (ft)	92	27	63
95th Queue (ft)	270	92	181
Link Distance (ft)	201	266	317
Upstream Blk Time (%)	14	0	3
Queuing Penalty (veh)	81	0	1
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: Fairview Ave & Mission St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	281	189	102	151
Average Queue (ft)	170	33	34	54
95th Queue (ft)	359	113	102	135
Link Distance (ft)	266	543	316	195
Upstream Blk Time (%)	13			5
Queuing Penalty (veh)	76			0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

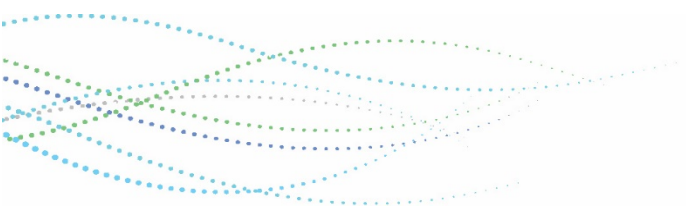
Zone wide Queuing Penalty: 1569





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## APPENDIX B: SIMTRAFFIC OUTPUT SHEETS SCENARIO 4 - AM PEAK HOUR



Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	6:45	6:45	6:45	6:45	6:45	6:45	6:45
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	75	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	7021	7084	7027	6988	7014	7135	7189
Vehs Exited	7011	6997	7055	7000	7025	6937	7188
Starting Vehs	191	184	173	209	181	184	199
Ending Vehs	201	271	145	197	170	382	200
Travel Distance (mi)	2576	2591	2586	2581	2583	2580	2660
Travel Time (hr)	250.3	224.3	231.5	215.4	220.3	257.8	227.7
Total Delay (hr)	158.1	131.4	139.0	122.8	127.7	165.5	132.2
Total Stops	11317	11771	11036	11268	11206	11624	11845
Fuel Used (gal)	131.3	125.6	127.2	123.5	124.6	132.4	128.8

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	6:45	6:45	6:45	6:45
End Time	8:00	8:00	8:00	8:00
Total Time (min)	75	75	75	75
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	7165	7048	7046	7072
Vehs Exited	7099	6995	7054	7037
Starting Vehs	162	174	201	175
Ending Vehs	228	227	193	213
Travel Distance (mi)	2611	2586	2596	2595
Travel Time (hr)	207.2	240.2	188.9	226.4
Total Delay (hr)	113.7	147.5	95.8	133.4
Total Stops	11472	11609	10984	11408
Fuel Used (gal)	122.2	129.1	117.1	126.2

Interval #0 Information Seeding

Start Time	6:45
End Time	7:00
Total Time (min)	15
Volumes adjusted by PHF, Growth Factors.	
No data recorded this interval.	

**Interval #1 Information Recording**

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	7021	7084	7027	6988	7014	7135	7189
Vehs Exited	7011	6997	7055	7000	7025	6937	7188
Starting Vehs	191	184	173	209	181	184	199
Ending Vehs	201	271	145	197	170	382	200
Travel Distance (mi)	2576	2591	2586	2581	2583	2580	2660
Travel Time (hr)	250.3	224.3	231.5	215.4	220.3	257.8	227.7
Total Delay (hr)	158.1	131.4	139.0	122.8	127.7	165.5	132.2
Total Stops	11317	11771	11036	11268	11206	11624	11845
Fuel Used (gal)	131.3	125.6	127.2	123.5	124.6	132.4	128.8

**Interval #1 Information Recording**

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by PHF, Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	7165	7048	7046	7072
Vehs Exited	7099	6995	7054	7037
Starting Vehs	162	174	201	175
Ending Vehs	228	227	193	213
Travel Distance (mi)	2611	2586	2596	2595
Travel Time (hr)	207.2	240.2	188.9	226.4
Total Delay (hr)	113.7	147.5	95.8	133.4
Total Stops	11472	11609	10984	11408
Fuel Used (gal)	122.2	129.1	117.1	126.2

