



September 5, 2018

Mr. Josh Golcheh
MISSION WHITE CAPITAL, LLC
433 N. Camden Drive, #500
Beverly Hills, CA 90210

RE: 888 West Mission Boulevard Supplemental Traffic Study

Mr. Josh Golcheh:

INTRODUCTION

Ganddini Associates, Inc. is pleased to provide this supplemental traffic study for the 888 West Mission Boulevard project in the City of Pomona. The purpose of this report is to provide an assessment of the traffic impacts resulting from the development of the proposed 888 West Mission Boulevard project and to identify the traffic mitigation measures necessary to maintain the established Level of Service standard for the elements of the impacted roadway system. This supplemental traffic study is an update of the 888 West Mission Boulevard Traffic Impact Study report prepared by Fehr & Peers (January 2018) ["January 2018 Traffic Impact Study"]. This updated report utilized information from the previous January 2018 Traffic Impact Study including the 2017 intersection turning movement counts, list of study area intersections, and cumulative project information. The following highlights the key assumption changes made by Ganddini Associates, Inc. for this supplemental traffic study:

- Revised project trip generation based on the updated site plan that Pad 1A (3,638 square feet) will be occupied by a 24-hour convenience market instead of a high-turnover sit-down restaurant.
- Revised project trip assignment at the study area intersections.
- Revised intersection delay and Level of Service analysis for the "With Project" conditions.
- Revised intersection queueing analysis for the "With Project" conditions.

This supplemental traffic study includes calculation of Levels of Service consistent with the assumptions and methodologies used in the January 2018 Traffic Impact Study.

REVISED PROJECT TRIP GENERATION

The January 2018 Traffic Impact Study analyzed Pad 1A (3,638 square feet) as a high-turnover sit-down restaurant while this supplemental traffic study assesses the traffic impact if Pad 1A were to be occupied by a 24-hour convenience market. Table 1 shows the project trip generation rates obtained from the Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition, 2017. Trip generation rates were determined for daily trips, morning peak hour inbound and outbound trips, and evening peak hour inbound and outbound trips for the proposed land uses. The number of trips forecast to be generated by the proposed project are determined by multiplying the trip generation rates by the land use quantities.

As documented in the ITE Trip Generation Manual, a pass-by trip reduction adjustment is applicable to commercial land uses located along busy arterial highways attracting vehicle trips already on the roadway; this

is particularly the case when the roadway is experiencing peak operating conditions. To be consistent to the January 2018 Traffic Impact Study, a pass-by adjustment of 10 percent is was applied to the proposed 24-hour convenience market trip generation.

Table 1 summarizes the project trip generation. As shown in Table 1, the updated project land use (with a 24-hour convenience market) is forecast to generate a total of approximately 3,257 daily trips, 249 of which will occur during the morning peak hour and 238 of which will occur during the evening peak hour. The updated project trip generation is higher than the forecast estimated in the January 2018 Traffic Impact Study.

REVISED INTERSECTION DELAY AND LEVEL OF SERVICE ANALYSIS

The updated Existing (2017) Plus Project delay and Level of Service for the study intersections are shown in Table 2. Table 2 shows delay and Level of Service values at the study intersections with existing geometry and initial project driveway improvements. As shown in Table 2, the study intersections are projected to operate within acceptable Levels of Service (D or better) during the peak hours for the updated Existing (2017) Plus Project conditions. As shown in Table 2, the proposed project is forecast to result in no significant traffic impacts at the study intersections for Existing (2017) Plus Project traffic conditions.

The updated Opening Year (2018) With Project delay and Level of Service for the study intersections are shown in Table 3. Table 3 shows delay and Level of Service values at the study intersections with existing geometry and initial project improvements. As shown in Table 3, the study intersections are projected to operate within acceptable Levels of Service (D or better) during the peak hours for the updated Opening Year (2018) With Project conditions. As shown in Table 3, the proposed project is forecast to result in no significant traffic impacts at the study intersections for Opening Year (2018) With Project traffic conditions.

The results of the updated delay and Level of Service analysis for the Existing (2017) Plus Project conditions and Opening Year (2018) With Project conditions are both consistent with the findings of no significant traffic impacts as determined in the January 2018 Traffic Impact Study.

REVISED INTERSECTION QUEUEING ANALYSIS

The updated Existing (2017) Plus Project queueing analysis for the study intersections are shown in Table 4. Table 4 shows queueing values at the study intersections with existing geometry and initial project improvements. The updated Opening Year (2018) With Project queueing analysis for the study intersections are shown in Table 5. Table 5 shows queueing values at the study intersections with existing geometry and initial project improvements. Although queueing at the project driveways would not exceed the available storage, the northbound left turn at the intersection of White Avenue and Mission Boulevard (Intersection #2) is projected to queue past the White Avenue project driveway (Intersection #8). As the queue associated with the northbound left at Mission Boulevard could potentially block traffic ingress and egress at the White Avenue project driveway, it is recommended that the White Avenue project driveway (Intersection #8) be restricted to right turns in/out only.

The results of the updated queueing analysis for the Existing (2017) Plus Project conditions and Opening Year (2018) With Project conditions are both consistent to the January 2018 Traffic Impact Study.

RECOMMENDATIONS

As requested by City of Pomona staff, the project should comply with the following recommended improvements listed below from the previous Fehr & Peers Traffic Impact Study:

- Installation of pork-chop islands at the White Avenue and West Mission Boulevard Driveway. Installation of these islands will restrict access allowing for only right-in and right-out only access at both project driveways.
- Striping curb for no parking at Project Driveways to ensure adequate sight distance. The following striping would be required:
 - Mission Avenue: 80 feet from the Project Driveway to White Avenue.
 - White Avenue: 78 feet from the Project Driveway to West 6th Street.
 - West 6th Street: 15 feet from the Project Driveway to the west.
 - West 6th Street: 55 feet from the Project Driveway to the east.
 - Cypress Street: 60 feet from the Project Driveway to the north.
 - Cypress Street: 25 feet from the Project Driveway to the south.

CONCLUSIONS

The updated project land use (with a 24-hour convenience market) is forecast to generate a total of approximately 3,257 daily trips, 249 of which will occur during the morning peak hour and 238 of which will occur during the evening peak hour. The updated project trip generation is higher than the forecast estimated in the January 2018 Traffic Impact Study.

The study intersections are projected to operate within acceptable Levels of Service (D or better) during the peak hours for the updated Existing (2017) Plus Project and the updated Opening Year (2018) With Project conditions. The proposed project is forecast to result in no significant traffic impacts at the study intersections. The results of the updated delay and Level of Service analysis for the Existing (2017) Plus Project conditions and Opening Year (2018) With Project conditions are both consistent with the findings of no significant traffic impacts as determined in the January 2018 Traffic Impact Study.

The results of the updated queueing analysis for the Existing (2017) Plus Project conditions and Opening Year (2018) With Project conditions are both consistent to the January 2018 Traffic Impact Study. Although queueing at the project driveways would not exceed the available storage, the northbound left turn at the intersection of White Avenue and Mission Boulevard (Intersection #2) is projected to queue past the White Avenue project driveway (Intersection #8). As the queue associated with the northbound left at Mission Boulevard could potentially block traffic ingress and egress at the White Avenue project driveway, it is recommended that the White Avenue project driveway (Intersection #8) be restricted to right turns in/out only.

As requested by City of Pomona staff, the project should comply with all the recommended improvements listed from the previous Fehr & Peers Traffic Impact Study.

Mr. Josh Golcheh
MISSION WHITE CAPITAL, LLC
September 5, 2018

It has been a pleasure to service your needs on the proposed 888 West Mission Boulevard project. Should you have any questions or if we can be of further assistance, please do not hesitate to call at (714) 795-3100.

Sincerely,

GANDDINI ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read 'J-Huang' followed by a stylized flourish.

Tom Huang, TE
Senior Associate

JN 18-0002

Table 1

Project Trip Generation

Trip Generation Rates										
Project				Morning Peak			Afternoon Peak			Daily
No.	Land Use	Code ¹	Unit ²	In%	Out%	Total	In%	Out%	Total	
1	Variety Store	ITE 814	TSF	57%	43%	3.18	52%	48%	6.84	63.47
2	Shopping Center (Laundromat)	ITE 820	TSF	62%	38%	0.94	48%	52%	3.81	37.75
3	Convenience Market	ITE 851	TSF	50%	50%	62.54	51%	49%	49.11	762.28
4	High-Turnover (Sit-Down) Restaurant	ITE 932	TSF	55%	45%	9.94	62%	38%	9.77	112.18

Trip Generation									
Project			Morning Peak			Afternoon Peak			Daily
No.	Land Use	Quantity ²	In	Out	Total	In	Out	Total	
A	Convenience Market	3.638 TSF	114	114	228	91	88	179	2,773
	Pass-By Trips ³	10%	-11	-11	-22	-9	-9	-18	-277
	Subtotal Net Trips		103	103	206	82	79	161	2,496
B	High-Turnover (Sit-Down) Restaurant	1.912 TSF	10	9	19	12	7	19	214
	Pass-By Trips ³	10%	-1	-1	-2	-1	-1	-2	-21
	Subtotal Net Trips		9	8	17	11	6	17	193
C	Variety Store	8.559 TSF	15	12	27	30	28	58	543
	Pass-By Trips ³	10%	-2	-1	-3	-3	-3	-6	-54
	Subtotal Net Trips		13	11	24	27	25	52	489
D	Shopping Center (Laundromat)	2.324 TSF	1	1	2	4	5	9	88
	Pass-By Trips ³	10%	-	-	-	-	-1	-1	-9
	Subtotal Net Trips		1	1	2	4	4	8	79
Total Trips without Adjustment		16.433 TSF	140	136	276	137	128	265	3,618
Total Pass-By Trip Reduction			-14	-13	-27	-13	-14	-27	-361
Total Net Trips with Pass-By Trip Reduction			126	123	249	124	114	238	3,257

¹ Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017.

² TSF = Thousand Square Feet

Table 2

Existing (2017) Plus Project Intersection Delay and Levels of Service

Intersection	Traffic Control ³	Intersection Approach Lanes ¹												Peak Hour Delay - Level of Service				Project Change		Project Impact
		Northbound			Southbound			Eastbound			Westbound			Without Project ²		With Project				
		L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening	Morning	Evening	AM	PM	
1) Hamilton Boulevard (NS) at: Mission Boulevard (EW)	TS	1	1.5	0.5	1	1	1	1	1.5	0.5	1	1.5	0.5	15.1 - B	12.4 - B	14.8 - B	12.2 - B	-0.3	-0.2	No
2) White Avenue (NS) at: Mission Boulevard (EW)	TS	1	1.5	0.5	1	1.5	0.5	1	1.5	0.5	1	1.5	0.5	25.5 - C	20.3 - C	27.6 - C	24.0 - C	2.1	3.7	No
3) Park Avenue (NS) at: Mission Boulevard (EW)	TS	1	1	1	1	1	1	1	1.5	0.5	1	1.5	0.5	7.9 - A	9.7 - A	10.1 - B	9.5 - A	2.2	-0.2	No
4) Garey Avenue (NS) at: Mission Boulevard (EW)	TS	1	2	1	1	2	1	1	1.5	0.5	1	1.5	0.5	34.3 - C	34.0 - C	39.3 - D	36.7 - D	5.0	2.7	No
5) Project Driveway (NS) at: Mission Boulevard (EW)	<u>CSS</u>	<u>0.5</u>	0	<u>0.5</u>	0	0	0	0	1.5	0.5	1	2	0	0.0 - A	0.0 - A	12.2 - B	12.5 - B	12.2	12.5	No
6) Cypress Street (NS) at: Project Driveway (EW)	<u>CSS</u>	0.5	0.5	0	0	0.5	0.5	<u>0.5</u>	0	<u>0.5</u>	0	0	0	0.0 - A	0.0 - A	8.8 - A	8.7 - A	8.8	8.7	No
7) Project Driveway (NS) at: 6th Street (EW)	<u>CSS</u>	0	0	0	<u>0.5</u>	0	<u>0.5</u>	0.5	0.5	0	0	0.5	0.5	0.0 - A	0.0 - A	8.6 - A	8.5 - A	8.6	8.5	No
8) White Avenue (NS) at: Project Driveway (EW)	<u>CSS</u>	0	1.5	0.5	0.5	1.5	0	0	0	0	<u>0.5</u>	0	<u>0.5</u>	0.0 - A	0.0 - A	13.5 - B	11.1 - B	13.5	11.1	No

¹ When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane, there must be sufficient width for right turning vehicles to travel outside the through lanes (de facto right turn lane). L = Left; T = Through; R = Right; > = Right Turn Overlap; <1> = Shared Left/Through/Right Lane; 1! = Defactor Right Turn Lane; 0.5 = Shared Lane with Two Turning Movements; **BOLD** = Improvement

² The "Existing (2017) Without Project" conditions based on the 888 West Mission Boulevard Traffic Impact Study (Fehr & Peers, January 2018).

³ TS = Traffic Signal; CSS = Cross Street Stop

Table 3

Opening Year (2018) With Project Intersection Delay and Levels of Service

Intersection	Traffic Control ³	Intersection Approach Lanes ¹												Peak Hour Delay - Level of Service				Project Change		Project Impact
		Northbound			Southbound			Eastbound			Westbound			With Project ²		With Project				
		L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening	Morning	Evening	AM	PM	
1) Hamilton Boulevard (NS) at: Mission Boulevard (EW)	TS	1	1.5	0.5	1	1	1	1	1.5	0.5	1	1.5	0.5	15.9 - B	12.8 - B	15.4 - B	12.5 - B	-0.5	-0.3	No
2) White Avenue (NS) at: Mission Boulevard (EW)	TS	1	1.5	0.5	1	1.5	0.5	1	1.5	0.5	1	1.5	0.5	26.9 - C	21.7 - C	29.0 - C	22.4 - C	2.1	0.7	No
3) Park Avenue (NS) at: Mission Boulevard (EW)	TS	1	1	1	1	1	1	1	1.5	0.5	1	1.5	0.5	8.1 - A	10.0 - A	6.4 - A	9.7 - A	-1.7	-0.3	No
4) Garey Avenue (NS) at: Mission Boulevard (EW)	TS	1	2	1	1	2	1	1	1.5	0.5	1	1.5	0.5	37.1 - D	36.2 - D	42.5 - D	38.3 - D	5.4	2.1	No
5) Project Driveway (NS) at: Mission Boulevard (EW)	<u>CSS</u>	<u>0.5</u>	0	<u>0.5</u>	0	0	0	0	1.5	0.5	1	2	0	0.0 - A	0.0 - A	12.4 - B	12.7 - B	12.4	12.7	No
6) Cypress Street (NS) at: Project Driveway (EW)	<u>CSS</u>	0.5	0.5	0	0	0.5	0.5	<u>0.5</u>	0	<u>0.5</u>	0	0	0	0.0 - A	0.0 - A	8.8 - A	8.7 - A	8.8	8.7	No
7) Project Driveway (NS) at: 6th Street (EW)	<u>CSS</u>	0	0	0	<u>0.5</u>	0	<u>0.5</u>	0.5	0.5	0	0	0.5	0.5	0.0 - A	0.0 - A	8.6 - A	8.5 - A	8.6	8.5	No
8) White Avenue (NS) at: Project Driveway (EW)	<u>CSS</u>	0	1.5	0.5	0.5	1.5	0	0	0	0	<u>0.5</u>	0	<u>0.5</u>	0.0 - A	0.0 - A	13.6 - B	11.2 - B	13.6	11.2	No

¹ When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane, there must be sufficient width for right turning vehicles to travel outside the through lanes (de facto right turn lane). L = Left; T = Through; R = Right; > = Right Turn Overlap; <1> = Shared Left/Through/Right Lane; 1! = Defactor Right Turn Lane; 0.5 = Shared Lane with Two Turning Movements; **BOLD** = Improvement

² The "Opening Year (2018) Without Project" conditions based on the 888 West Mission Boulevard Traffic Impact Study (Fehr & Peers, January 2018).

³ TS = Traffic Signal; CSS = Cross Street Stop

Table 4

Existing (2017) Plus Project Intersection Queueing

Intersection	Movement ¹	Storage (feet)	Peak Hour Queue ² (feet)	
			Morning	Evening
2) White Avenue (NS) at: Mission Boulevard (EW)	NBL	70	194 ³	117 ³
5) Project Driveway (NS) at: Mission Boulevard (EW)	WBL	50	5	5
	EBR	135	0	0
	NBLR	120	5	5
6) Cypress Street (NS) at: Project Driveway (EW)	SBR	120	0	0
	NBL	120	0	0
	EBLR	120	3	0
7) Project Driveway (NS) at: 6th Street (EW)	WBL	65	0	0
	EBR	165	0	0
	SBTL	100	5	3
8) White Avenue (NS) at: Project Driveway (EW)	SBTL	120	5	3
	NBR	120	0	0
	WBLR	100	10	8

¹ NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound; L = Left Turn; T = Through; R = Right Turn

² 95th Percentile Queue Length; 25 feet per vehicle

³ Although queueing at the project driveways would not exceed the available storage, the northbound left turn at the intersection of White Avenue and Mission Boulevard (Intersection #2) is projected to queue past the White Avenue project driveway (Intersection #8). As the queue associated with the northbound left at Mission Boulevard could potentially block traffic ingress and egress at the White Avenue project driveway, it is recommended that a "Keep Clear" pavement marking be installed at northbound White Avenue to prevent queued vehicles from blocking site access.