**Intersection: 1: Fair Oaks Ave & Mission St**

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	108	243	99	434	174	315	320	174	354	334
Average Queue (ft)	48	129	31	235	108	243	229	91	217	190
95th Queue (ft)	91	216	90	387	203	350	339	184	325	296
Link Distance (ft)	352	352		848		298	298		691	691
Upstream Blk Time (%)						3	2			
Queuing Penalty (veh)						17	11			
Storage Bay Dist (ft)			75		150			150		
Storage Blk Time (%)			0	46	1	22		1	19	
Queuing Penalty (veh)			1	16	4	22		3	16	

**Intersection: 2: Fremont Ave & Mission St**

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	L	T	R
Maximum Queue (ft)	149	466	158	357	75	320	125	100	576	125
Average Queue (ft)	94	234	47	229	55	304	39	70	264	17
95th Queue (ft)	180	469	113	358	91	330	123	116	521	79
Link Distance (ft)		542	346	346		302			701	
Upstream Blk Time (%)		6	0	3		12			1	
Queuing Penalty (veh)		23	0	5		110			0	
Storage Bay Dist (ft)	125				50		100	75		100
Storage Blk Time (%)	19	27			19	44	0	15	31	0
Queuing Penalty (veh)	73	14			156	53	0	98	35	0

**Intersection: 3: Meridian Ave & Mission St**

Movement	EB	WB	WB	NB	SB	NE	SW
Directions Served	<TR	<T	R	LT>	LT>	T	T
Maximum Queue (ft)	322	214	69	248	172	33	30
Average Queue (ft)	164	122	20	116	67	6	6
95th Queue (ft)	302	222	52	218	135	26	23
Link Distance (ft)	314	202	202	288	258	306	262
Upstream Blk Time (%)	3	3		1			
Queuing Penalty (veh)	13	7		2			
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

**Intersection: 4: Mission St & Orange Grove Ave**

Movement	EB	EB	EB	WB	WB	SB	SB	SB
Directions Served	L	T	T	T	TR	L	LR	R
Maximum Queue (ft)	69	152	116	104	140	122	260	116
Average Queue (ft)	61	82	61	43	57	14	129	14
95th Queue (ft)	70	162	108	86	108	75	231	77
Link Distance (ft)		104	104	527	527		389	
Upstream Blk Time (%)		10	2				1	
Queuing Penalty (veh)		28	6				0	
Storage Bay Dist (ft)	40					100		100
Storage Blk Time (%)	40	6				0	15	0
Queuing Penalty (veh)	66	19				0	29	0

**Intersection: 5: Fair Oaks Ave & El Centro St**

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	133	88	97	254	202	32	142	147
Average Queue (ft)	58	32	39	111	74	5	32	38
95th Queue (ft)	111	71	82	202	160	24	93	97
Link Distance (ft)	346	359		668	668		298	298
Upstream Blk Time (%)							0	
Queuing Penalty (veh)							0	
Storage Bay Dist (ft)			75			75		
Storage Blk Time (%)			1	10			1	
Queuing Penalty (veh)			4	8			0	

**Intersection: 6: Fremont Ave & El Centro St**

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	201	150	100	458	61	252
Average Queue (ft)	88	67	43	415	6	117
95th Queue (ft)	167	122	108	512	32	216
Link Distance (ft)	569	356		409		302
Upstream Blk Time (%)				63		0
Queuing Penalty (veh)				0		0
Storage Bay Dist (ft)			75		75	
Storage Blk Time (%)			1	49	0	9
Queuing Penalty (veh)			9	24	0	0

**Intersection: 7: Meridian Ave & El Centro St**

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	115	96	169	133
Average Queue (ft)	56	45	74	57
95th Queue (ft)	90	74	154	103
Link Distance (ft)	1116	251	420	288
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

**Intersection: 8: orange Grove Ave & El Centro St**

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	L	TR
Maximum Queue (ft)	86	132	71	57	52
Average Queue (ft)	41	45	23	24	15
95th Queue (ft)	68	106	51	43	33
Link Distance (ft)	376	1116	405	283	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					75
Storage Blk Time (%)				0	0
Queuing Penalty (veh)				0	0