Table 5

Opening Year (2018) With Project Intersection Queueing

Intersection	Movement ¹	Storage (feet)	Peak Hour Queue ² (feet)	
			Morning	Evening
2) White Avenue (NS) at: Mission Boulevard (EW)	NBL	70	199 ³	117 ³
5) Project Driveway (NS) at: Mission Boulevard (EW)	WBL	50	5	5
	EBR	135	0	0
	NBLR	120	5	5
6) Cypress Street (NS) at: Project Driveway (EW)	SBR	120	0	0
	NBL	120	0	0
	EBLR	120	3	0
7) Project Driveway (NS) at: 6th Street (EW)	WBL	65	0	0
	EBR	165	0	0
	SBTL	100	5	3
8) White Avenue (NS) at: Project Driveway (EW)	SBTL	120	5	3
	NBR	120	0	0
	WBLR	100	10	8

¹ NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound; L = Left Turn; T = Through; R = Right Turn

² 95th Percentile Queue Length; 25 feet per vehicle

³ Although queueing at the project driveways would not exceed the available storage, the northbound left turn at the intersection of White Avenue and Mission Boulevard (Intersection #2) is projected to queue past the White Avenue project driveway (Intersection #8). As the queue associated with the northbound left at Mission Boulevard could potentially block traffic ingress and egress at the White Avenue project driveway, it is recommended that a "Keep Clear" pavement marking be installed at northbound White Avenue to prevent queued vehicles from blocking site access.

APPENDIX A
INTERSECTION ANALYSIS WORKSHEETS

Existing (2017) Plus Project

HCM 6th Signalized Intersection Summary

1: Hamilton Blvd & Mission Blvd

888 West Mission Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	720	62	47	1070	49	95	191	80	77	130	92
Future Volume (veh/h)	56	720	62	47	1070	49	95	191	80	77	130	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	1.00		0.95	1.00		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	63	809	70	53	1202	55	107	215	90	87	146	103
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	291	1913	165	371	2000	91	133	296	118	108	199	157
Arrive On Green	0.61	0.61	0.61	0.81	0.81	0.81	0.08	0.13	0.13	0.07	0.11	0.11
Sat Flow, veh/h	394	3128	271	563	3272	150	1594	2307	923	1594	1772	1392
Grp Volume(v), veh/h	63	435	444	53	618	639	107	154	151	87	146	103
Grp Sat Flow(s),veh/h/ln	394	1683	1716	563	1683	1738	1594	1683	1547	1594	1772	1392
Q Serve(g_s), s	7.0	9.5	9.5	2.8	9.4	9.4	4.6	6.2	6.6	3.8	5.6	5.0
Cycle Q Clear(g_c), s	16.4	9.5	9.5	12.3	9.4	9.4	4.6	6.2	6.6	3.8	5.6	5.0
Prop In Lane	1.00		0.16	1.00		0.09	1.00		0.60	1.00		1.00
Lane Grp Cap(c), veh/h	291	1029	1049	371	1029	1063	133	216	198	108	199	157
V/C Ratio(X)	0.22	0.42	0.42	0.14	0.60	0.60	0.81	0.71	0.76	0.81	0.73	0.66
Avail Cap(c_a), veh/h	291	1029	1049	371	1029	1063	194	262	241	162	240	189
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.44	0.44	0.44	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.4	7.1	7.1	5.7	3.4	3.4	31.5	29.3	29.5	32.2	30.0	29.8
Incr Delay (d2), s/veh	1.7	1.3	1.3	0.4	1.1	1.1	14.5	7.0	10.8	16.4	8.8	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.1	3.2	0.2	2.0	2.1	2.2	2.8	2.9	1.9	2.8	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.1	8.4	8.4	6.0	4.6	4.5	46.0	36.3	40.3	48.6	38.9	35.9
LnGrp LOS	B	A	A	A	A	A	D	D	D	D	D	D
Approach Vol, veh/h		942			1310			412			336	
Approach Delay, s/veh		8.7			4.6			40.3			40.5	
Approach LOS		A			A			D			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		47.3	9.2	13.5		47.3	10.3	12.4				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		38.5	7.1	10.9		38.5	8.5	9.5				
Max Q Clear Time (g_c+I1), s		18.4	5.8	8.6		14.3	6.6	7.6				
Green Ext Time (p_c), s		6.8	0.0	0.4		10.4	0.0	0.2				
Intersection Summary												
HCM 6th Ctrl Delay			14.8									
HCM 6th LOS			B									

HCM 6th Signalized Intersection Summary

2: White Ave & Mission Blvd

888 West Mission Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	699	110	42	863	107	190	760	52	98	527	118
Future Volume (veh/h)	62	699	110	42	863	107	190	760	52	98	527	118
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.96	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	68	768	121	46	948	118	209	835	57	108	579	130
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	205	1146	181	215	1186	148	246	1048	72	133	698	156
Arrive On Green	0.53	0.53	0.53	0.79	0.79	0.79	0.15	0.33	0.33	0.08	0.26	0.26
Sat Flow, veh/h	473	2902	457	559	3003	374	1594	3188	218	1594	2705	605
Grp Volume(v), veh/h	68	445	444	46	531	535	209	441	451	108	359	350
Grp Sat Flow(s),veh/h/ln	473	1683	1676	559	1683	1693	1594	1683	1722	1594	1683	1627
Q Serve(g_s), s	8.9	13.6	13.6	4.1	12.6	12.6	8.9	16.7	16.7	4.7	14.1	14.2
Cycle Q Clear(g_c), s	21.5	13.6	13.6	17.7	12.6	12.6	8.9	16.7	16.7	4.7	14.1	14.2
Prop In Lane	1.00		0.27	1.00		0.22	1.00		0.13	1.00		0.37
Lane Grp Cap(c), veh/h	205	665	662	215	665	669	246	553	566	133	434	420
V/C Ratio(X)	0.33	0.67	0.67	0.21	0.80	0.80	0.85	0.80	0.80	0.81	0.83	0.83
Avail Cap(c_a), veh/h	205	665	662	215	665	669	262	553	566	148	434	420
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.7	13.3	13.3	11.2	5.8	5.8	28.8	21.4	21.4	31.5	24.5	24.5
Incr Delay (d2), s/veh	3.8	4.7	4.8	2.3	9.7	9.7	21.7	11.4	11.1	25.7	16.4	17.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	4.8	4.8	0.5	3.6	3.6	4.7	7.8	8.0	2.7	7.3	7.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.5	18.0	18.0	13.4	15.5	15.4	50.5	32.7	32.5	57.2	40.9	41.9
LnGrp LOS	C	B	B	B	B	B	D	C	C	E	D	D
Approach Vol, veh/h	957			1112			1101			817		
Approach Delay, s/veh	18.5			15.4			36.0			43.5		
Approach LOS	B			B			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.3	27.5		32.2	15.3	22.6		32.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	23.0	23.0		27.0	11.5	18.0		27.0				
Max Q Clear Time (g_c+10), s	18.7	18.7		23.5	10.9	16.2		19.7				
Green Ext Time (p_c), s	0.0	2.2		2.0	0.0	0.8		4.1				
Intersection Summary												
HCM 6th Ctrl Delay	27.6											
HCM 6th LOS	C											

HCM 6th Signalized Intersection Summary

3: Park Ave & Mission Blvd

888 West Mission Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	631	162	49	969	29	66	167	60	24	132	35
Future Volume (veh/h)	74	631	162	49	969	29	66	167	60	24	132	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.99	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	82	701	180	54	1077	32	73	186	67	27	147	39
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	379	1761	452	379	2232	66	241	358	299	211	358	294
Arrive On Green	0.45	0.45	0.45	0.89	0.89	0.89	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	454	2631	675	563	3335	99	1061	1772	1479	1000	1772	1455
Grp Volume(v), veh/h	82	448	433	54	544	565	73	186	67	27	147	39
Grp Sat Flow(s),veh/h/ln	454	1683	1623	563	1683	1750	1061	1772	1479	1000	1772	1455
Q Serve(g_s), s	8.5	12.5	12.5	2.7	4.3	4.3	4.5	6.6	2.7	1.7	5.1	1.5
Cycle Q Clear(g_c), s	12.9	12.5	12.5	15.2	4.3	4.3	9.6	6.6	2.7	8.3	5.1	1.5
Prop In Lane	1.00		0.42	1.00		0.06	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	379	1127	1086	379	1127	1172	241	358	299	211	358	294
V/C Ratio(X)	0.22	0.40	0.40	0.14	0.48	0.48	0.30	0.52	0.22	0.13	0.41	0.13
Avail Cap(c_a), veh/h	379	1127	1086	379	1127	1172	299	456	380	266	456	374
HCM Platoon Ratio	0.67	0.67	0.67	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.29	0.29	0.29	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.4	9.8	9.8	4.6	1.5	1.5	28.5	24.9	23.3	28.6	24.3	22.9
Incr Delay (d2), s/veh	1.3	1.1	1.1	0.2	0.4	0.4	0.7	1.2	0.4	0.3	0.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.1	4.9	0.2	0.9	0.9	1.1	2.7	0.9	0.4	2.1	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.7	10.9	10.9	4.8	1.9	1.9	29.2	26.1	23.7	28.9	25.1	23.1
LnGrp LOS	B	B	B	A	A	A	C	C	C	C	C	C
Approach Vol, veh/h		963		1163			326			213		
Approach Delay, s/veh		11.1		2.1			26.3			25.2		
Approach LOS		B		A			C			C		
Timer - Assigned Phs		2		4			6			8		
Phs Duration (G+Y+Rc), s		18.6		51.4			18.6			51.4		
Change Period (Y+Rc), s		4.5		4.5			4.5			4.5		
Max Green Setting (Gmax), s		18.0		43.0			18.0			43.0		
Max Q Clear Time (g_c+I1), s		12.6		15.9			11.3			18.2		
Green Ext Time (p_c), s		0.7		7.9			0.5			9.0		
Intersection Summary												
HCM 6th Ctrl Delay			10.1									
HCM 6th LOS			B									

HCM 6th Signalized Intersection Summary

4: Garvey Ave & Mission Blvd

888 West Mission Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	462	129	75	836	109	137	539	92	54	402	84
Future Volume (veh/h)	126	462	129	75	836	109	137	539	92	54	402	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	129	471	132	77	853	111	140	550	94	55	410	86
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	148	785	218	132	878	114	157	1040	444	75	866	370
Arrive On Green	0.06	0.20	0.20	0.08	0.29	0.29	0.10	0.31	0.31	0.05	0.26	0.26
Sat Flow, veh/h	1594	2580	717	1594	2982	388	1594	3367	1439	1594	3367	1438
Grp Volume(v), veh/h	129	306	297	77	481	483	140	550	94	55	410	86
Grp Sat Flow(s),veh/h/ln	1594	1683	1613	1594	1683	1687	1594	1683	1439	1594	1683	1438
Q Serve(g_s), s	5.6	11.5	11.7	3.3	19.8	19.8	6.1	9.4	2.3	2.4	7.2	2.3
Cycle Q Clear(g_c), s	5.6	11.5	11.7	3.3	19.8	19.8	6.1	9.4	2.3	2.4	7.2	2.3
Prop In Lane	1.00		0.44	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	148	512	491	132	495	496	157	1040	444	75	866	370
V/C Ratio(X)	0.87	0.60	0.61	0.58	0.97	0.97	0.89	0.53	0.21	0.74	0.47	0.23
Avail Cap(c_a), veh/h	148	512	491	132	495	496	157	1040	444	116	866	370
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.4	24.0	24.0	30.9	24.4	24.4	31.2	20.0	8.6	32.9	22.0	10.1
Incr Delay (d2), s/veh	37.3	4.7	5.1	6.4	34.1	34.0	41.9	1.9	1.1	13.0	1.9	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	5.4	5.3	1.4	12.0	12.0	4.1	3.7	1.2	1.2	2.9	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.7	28.7	29.1	37.3	58.5	58.4	73.1	21.9	9.7	46.0	23.8	11.6
LnGrp LOS	E	C	C	D	E	E	E	C	A	D	C	B
Approach Vol, veh/h	732		1041			784			551			
Approach Delay, s/veh	36.1		56.9			29.6			24.1			
Approach LOS	D		E			C			C			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.8	26.1	10.3	25.8	11.4	22.5	11.0	25.1				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.1	19.8	5.8	21.3	6.9	18.0	6.5	20.6				
Max Q Clear Time (g_c+I), s	14.4	11.4	5.3	13.7	8.1	9.2	7.6	21.8				
Green Ext Time (p_c), s	0.0	2.6	0.0	2.3	0.0	2.0	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay 39.3

HCM 6th LOS D

HCM 6th TWSC
5: Project Dwy & Mission Blvd

888 West Mission Blvd

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↖	
Traffic Vol, veh/h	837	14	36	1017	0	34
Future Vol, veh/h	837	14	36	1017	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	930	16	40	1130	0	38
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	946	0	1583	473
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	645	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	721	-	99	538
Stage 1	-	-	-	-	341	-
Stage 2	-	-	-	-	484	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	721	-	94	538
Mov Cap-2 Maneuver	-	-	-	-	94	-
Stage 1	-	-	-	-	322	-
Stage 2	-	-	-	-	484	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.4		12.2	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	538	-	-	721	-	
HCM Lane V/C Ratio	0.07	-	-	0.055	-	
HCM Control Delay (s)	12.2	-	-	10.3	-	
HCM Lane LOS	B	-	-	B	-	
HCM 95th %tile Q(veh)	0.2	-	-	0.2	-	

HCM 6th TWSC
6: Cypress Ave & Project Dwy

888 West Mission Blvd

Intersection						
Int Delay, s/veh	2.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	0	0	6	10	14
Future Vol, veh/h	13	0	0	6	10	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	60	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	0	0	10	17	23
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	39	29	40	0	-	0
Stage 1	29	-	-	-	-	-
Stage 2	10	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	973	1046	1570	-	-	-
Stage 1	994	-	-	-	-	-
Stage 2	1013	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	973	1046	1570	-	-	-
Mov Cap-2 Maneuver	973	-	-	-	-	-
Stage 1	994	-	-	-	-	-
Stage 2	1013	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.8	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1570	-	973	-	-	
HCM Lane V/C Ratio	-	-	0.022	-	-	
HCM Control Delay (s)	0	-	8.8	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

Intersection

Int Delay, s/veh 5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	11	17	0	0	34
Future Vol, veh/h	7	11	17	0	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	60	60	60	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	18	28	0	0	57

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	28	0	0 70 28
Stage 1	-	-	- 28 -
Stage 2	-	-	- 42 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1585	-	- 934 1047
Stage 1	-	-	- 995 -
Stage 2	-	-	- 980 -
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1585	-	- 927 1047
Mov Cap-2 Maneuver	-	-	- 927 -
Stage 1	-	-	- 987 -
Stage 2	-	-	- 980 -

Approach	EB	WB	SB
HCM Control Delay, s	2.8	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1585	-	-	-	1047
HCM Lane V/C Ratio	0.007	-	-	-	0.054
HCM Control Delay (s)	7.3	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2

HCM 6th TWSC
8: White Ave & Project Dwy

888 West Mission Blvd

Intersection						
Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	55	953	29	42	641
Future Vol, veh/h	0	55	953	29	42	641
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	60	1047	32	46	704
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1507	540	0	0	1079	0
Stage 1	1063	-	-	-	-	-
Stage 2	444	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	112	486	-	-	642	-
Stage 1	293	-	-	-	-	-
Stage 2	614	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	99	486	-	-	642	-
Mov Cap-2 Maneuver	99	-	-	-	-	-
Stage 1	258	-	-	-	-	-
Stage 2	614	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	13.5	0		1.2		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	486	642	-	
HCM Lane V/C Ratio	-	-	0.124	0.072	-	
HCM Control Delay (s)	-	-	13.5	11	0.6	
HCM Lane LOS	-	-	B	B	A	
HCM 95th %tile Q(veh)	-	-	0.4	0.2	-	

Existing Plus Project
AM Peak Hour

Synchro 10 Report
Ganddini Associates, Inc.

HCM 6th Signalized Intersection Summary

1: Hamilton Blvd & Mission Blvd

888 West Mission Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	868	67	48	718	61	48	110	41	73	216	100
Future Volume (veh/h)	76	868	67	48	718	61	48	110	41	73	216	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.93	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	79	904	70	50	748	64	50	115	43	76	225	104
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	437	1673	130	296	1656	142	75	213	75	197	293	237
Arrive On Green	0.53	0.53	0.56	1.00	1.00	1.00	0.05	0.09	0.09	0.12	0.17	0.17
Sat Flow, veh/h	599	3160	245	516	3128	268	1594	2394	840	1594	1772	1438
Grp Volume(v), veh/h	79	481	493	50	402	410	50	79	79	76	225	104
Grp Sat Flow(s),veh/h/ln	599	1683	1722	516	1683	1713	1594	1683	1551	1594	1772	1438
Q Serve(g_s), s	4.3	11.3	11.2	2.5	0.0	0.0	1.9	2.7	2.9	2.6	7.3	3.9
Cycle Q Clear(g_c), s	4.3	11.3	11.2	13.8	0.0	0.0	1.9	2.7	2.9	2.6	7.3	3.9
Prop In Lane	1.00		0.14	1.00		0.16	1.00		0.54	1.00		1.00
Lane Grp Cap(c), veh/h	437	891	912	296	891	907	75	150	138	197	293	237
V/C Ratio(X)	0.18	0.54	0.54	0.17	0.45	0.45	0.67	0.53	0.58	0.39	0.77	0.44
Avail Cap(c_a), veh/h	437	891	912	296	891	907	146	323	297	199	399	323
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.74	0.74	0.74	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.7	9.3	9.2	2.5	0.0	0.0	28.1	26.1	26.2	24.2	23.9	22.5
Incr Delay (d2), s/veh	0.9	2.3	2.3	0.9	1.2	1.2	9.7	2.8	3.7	1.2	6.1	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.9	4.0	0.1	0.3	0.3	0.9	1.1	1.2	1.0	3.3	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.6	11.7	11.5	3.4	1.2	1.2	37.8	29.0	30.0	25.5	30.1	23.8
LnGrp LOS	A	B	B	A	A	A	D	C	C	C	C	C
Approach Vol, veh/h	1053			862				208			405	
Approach Delay, s/veh	11.3			1.3				31.5			27.6	
Approach LOS	B			A				C			C	
Timer - Assigned Phs	2		3	4		6	7	8				
Phs Duration (G+Y+Rc), s	38.3		11.9	9.8		38.3	7.3	14.4				
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s	27.5		7.5	11.5		27.5	5.5	13.5				
Max Q Clear Time (g_c+I1), s	13.3		4.6	4.9		15.8	3.9	9.3				
Green Ext Time (p_c), s	6.1		0.0	0.4		4.5	0.0	0.6				
Intersection Summary												
HCM 6th Ctrl Delay	12.2											
HCM 6th LOS	B											