**Intersection: 16: Meridian Ave & Hope St**

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	55	51
Average Queue (ft)	31	13
95th Queue (ft)	51	41
Link Distance (ft)	270	376
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 19: Diamond Ave & Mission St

Movement	EB	WB	NB
Directions Served	TR	LTR	LTR
Maximum Queue (ft)	74	161	125
Average Queue (ft)	12	22	45
95th Queue (ft)	93	95	101
Link Distance (ft)	202	266	310
Upstream Blk Time (%)	2	0	
Queuing Penalty (veh)	8	0	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: Fairview Ave & Mission St

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	38	116	34	12	57	71
Average Queue (ft)	5	22	7	0	21	29
95th Queue (ft)	23	136	28	12	57	61
Link Distance (ft)		266		542	313	191
Upstream Blk Time (%)		3				
Queuing Penalty (veh)		15				
Storage Bay Dist (ft)	50		50			
Storage Blk Time (%)		7	0	0		
Queuing Penalty (veh)		1	0	0		

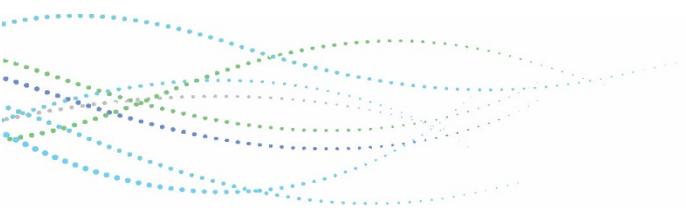
Zone Summary

Zone wide Queuing Penalty: 898



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## APPENDIX B: SIMTRAFFIC OUTPUT SHEETS SCENARIO 4 - PM PEAK HOUR





Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	6:45	6:45	6:45	6:45	6:45	6:45	6:45
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	75	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	7224	7153	7224	7178	7142	7156	7313
Vehs Exited	7129	7147	7117	7189	7125	7112	7283
Starting Vehs	230	224	240	234	262	238	261
Ending Vehs	325	230	347	223	279	282	291
Travel Distance (mi)	2755	2748	2732	2750	2719	2698	2822
Travel Time (hr)	371.0	337.6	434.8	374.3	348.1	361.1	503.8
Total Delay (hr)	272.6	239.2	337.5	276.2	250.8	264.5	402.8
Total Stops	13840	13024	14150	13666	12991	12754	15017
Fuel Used (gal)	165.8	157.0	179.1	166.3	158.1	161.0	197.3

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	6:45	6:45	6:45	6:45
End Time	8:00	8:00	8:00	8:00
Total Time (min)	75	75	75	75
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	7181	7212	7197	7196
Vehs Exited	7090	7109	7131	7144
Starting Vehs	233	224	228	227
Ending Vehs	324	327	294	286
Travel Distance (mi)	2765	2759	2727	2747
Travel Time (hr)	373.9	419.1	378.3	390.2
Total Delay (hr)	275.1	320.5	280.7	292.0
Total Stops	13687	14428	14027	13760
Fuel Used (gal)	165.3	176.7	166.1	169.3

Interval #0 Information Seeding

Start Time	6:45
End Time	7:00
Total Time (min)	15
Volumes adjusted by PHF, Growth Factors.	
No data recorded this interval.	