HCM 6th Signalized Intersection Summary

2: White Ave & Mission Blvd

888 West Mission Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	800	108	62	640	112	112	560	39	106	796	75
Future Volume (veh/h)	92	800	108	62	640	112	112	560	39	106	796	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	93	808	109	63	646	113	113	566	39	107	804	76
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	295	1125	152	200	1080	189	139	1000	69	132	956	90
Arrive On Green	0.38	0.38	0.38	0.76	0.76	0.76	0.09	0.31	0.31	0.08	0.31	0.31
Sat Flow, veh/h	629	2967	400	544	2848	497	1594	3194	220	1594	3101	293
Grp Volume(v), veh/h	93	458	459	63	381	378	113	298	307	107	436	444
Grp Sat Flow(s),veh/h/ln	629	1683	1684	544	1683	1662	1594	1683	1730	1594	1683	1711
Q Serve(g_s), s	7.5	13.9	13.9	6.4	6.0	6.0	4.2	8.9	8.9	4.0	14.5	14.5
Cycle Q Clear(g_c), s	13.5	13.9	13.9	20.3	6.0	6.0	4.2	8.9	8.9	4.0	14.5	14.5
Prop In Lane	1.00		0.24	1.00		0.30	1.00		0.13	1.00		0.17
Lane Grp Cap(c), veh/h	295	639	639	200	639	631	139	527	541	132	519	528
V/C Ratio(X)	0.31	0.72	0.72	0.32	0.60	0.60	0.81	0.57	0.57	0.81	0.84	0.84
Avail Cap(c_a), veh/h	295	639	639	200	639	631	146	527	541	146	519	528
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.82	0.82	0.82	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.3	15.9	15.9	13.3	5.2	5.2	26.9	17.2	17.2	27.1	19.4	19.4
Incr Delay (d2), s/veh	2.3	5.6	5.6	4.1	4.1	4.2	27.2	4.3	4.3	26.2	15.1	14.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	5.7	5.7	0.7	1.9	1.9	2.6	3.7	3.8	2.4	7.3	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.6	21.5	21.5	17.4	9.3	9.4	54.1	21.5	21.5	53.3	34.5	34.3
LnGrp LOS	C	C	C	B	A	A	D	C	C	D	C	C
Approach Vol, veh/h	1010			822			718			987		
Approach Delay, s/veh	21.4			10.0			26.6			36.4		
Approach LOS	C			A			C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	23.3		27.3	9.7	23.0		27.3				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	18.5		22.5	5.5	18.5		22.5				
Max Q Clear Time (g_c+I), s	10.9	10.9		15.9	6.2	16.5		22.3				
Green Ext Time (p_c), s	0.0	2.2		3.5	0.0	1.1		0.1				
Intersection Summary												
HCM 6th Ctrl Delay	24.0											
HCM 6th LOS	C											

HCM 6th Signalized Intersection Summary

3: Park Ave & Mission Blvd

888 West Mission Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	856	41	67	714	39	171	157	62	47	158	67
Future Volume (veh/h)	42	856	41	67	714	39	171	157	62	47	158	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	0.99		0.97	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	45	920	44	72	768	42	184	169	67	51	170	72
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	336	1669	80	386	1655	90	353	541	444	355	541	444
Arrive On Green	1.00	1.00	1.00	0.51	0.51	0.54	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	601	3264	156	519	3237	177	1006	1772	1454	1012	1772	1455
Grp Volume(v), veh/h	45	474	490	72	399	411	184	169	67	51	170	72
Grp Sat Flow(s),veh/h/ln	601	1683	1737	519	1683	1731	1006	1772	1454	1012	1772	1455
Q Serve(g_s), s	1.6	0.0	0.0	4.7	9.1	9.1	10.3	4.4	2.0	2.4	4.4	2.2
Cycle Q Clear(g_c), s	10.7	0.0	0.0	4.7	9.1	9.1	14.7	4.4	2.0	6.8	4.4	2.2
Prop In Lane	1.00		0.09	1.00		0.10	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	336	861	888	386	861	885	353	541	444	355	541	444
V/C Ratio(X)	0.13	0.55	0.55	0.19	0.46	0.46	0.52	0.31	0.15	0.14	0.31	0.16
Avail Cap(c_a), veh/h	336	861	888	386	861	885	390	605	497	392	605	497
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.71	0.71	0.71	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	1.6	0.0	0.0	8.3	9.4	9.3	21.7	16.0	15.2	18.6	16.0	15.2
Incr Delay (d2), s/veh	0.8	2.5	2.5	0.8	1.3	1.2	1.2	0.3	0.2	0.2	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.6	0.6	0.5	3.1	3.1	2.4	1.7	0.6	0.5	1.7	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.4	2.5	2.5	9.1	10.7	10.6	22.9	16.3	15.3	18.8	16.3	15.4
LnGrp LOS	A	A	A	A	B	B	C	B	B	B	B	B
Approach Vol, veh/h												
1009												
Approach Delay, s/veh												
2.5												
Approach LOS												
A												
Timer - Assigned Phs												
2												
4												
6												
8												
Phs Duration (G+Y+Rc), s												
22.8												
37.2												
22.8												
37.2												
Change Period (Y+Rc), s												
4.5												
4.5												
4.5												
Max Green Setting (Gmax), s												
20.5												
30.5												
20.5												
30.5												
Max Q Clear Time (g_c+I1), s												
17.7												
13.7												
9.8												
12.1												
Green Ext Time (p_c), s												
0.6												
6.3												
1.0												
5.9												
Intersection Summary												
HCM 6th Ctrl Delay												
9.5												
HCM 6th LOS												
A												

HCM 6th Signalized Intersection Summary

4: Garvey Ave & Mission Blvd

888 West Mission Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	721	156	150	548	93	157	624	129	100	617	101
Future Volume (veh/h)	146	721	156	150	548	93	157	624	129	100	617	101
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	149	736	159	153	559	95	160	637	132	102	630	103
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	180	827	179	184	871	147	191	918	394	126	781	335
Arrive On Green	0.11	0.30	0.30	0.12	0.30	0.30	0.12	0.27	0.27	0.08	0.23	0.23
Sat Flow, veh/h	1594	2735	591	1594	2862	484	1594	3367	1447	1594	3367	1444
Grp Volume(v), veh/h	149	453	442	153	328	326	160	637	132	102	630	103
Grp Sat Flow(s),veh/h/ln	1594	1683	1642	1594	1683	1663	1594	1683	1447	1594	1683	1444
Q Serve(g_s), s	7.1	20.1	20.1	7.3	13.1	13.2	7.7	13.2	3.9	4.9	13.8	3.2
Cycle Q Clear(g_c), s	7.1	20.1	20.1	7.3	13.1	13.2	7.7	13.2	3.9	4.9	13.8	3.2
Prop In Lane	1.00		0.36	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	180	509	496	184	512	506	191	918	394	126	781	335
V/C Ratio(X)	0.83	0.89	0.89	0.83	0.64	0.64	0.84	0.69	0.33	0.81	0.81	0.31
Avail Cap(c_a), veh/h	223	537	524	194	512	506	194	918	394	165	781	335
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	26.0	26.0	33.8	23.5	23.5	33.6	25.5	10.6	35.4	28.3	12.2
Incr Delay (d2), s/veh	18.4	16.3	16.7	24.6	2.7	2.8	25.9	4.3	2.3	19.6	8.8	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	9.9	9.7	4.0	5.4	5.3	4.3	5.6	2.1	2.5	6.3	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.3	42.3	42.7	58.4	26.1	26.3	59.5	29.8	12.9	55.0	37.1	14.6
LnGrp LOS	D	D	D	E	C	C	E	C	B	D	D	B
Approach Vol, veh/h	1044			807			929			835		
Approach Delay, s/veh	43.9			32.3			32.5			36.5		
Approach LOS	D			C			C			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.7	25.8	13.5	28.1	13.9	22.6	13.3	28.3				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	19.5	19.5	9.5	24.9	9.5	18.1	10.9	23.5				
Max Q Clear Time (g_c+I), s	10.9	15.2	9.3	22.1	9.7	15.8	9.1	15.2				
Green Ext Time (p_c), s	0.0	1.8	0.0	1.5	0.0	1.0	0.1	2.6				

Intersection Summary

HCM 6th Ctrl Delay	36.7
HCM 6th LOS	D

HCM 6th TWSC
5: Project Dwy & Mission Blvd

888 West Mission Blvd

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	
Traffic Vol, veh/h	933	14	34	894	0	33
Future Vol, veh/h	933	14	34	894	0	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	993	15	36	951	0	35
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	1008	0	1549	504
Stage 1	-	-	-	-	1001	-
Stage 2	-	-	-	-	548	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	683	-	105	513
Stage 1	-	-	-	-	316	-
Stage 2	-	-	-	-	543	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	683	-	99	513
Mov Cap-2 Maneuver	-	-	-	-	99	-
Stage 1	-	-	-	-	299	-
Stage 2	-	-	-	-	543	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.4		12.5	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	513	-	-	683	-	
HCM Lane V/C Ratio	0.068	-	-	0.053	-	
HCM Control Delay (s)	12.5	-	-	10.6	-	
HCM Lane LOS	B	-	-	B	-	
HCM 95th %tile Q(veh)	0.2	-	-	0.2	-	

HCM 6th TWSC
6: Cypress Ave & Project Dwy

888 West Mission Blvd

Intersection

Int Delay, s/veh 2.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	0	0	13	10	13
Future Vol, veh/h	12	0	0	13	10	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	0	0	15	12	15

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	35	20	27
Stage 1	20	-	-
Stage 2	15	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	978	1058	1587
Stage 1	1003	-	-
Stage 2	1008	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	978	1058	1587
Mov Cap-2 Maneuver	978	-	-
Stage 1	1003	-	-
Stage 2	1008	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1587	-	978	-	-
HCM Lane V/C Ratio	-	-	0.014	-	-
HCM Control Delay (s)	0	-	8.7	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Existing Plus Project
PM Peak Hour

Synchro 10 Report
Ganddini Associates, Inc.