**Interval #1 Information Recording**

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	7224	7153	7224	7178	7142	7156	7313
Vehs Exited	7129	7147	7117	7189	7125	7112	7283
Starting Vehs	230	224	240	234	262	238	261
Ending Vehs	325	230	347	223	279	282	291
Travel Distance (mi)	2755	2748	2732	2750	2719	2698	2822
Travel Time (hr)	371.0	337.6	434.8	374.3	348.1	361.1	503.8
Total Delay (hr)	272.6	239.2	337.5	276.2	250.8	264.5	402.8
Total Stops	13840	13024	14150	13666	12991	12754	15017
Fuel Used (gal)	165.8	157.0	179.1	166.3	158.1	161.0	197.3

**Interval #1 Information Recording**

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by PHF, Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	7181	7212	7197	7196
Vehs Exited	7090	7109	7131	7144
Starting Vehs	233	224	228	227
Ending Vehs	324	327	294	286
Travel Distance (mi)	2765	2759	2727	2747
Travel Time (hr)	373.9	419.1	378.3	390.2
Total Delay (hr)	275.1	320.5	280.7	292.0
Total Stops	13687	14428	14027	13760
Fuel Used (gal)	165.3	176.7	166.1	169.3

**Intersection: 1: Fair Oaks Ave & Mission St**

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	154	321	99	612	174	313	315	175	729	725
Average Queue (ft)	68	202	46	312	98	236	224	136	565	544
95th Queue (ft)	125	303	110	621	197	344	327	217	848	843
Link Distance (ft)	352	352		848		298	298		691	691
Upstream Blk Time (%)		0		3		3	2		26	24
Queuing Penalty (veh)		0		0		17	9		0	0
Storage Bay Dist (ft)			75		150			150		
Storage Blk Time (%)			1	55	2	21		7	47	
Queuing Penalty (veh)			4	26	12	17		44	67	

**Intersection: 2: Fremont Ave & Mission St**

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	L	T	R
Maximum Queue (ft)	150	557	290	349	75	320	125	100	746	125
Average Queue (ft)	85	427	173	204	60	276	29	87	535	38
95th Queue (ft)	187	650	356	347	91	369	105	122	907	121
Link Distance (ft)		542	346	346		302			701	
Upstream Blk Time (%)		12	13	5		8			43	
Queuing Penalty (veh)		67	32	12		75			0	
Storage Bay Dist (ft)	125				50		100	75		100
Storage Blk Time (%)	3	64			32	46	0	35	40	0
Queuing Penalty (veh)	13	27			258	64	0	238	63	0

**Intersection: 3: Meridian Ave & Mission St**

Movement	EB	WB	WB	NB	SB	NE	SW
Directions Served	TR	<T	R	LT>	LT>	T	T
Maximum Queue (ft)	330	217	60	192	182	37	24
Average Queue (ft)	214	145	14	85	86	7	5
95th Queue (ft)	364	250	44	157	156	27	20
Link Distance (ft)	314	202	202	288	258	306	262
Upstream Blk Time (%)	6	9					
Queuing Penalty (veh)	33	20					
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

**Intersection: 4: Mission St & Orange Grove Ave**

Movement	EB	EB	EB	WB	WB	SB	SB	SB
Directions Served	L	T	T	T	TR	L	LR	R
Maximum Queue (ft)	68	136	126	126	158	105	235	115
Average Queue (ft)	57	58	70	45	67	10	122	14
95th Queue (ft)	72	138	118	95	125	62	203	74
Link Distance (ft)		104	104	527	527		389	
Upstream Blk Time (%)		4	1					
Queuing Penalty (veh)		14	4					
Storage Bay Dist (ft)	40					100		100
Storage Blk Time (%)	31	3				0	13	0
Queuing Penalty (veh)	63	7				0	25	0

**Intersection: 5: Fair Oaks Ave & El Centro St**

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	215	147	98	262	240	94	316	324
Average Queue (ft)	110	54	38	127	92	17	212	221
95th Queue (ft)	196	109	83	223	192	57	367	371
Link Distance (ft)	346	359		668	668		298	298
Upstream Blk Time (%)							3	4
Queuing Penalty (veh)							23	27
Storage Bay Dist (ft)			75			75		
Storage Blk Time (%)			1	15			17	
Queuing Penalty (veh)			5	10			3	

**Intersection: 6: Fremont Ave & El Centro St**

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	190	165	100	467	90	250
Average Queue (ft)	90	75	33	430	24	153
95th Queue (ft)	163	134	100	475	68	232
Link Distance (ft)	569	356		409		302
Upstream Blk Time (%)				81		0
Queuing Penalty (veh)				0		0
Storage Bay Dist (ft)			75		75	
Storage Blk Time (%)			0	61	0	25
Queuing Penalty (veh)			2	16	3	6