Intersection						
Int Delay, s/veh	3.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	29	15	0	0	31
Future Vol, veh/h	7	29	15	0	0	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	34	17	0	0	36
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	17	0	-	0	67	17
Stage 1	-	-	-	-	17	-
Stage 2	-	-	-	-	50	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1600	-	-	-	938	1062
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	972	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1600	-	-	-	933	1062
Mov Cap-2 Maneuver	-	-	-	-	933	-
Stage 1	-	-	-	-	1001	-
Stage 2	-	-	-	-	972	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.4	0		8.5		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1600	-	-	-	1062	
HCM Lane V/C Ratio	0.005	-	-	-	0.034	
HCM Control Delay (s)	7.3	0	-	-	8.5	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

HCM 6th TWSC
8: White Ave & Project Dwy

888 West Mission Blvd

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	52	665	27	41	929
Future Vol, veh/h	0	52	665	27	41	929
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	53	672	27	41	938
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1237	350	0	0	699	0
Stage 1	686	-	-	-	-	-
Stage 2	551	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	168	646	-	-	893	-
Stage 1	461	-	-	-	-	-
Stage 2	541	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	152	646	-	-	893	-
Mov Cap-2 Maneuver	152	-	-	-	-	-
Stage 1	417	-	-	-	-	-
Stage 2	541	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	11.1	0		0.8		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	646	893	-	
HCM Lane V/C Ratio	-	-	0.081	0.046	-	
HCM Control Delay (s)	-	-	11.1	9.2	0.4	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-	

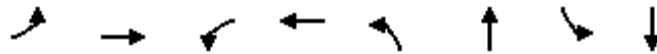
Existing Plus Project
PM Peak Hour

Synchro 10 Report
Ganddini Associates, Inc.

Queues

2: White Ave & Mission Blvd

888 West Mission Blvd



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	68	889	46	1066	209	892	108	709
v/c Ratio	0.70	0.70	0.39	0.83	0.83	0.74	0.74	0.81
Control Delay	52.5	15.8	14.4	12.4	56.7	25.2	62.6	32.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.5	15.8	14.4	12.4	56.7	25.2	62.6	32.3
Queue Length 50th (ft)	26	172	6	73	88	180	46	143
Queue Length 95th (ft)	m#76	236	m17	#123	#194	#260	#123	#231
Internal Link Dist (ft)		1241		81		105		579
Turn Bay Length (ft)								
Base Capacity (vph)	97	1279	119	1280	260	1200	146	873
Starvation Cap Reductn	0	0	0	0	0	0	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	0.70	0.70	0.39	0.83	0.80	0.74	0.74	0.81

Intersection Summary

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

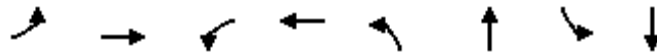
Queue shown is maximum after two cycles.

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

Queues

2: White Ave & Mission Blvd

888 West Mission Blvd



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	93	917	63	759	113	605	107	880
v/c Ratio	0.59	0.74	0.55	0.61	0.78	0.53	0.74	0.77
Control Delay	23.0	10.8	31.3	12.0	64.8	18.5	59.3	24.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.0	10.8	31.3	12.0	64.8	18.5	59.3	24.7
Queue Length 50th (ft)	5	20	13	87	41	93	39	152
Queue Length 95th (ft)	m#71	24	m#67	69	#117	140	#111	#251
Internal Link Dist (ft)		1241		81		105		579
Turn Bay Length (ft)								
Base Capacity (vph)	158	1246	115	1247	145	1140	145	1139
Starvation Cap Reductn	0	0	0	0	0	0	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	0.59	0.74	0.55	0.61	0.78	0.53	0.74	0.77

Intersection Summary

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

Queue shown is maximum after two cycles.

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

Opening Year (2018) With Project

HCM 6th Signalized Intersection Summary

1: Hamilton Blvd & Mission Blvd

888 West Mission Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	738	65	51	1092	51	100	195	86	81	135	95
Future Volume (veh/h)	60	738	65	51	1092	51	100	195	86	81	135	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	1.00		0.95	1.00		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	67	829	73	57	1227	57	112	219	97	91	152	107
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	279	1889	166	358	1978	92	139	298	126	113	204	161
Arrive On Green	0.60	0.60	0.60	0.80	0.80	0.80	0.09	0.13	0.13	0.07	0.12	0.12
Sat Flow, veh/h	384	3123	275	551	3269	152	1594	2265	958	1594	1772	1394
Grp Volume(v), veh/h	67	447	455	57	631	653	112	160	156	91	152	107
Grp Sat Flow(s),veh/h/ln	384	1683	1715	551	1683	1738	1594	1683	1540	1594	1772	1394
Q Serve(g_s), s	8.0	10.0	10.0	3.2	10.2	10.3	4.8	6.4	6.8	3.9	5.8	5.1
Cycle Q Clear(g_c), s	18.3	10.0	10.0	13.2	10.2	10.3	4.8	6.4	6.8	3.9	5.8	5.1
Prop In Lane	1.00		0.16	1.00		0.09	1.00		0.62	1.00		1.00
Lane Grp Cap(c), veh/h	279	1018	1037	358	1018	1051	139	222	203	113	204	161
V/C Ratio(X)	0.24	0.44	0.44	0.16	0.62	0.62	0.81	0.72	0.77	0.81	0.74	0.67
Avail Cap(c_a), veh/h	279	1018	1037	358	1018	1051	194	262	240	162	240	189
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.41	0.41	0.41	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.4	7.4	7.4	6.2	3.7	3.7	31.4	29.2	29.4	32.1	30.0	29.7
Incr Delay (d2), s/veh	2.0	1.4	1.3	0.4	1.2	1.1	15.7	7.8	12.0	17.6	10.0	6.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	3.3	3.4	0.3	2.2	2.2	2.4	3.0	3.1	2.0	2.9	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.5	8.8	8.8	6.6	4.9	4.9	47.1	37.0	41.3	49.7	40.0	36.5
LnGrp LOS	B	A	A	A	A	A	D	D	D	D	D	D
Approach Vol, veh/h		969			1341			428			350	
Approach Delay, s/veh		9.2			4.9			41.2			41.4	
Approach LOS		A			A			D			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		46.8	9.4	13.7		46.8	10.6	12.6				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		38.5	7.1	10.9		38.5	8.5	9.5				
Max Q Clear Time (g_c+I1), s		20.3	5.9	8.8		15.2	6.8	7.8				
Green Ext Time (p_c), s		6.8	0.0	0.4		10.6	0.0	0.2				
Intersection Summary												
HCM 6th Ctrl Delay			15.4									
HCM 6th LOS			B									

Opening Year With Project
AM Peak Hour

Synchro 10 Report
Ganddini Associates, Inc.