**Intersection: 7: Meridian Ave & El Centro St**

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	86	97	106	121
Average Queue (ft)	47	44	55	56
95th Queue (ft)	72	73	86	95
Link Distance (ft)	1116	251	420	288
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

**Intersection: 8: orange Grove Ave & El Centro St**

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	L	TR
Maximum Queue (ft)	75	90	51	45	34
Average Queue (ft)	41	38	23	17	11
95th Queue (ft)	65	71	43	35	25
Link Distance (ft)	376	1116	405	283	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					75
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	

**Intersection: 16: Meridian Ave & Hope St**

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	60	2	49
Average Queue (ft)	35	0	8
95th Queue (ft)	56	2	32
Link Distance (ft)	270	258	376
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 19: Diamond Ave & Mission St

Movement	EB	WB	NB
Directions Served	TR	LTR	LTR
Maximum Queue (ft)	131	255	114
Average Queue (ft)	27	54	39
95th Queue (ft)	137	183	94
Link Distance (ft)	202	266	310
Upstream Blk Time (%)	2	1	
Queuing Penalty (veh)	9	7	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: Fairview Ave & Mission St

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	67	228	47	107	80	144
Average Queue (ft)	13	76	14	8	26	48
95th Queue (ft)	51	254	41	86	69	124
Link Distance (ft)		266		542	313	191
Upstream Blk Time (%)		4		0		3
Queuing Penalty (veh)		21		1		0
Storage Bay Dist (ft)	50		50			
Storage Blk Time (%)	0	19	0	1		
Queuing Penalty (veh)	0	4	1	0		

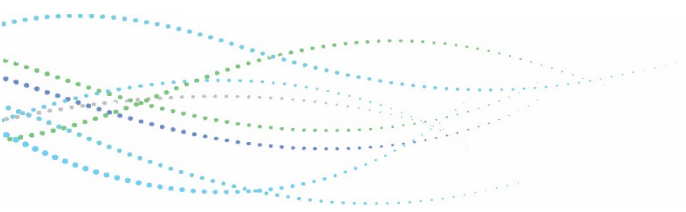
Zone Summary

Zone wide Queuing Penalty: 1350



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## APPENDIX C: SLOW STREETS CONCEPTUAL PLANS

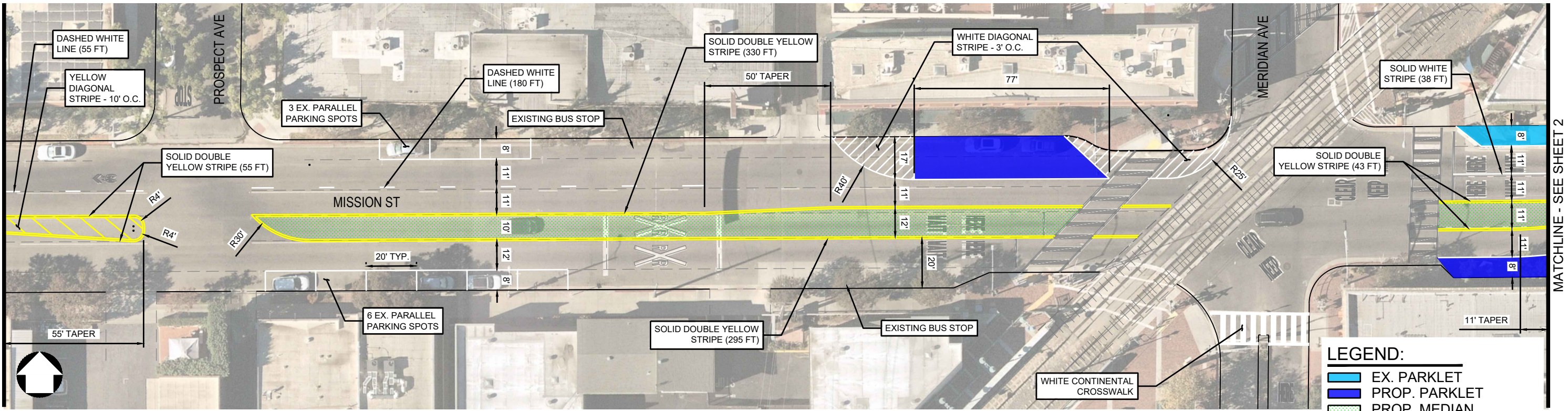




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**PLAN 1A**  
SCALE: 1" = 40'



**PLAN 1B**  
SCALE: 1" = 40'

**LEGEND:**

	EX. PARKLET
	PROP. PARKLET
	PROP. MEDIAN
	EX. STRIPING/MARKINGS

- NOTES:**
1. CONCEPTUAL HORIZONTAL GEOMETRY SHOWN. ROADWAY PAVEMENT MARKINGS, BARRIER TYPE, AND SURFACE MATERIALS FOR PARKLET AREAS TO BE DETERMINED BY CITY ENGINEER.
  2. ALL CONFLICTING PAVEMENT MARKINGS AND SIGNS SHALL BE REMOVED, ERADICATED, OR COVERED
  3. ADA ACCESS MUST BE MAINTAINED WITH ANY CHANGES MADE WITHIN THE PROJECT RIGHT OF WAY