HCM 6th Signalized Intersection Summary

2: White Ave & Mission Blvd

888 West Mission Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	717	113	50	885	110	194	775	55	100	540	125
Future Volume (veh/h)	65	717	113	50	885	110	194	775	55	100	540	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.96	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	71	788	124	55	973	121	213	852	60	110	593	137
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	194	1142	180	207	1182	147	249	1045	74	136	691	159
Arrive On Green	0.52	0.52	0.52	0.79	0.79	0.79	0.16	0.33	0.33	0.09	0.26	0.26
Sat Flow, veh/h	461	2902	457	547	3003	373	1594	3180	224	1594	2688	619
Grp Volume(v), veh/h	71	457	455	55	545	549	213	451	461	110	371	359
Grp Sat Flow(s),veh/h/ln	461	1683	1676	547	1683	1693	1594	1683	1721	1594	1683	1623
Q Serve(g_s), s	10.0	14.2	14.2	5.4	13.7	13.7	9.1	17.2	17.2	4.7	14.7	14.8
Cycle Q Clear(g_c), s	23.7	14.2	14.2	19.6	13.7	13.7	9.1	17.2	17.2	4.7	14.7	14.8
Prop In Lane	1.00		0.27	1.00		0.22	1.00		0.13	1.00		0.38
Lane Grp Cap(c), veh/h	194	662	659	207	662	666	249	553	566	136	433	417
V/C Ratio(X)	0.37	0.69	0.69	0.27	0.82	0.82	0.85	0.82	0.82	0.81	0.86	0.86
Avail Cap(c_a), veh/h	194	662	659	207	662	666	262	553	566	148	433	417
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.2	13.5	13.5	12.1	6.0	6.0	28.7	21.5	21.5	31.5	24.8	24.8
Incr Delay (d2), s/veh	4.7	5.1	5.2	3.1	11.1	11.1	22.3	12.5	12.2	26.1	19.1	20.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	5.0	5.0	0.6	4.0	4.0	4.9	8.2	8.3	2.7	7.8	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.8	18.6	18.7	15.2	17.1	17.1	51.0	34.0	33.8	57.6	43.9	45.0
LnGrp LOS	C	B	B	B	B	B	D	C	C	E	D	D
Approach Vol, veh/h	983			1149			1125			840		
Approach Delay, s/veh	19.2			17.0			37.1			46.2		
Approach LOS	B			B			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.5	27.5		32.0	15.5	22.5		32.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	23.0	23.0		27.0	11.5	18.0		27.0				
Max Q Clear Time (g_c+I), s	19.2	19.2		25.7	11.1	16.8		21.6				
Green Ext Time (p_c), s	0.0	2.0		0.8	0.0	0.6		3.3				
Intersection Summary												
HCM 6th Ctrl Delay	29.0											
HCM 6th LOS	C											

Opening Year With Project
AM Peak Hour

Synchro 10 Report
Ganddini Associates, Inc.

HCM 6th Signalized Intersection Summary

3: Park Ave & Mission Blvd

888 West Mission Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	643	170	50	990	30	70	175	65	25	135	40
Future Volume (veh/h)	80	643	170	50	990	30	70	175	65	25	135	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.99	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	89	714	189	56	1100	33	78	194	72	28	150	44
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	397	1735	459	441	2215	66	244	367	306	211	367	301
Arrive On Green	0.88	0.88	0.88	1.00	1.00	1.00	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	443	2611	691	551	3333	100	1054	1772	1480	989	1772	1456
Grp Volume(v), veh/h	89	460	443	56	555	578	78	194	72	28	150	44
Grp Sat Flow(s),veh/h/ln	443	1683	1619	551	1683	1750	1054	1772	1480	989	1772	1456
Q Serve(g_s), s	2.2	3.5	3.5	0.6	0.0	0.0	4.8	6.8	2.8	1.8	5.1	1.7
Cycle Q Clear(g_c), s	2.2	3.5	3.5	4.1	0.0	0.0	10.0	6.8	2.8	8.6	5.1	1.7
Prop In Lane	1.00		0.43	1.00		0.06	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	397	1118	1076	441	1118	1163	244	367	306	211	367	301
V/C Ratio(X)	0.22	0.41	0.41	0.13	0.50	0.50	0.32	0.53	0.24	0.13	0.41	0.15
Avail Cap(c_a), veh/h	397	1118	1076	441	1118	1163	297	456	381	261	456	374
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.25	0.25	0.25	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	1.5	1.6	1.6	0.2	0.0	0.0	28.4	24.7	23.1	28.6	24.0	22.7
Incr Delay (d2), s/veh	1.3	1.1	1.2	0.1	0.4	0.4	0.7	1.2	0.4	0.3	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.0	1.0	0.0	0.1	0.1	1.2	2.9	1.0	0.4	2.1	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.8	2.7	2.7	0.3	0.4	0.4	29.1	25.9	23.5	28.8	24.8	22.9
LnGrp LOS	A	A	A	A	A	A	C	C	C	C	C	C
Approach Vol, veh/h	992			1189			344			222		
Approach Delay, s/veh	2.7			0.4			26.1			24.9		
Approach LOS	A			A			C			C		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	19.0			51.0			19.0			51.0		
Change Period (Y+Rc), s	4.5			4.5			4.5			4.5		
Max Green Setting (Gmax), s	18.0			43.0			18.0			43.0		
Max Q Clear Time (g_c+I1), s	13.0			6.5			11.6			7.1		
Green Ext Time (p_c), s	0.7			9.1			0.5			10.5		

Intersection Summary

HCM 6th Ctrl Delay	6.4
HCM 6th LOS	A

Opening Year With Project
AM Peak Hour

Synchro 10 Report
Ganddini Associates, Inc.

HCM 6th Signalized Intersection Summary

4: Garvey Ave & Mission Blvd

888 West Mission Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	472	132	80	853	115	143	550	95	60	415	89
Future Volume (veh/h)	129	472	132	80	853	115	143	550	95	60	415	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	132	482	135	82	870	117	146	561	97	61	423	91
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	146	759	211	148	878	118	157	1031	440	79	866	370
Arrive On Green	0.03	0.10	0.10	0.09	0.30	0.30	0.10	0.31	0.31	0.05	0.26	0.26
Sat Flow, veh/h	1594	2579	717	1594	2969	399	1594	3367	1439	1594	3367	1438
Grp Volume(v), veh/h	132	313	304	82	493	494	146	561	97	61	423	91
Grp Sat Flow(s),veh/h/ln	1594	1683	1613	1594	1683	1684	1594	1683	1439	1594	1683	1438
Q Serve(g_s), s	5.8	12.5	12.7	3.4	20.4	20.4	6.4	9.7	2.4	2.6	7.5	2.5
Cycle Q Clear(g_c), s	5.8	12.5	12.7	3.4	20.4	20.4	6.4	9.7	2.4	2.6	7.5	2.5
Prop In Lane	1.00		0.44	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	146	495	475	148	498	498	157	1031	440	79	866	370
V/C Ratio(X)	0.91	0.63	0.64	0.55	0.99	0.99	0.93	0.54	0.22	0.77	0.49	0.25
Avail Cap(c_a), veh/h	146	495	475	148	498	498	157	1031	440	116	866	370
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.6	28.0	28.0	30.4	24.6	24.6	31.3	20.2	8.4	32.9	22.1	10.2
Incr Delay (d2), s/veh	45.5	5.6	6.0	4.4	38.2	38.2	51.3	2.1	1.2	16.9	2.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	6.3	6.2	1.5	12.8	12.8	4.6	3.9	1.2	1.4	3.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.1	33.6	34.1	34.8	62.8	62.7	82.6	22.3	9.5	49.8	24.1	11.8
LnGrp LOS	E	C	C	C	E	E	F	C	A	D	C	B
Approach Vol, veh/h	749			1069			804			575		
Approach Delay, s/veh	41.8			60.6			31.7			24.8		
Approach LOS	D			E			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	25.9	11.0	25.1	11.4	22.5	10.9	25.2				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.1	19.8	6.5	20.6	6.9	18.0	6.4	20.7				
Max Q Clear Time (g_c+1.6	14.6	11.7	5.4	14.7	8.4	9.5	7.8	22.4				
Green Ext Time (p_c), s	0.0	2.6	0.0	1.9	0.0	2.0	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	42.5
HCM 6th LOS	D

Opening Year With Project
AM Peak Hour

Synchro 10 Report
Ganddini Associates, Inc.

HCM 6th TWSC
5: Project Dwy & Mission Blvd

888 West Mission Blvd

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↖	
Traffic Vol, veh/h	860	14	36	1045	0	34
Future Vol, veh/h	860	14	36	1045	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	956	16	40	1161	0	38
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	972	0	1625	486
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	661	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	705	-	93	527
Stage 1	-	-	-	-	331	-
Stage 2	-	-	-	-	475	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	705	-	88	527
Mov Cap-2 Maneuver	-	-	-	-	88	-
Stage 1	-	-	-	-	312	-
Stage 2	-	-	-	-	475	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.3		12.4	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	527	-	-	705	-	
HCM Lane V/C Ratio	0.072	-	-	0.057	-	
HCM Control Delay (s)	12.4	-	-	10.4	-	
HCM Lane LOS	B	-	-	B	-	
HCM 95th %tile Q(veh)	0.2	-	-	0.2	-	

Opening Year With Project
AM Peak Hour

Synchro 10 Report
Ganddini Associates, Inc.

HCM 6th TWSC
6: Cypress Ave & Project Dwy

888 West Mission Blvd

Intersection						
Int Delay, s/veh	2.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	0	0	6	10	14
Future Vol, veh/h	13	0	0	6	10	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	60	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	0	0	10	17	23
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	39	29	40	0	-	0
Stage 1	29	-	-	-	-	-
Stage 2	10	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	973	1046	1570	-	-	-
Stage 1	994	-	-	-	-	-
Stage 2	1013	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	973	1046	1570	-	-	-
Mov Cap-2 Maneuver	973	-	-	-	-	-
Stage 1	994	-	-	-	-	-
Stage 2	1013	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.8	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1570	-	973	-	-	
HCM Lane V/C Ratio	-	-	0.022	-	-	
HCM Control Delay (s)	0	-	8.8	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

Opening Year With Project
AM Peak Hour

Synchro 10 Report
Ganddini Associates, Inc.