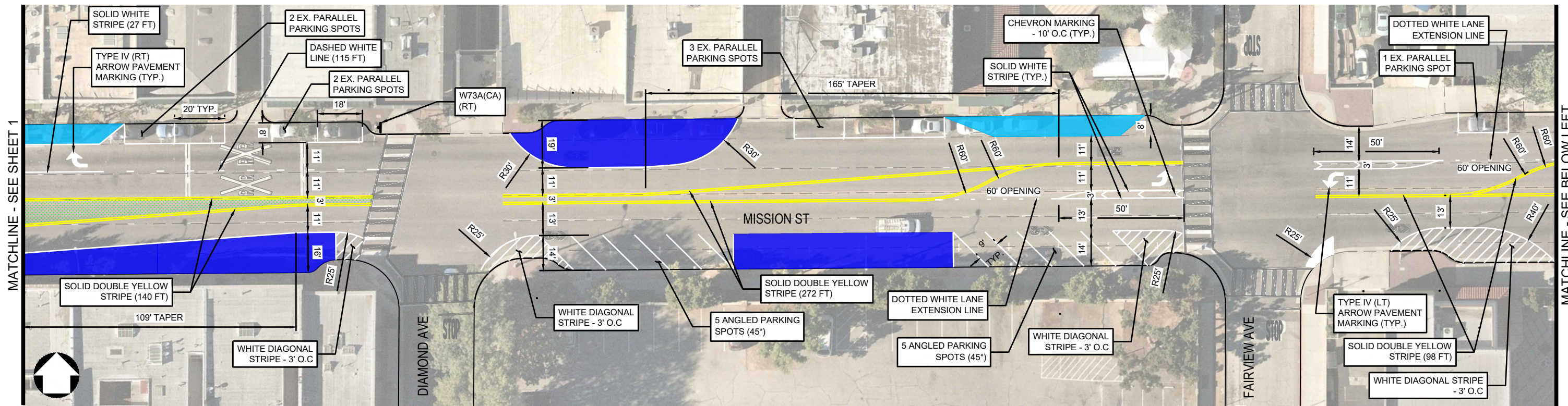
SOUTH PASADENA SLOW STREETS PROGRAM, CONCEPTUAL PLANS  
MISSION STREET



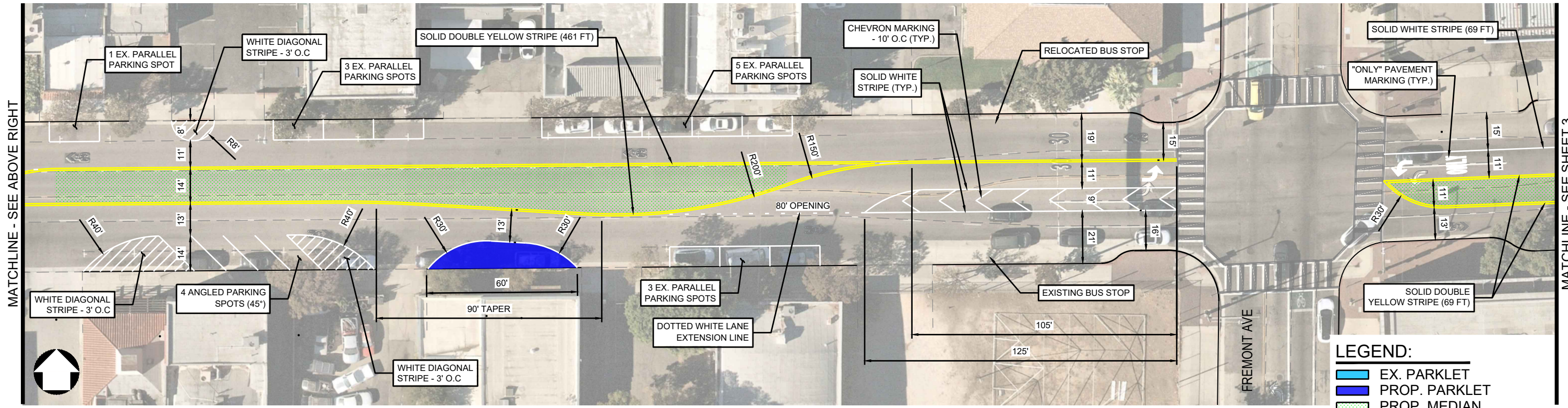
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PLAN 1C  
SCALE: 1" = 40'



PLAN 1D  
SCALE: 1" = 40'

**LEGEND:**

- EX. PARKLET
- PROP. PARKLET
- PROP. MEDIAN
- EX. STRIPING/MARKINGS



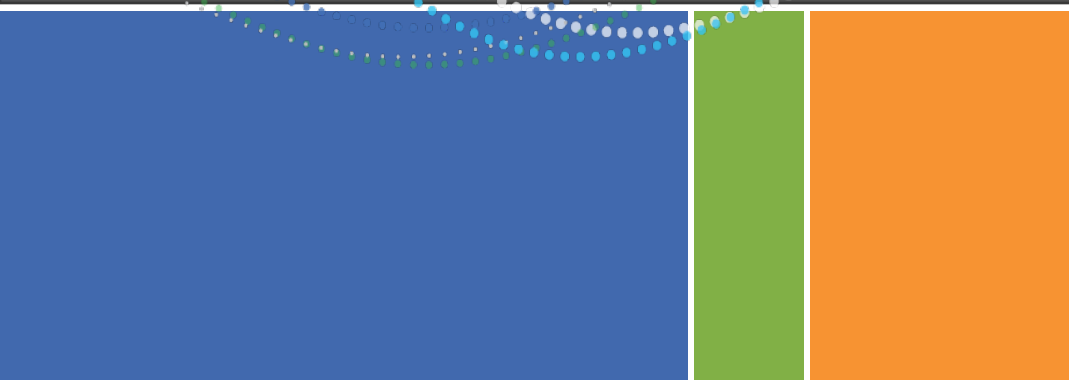
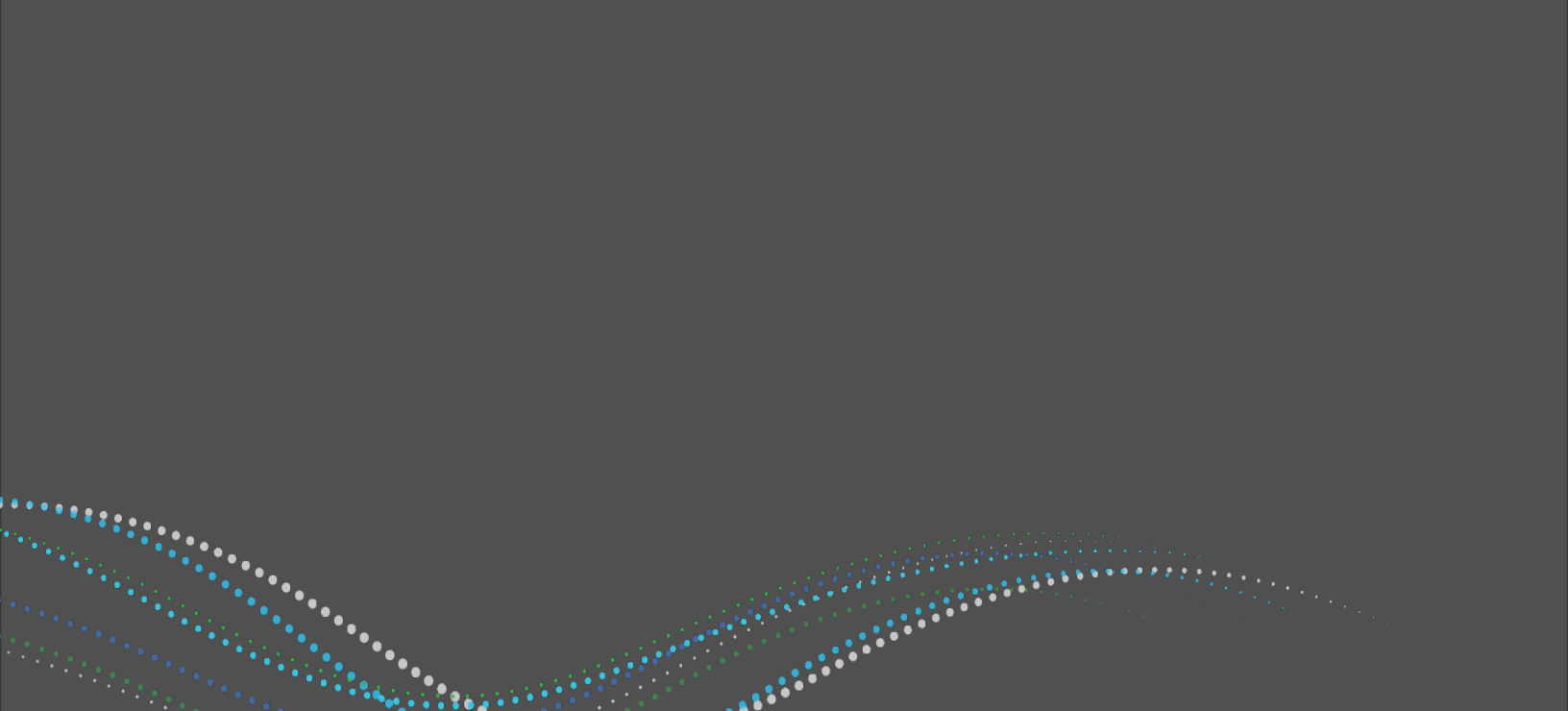
- NOTES:**
1. CONCEPTUAL HORIZONTAL GEOMETRY SHOWN. ROADWAY PAVEMENT MARKINGS, BARRIER TYPE, AND SURFACE MATERIALS FOR PARKLET AREAS TO BE DETERMINED BY CITY ENGINEER.
  2. ALL CONFLICTING PAVEMENT MARKINGS AND SIGNS SHALL BE REMOVED, ERADICATED, OR COVERED
  3. ADA ACCESS MUST BE MAINTAINED WITH ANY CHANGES MADE WITHIN THE PROJECT RIGHT OF WAY

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SOUTH PASADENA SLOW STREETS PROGRAM, CONCEPTUAL PLANS  
MISSION STREET







**iteris<sup>®</sup>**

1700 Carnegie Avenue, Suite 100  
Santa Ana, CA 92705

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