Intersection						
Int Delay, s/veh	5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	11	17	0	0	34
Future Vol, veh/h	7	11	17	0	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	60	60	60	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	18	28	0	0	57
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	28	0	-	0	70	28
Stage 1	-	-	-	-	28	-
Stage 2	-	-	-	-	42	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1585	-	-	-	934	1047
Stage 1	-	-	-	-	995	-
Stage 2	-	-	-	-	980	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1585	-	-	-	927	1047
Mov Cap-2 Maneuver	-	-	-	-	927	-
Stage 1	-	-	-	-	987	-
Stage 2	-	-	-	-	980	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.8	0		8.6		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1585	-	-	-	-	1047
HCM Lane V/C Ratio	0.007	-	-	-	-	0.054
HCM Control Delay (s)	7.3	0	-	-	-	8.6
HCM Lane LOS	A	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-	0.2

HCM 6th TWSC
8: White Ave & Project Dwy

888 West Mission Blvd

Intersection

Int Delay, s/veh 0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	55	975	29	42	665
Future Vol, veh/h	0	55	975	29	42	665
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	60	1071	32	46	731

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1545	552	0
Stage 1	1087	-	-
Stage 2	458	-	-
Critical Hdwy	6.84	6.94	-
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	105	477	-
Stage 1	285	-	-
Stage 2	604	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	92	477	-
Mov Cap-2 Maneuver	92	-	-
Stage 1	250	-	-
Stage 2	604	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.6	0	1.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	477	629
HCM Lane V/C Ratio	-	-	0.127	0.073
HCM Control Delay (s)	-	-	13.6	11.2
HCM Lane LOS	-	-	B	B
HCM 95th %tile Q(veh)	-	-	0.4	0.2

Opening Year With Project
AM Peak Hour

Synchro 10 Report
Ganddini Associates, Inc.

HCM 6th Signalized Intersection Summary

1: Hamilton Blvd & Mission Blvd

888 West Mission Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	887	70	51	736	66	50	115	46	76	225	105
Future Volume (veh/h)	80	887	70	51	736	66	50	115	46	76	225	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.94	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	83	924	73	53	767	69	52	120	48	79	234	109
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	424	1577	125	279	1556	140	79	219	82	199	298	242
Arrive On Green	0.50	0.50	0.54	1.00	1.00	1.00	0.05	0.09	0.09	0.13	0.17	0.17
Sat Flow, veh/h	586	3155	249	505	3113	280	1594	2347	879	1594	1772	1439
Grp Volume(v), veh/h	83	493	504	53	415	421	52	84	84	79	234	109
Grp Sat Flow(s),veh/h/ln	586	1683	1721	505	1683	1710	1594	1683	1543	1594	1772	1439
Q Serve(g_s), s	4.5	11.4	11.3	3.0	0.0	0.0	1.8	2.6	2.9	2.5	7.0	3.7
Cycle Q Clear(g_c), s	4.5	11.4	11.3	14.4	0.0	0.0	1.8	2.6	2.9	2.5	7.0	3.7
Prop In Lane	1.00		0.14	1.00		0.16	1.00		0.57	1.00		1.00
Lane Grp Cap(c), veh/h	424	841	860	279	841	855	79	157	144	199	298	242
V/C Ratio(X)	0.20	0.59	0.59	0.19	0.49	0.49	0.65	0.53	0.59	0.40	0.78	0.45
Avail Cap(c_a), veh/h	424	841	860	279	841	855	145	254	233	214	345	280
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.63	0.63	0.63	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.0	9.7	9.6	3.0	0.0	0.0	25.7	23.8	23.9	22.1	21.9	20.6
Incr Delay (d2), s/veh	1.0	3.0	2.9	1.0	1.3	1.3	8.8	2.8	3.7	1.3	9.9	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	4.0	4.0	0.1	0.3	0.3	0.8	1.1	1.1	0.9	3.5	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.0	12.7	12.5	3.9	1.3	1.3	34.5	26.6	27.7	23.4	31.8	21.9
LnGrp LOS	A	B	B	A	A	A	C	C	C	C	C	C
Approach Vol, veh/h	1080				889				220			
Approach Delay, s/veh	12.3				1.5				28.9			
Approach LOS	B				A				C			
Timer - Assigned Phs	2			3		4		6		7		8
Phs Duration (G+Y+Rc), s	34.0			11.4		9.6		34.0		7.2		13.8
Change Period (Y+Rc), s	4.5			4.5		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s	25.8			7.4		8.3		25.8		5.0		10.7
Max Q Clear Time (g_c+I1), s	13.4			4.5		4.9		16.4		3.8		9.0
Green Ext Time (p_c), s	5.8			0.0		0.2		4.0		0.0		0.3
Intersection Summary												
HCM 6th Ctrl Delay	12.5											
HCM 6th LOS	B											

Opening Year With Project
PM Peak Hour

Synchro 10 Report
Ganddini Associates, Inc.

HCM 6th Signalized Intersection Summary

2: White Ave & Mission Blvd

888 West Mission Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	817	112	65	655	115	118	573	40	110	815	80
Future Volume (veh/h)	95	817	112	65	655	115	118	573	40	110	815	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	1.00		0.96	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	96	825	113	66	662	116	119	579	40	111	823	81
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	249	993	136	199	955	167	146	1051	72	143	1011	99
Arrive On Green	0.67	0.67	0.67	0.67	0.67	0.67	0.09	0.33	0.33	0.09	0.33	0.33
Sat Flow, veh/h	617	2959	405	532	2846	498	1594	3193	220	1594	3089	304
Grp Volume(v), veh/h	96	469	469	66	391	387	119	305	314	111	449	455
Grp Sat Flow(s),veh/h/ln	617	1683	1681	532	1683	1660	1594	1683	1730	1594	1683	1709
Q Serve(g_s), s	7.6	11.4	11.4	6.7	7.9	7.9	4.0	8.2	8.2	3.7	13.4	13.4
Cycle Q Clear(g_c), s	15.5	11.4	11.4	18.2	7.9	7.9	4.0	8.2	8.2	3.7	13.4	13.4
Prop In Lane	1.00		0.24	1.00		0.30	1.00		0.13	1.00		0.18
Lane Grp Cap(c), veh/h	249	565	564	199	565	557	146	554	569	143	551	559
V/C Ratio(X)	0.38	0.83	0.83	0.33	0.69	0.69	0.81	0.55	0.55	0.77	0.81	0.81
Avail Cap(c_a), veh/h	249	565	564	199	565	557	148	554	569	145	551	559
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.80	0.80	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.1	7.9	7.9	14.6	7.3	7.3	24.5	15.1	15.1	24.5	17.0	17.0
Incr Delay (d2), s/veh	3.6	11.0	11.0	4.4	6.8	7.0	27.9	3.9	3.8	22.3	12.5	12.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	3.7	3.7	0.7	2.7	2.7	2.5	3.3	3.4	2.2	6.4	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.7	18.9	18.9	19.1	14.2	14.3	52.4	19.0	18.9	46.8	29.4	29.3
LnGrp LOS	B	B	B	B	B	B	D	B	B	D	C	C
Approach Vol, veh/h	1034			844			738			1015		
Approach Delay, s/veh	18.6			14.6			24.4			31.2		
Approach LOS	B			B			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	22.6		22.9	9.6	22.5		22.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	18.1	18.1		18.4	5.1	18.0		18.4				
Max Q Clear Time (g_c+I), s	10.2	10.2		17.5	6.0	15.4		20.2				
Green Ext Time (p_c), s	0.0	2.3		0.6	0.0	1.4		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	22.4											
HCM 6th LOS	C											

Opening Year With Project
PM Peak Hour

Synchro 10 Report
Ganddini Associates, Inc.

HCM 6th Signalized Intersection Summary

3: Park Ave & Mission Blvd

888 West Mission Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	875	45	70	728	40	175	165	65	50	165	70
Future Volume (veh/h)	45	875	45	70	728	40	175	165	65	50	165	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	0.99		0.97	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	48	941	48	75	783	43	188	177	70	54	177	75
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	319	1571	80	364	1563	86	372	562	461	373	562	462
Arrive On Green	0.97	0.97	1.00	0.48	0.48	0.52	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	592	3252	166	507	3236	178	998	1772	1455	1002	1772	1456
Grp Volume(v), veh/h	48	487	502	75	407	419	188	177	70	54	177	75
Grp Sat Flow(s),veh/h/ln	592	1683	1734	507	1683	1731	998	1772	1455	1002	1772	1456
Q Serve(g_s), s	1.9	1.3	1.2	5.2	9.1	9.0	9.7	4.2	1.9	2.4	4.2	2.0
Cycle Q Clear(g_c), s	11.0	1.3	1.2	6.4	9.1	9.0	13.9	4.2	1.9	6.5	4.2	2.0
Prop In Lane	1.00		0.10	1.00		0.10	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	319	813	838	364	813	836	372	562	461	373	562	462
V/C Ratio(X)	0.15	0.60	0.60	0.21	0.50	0.50	0.51	0.32	0.15	0.14	0.32	0.16
Avail Cap(c_a), veh/h	319	813	838	364	813	836	391	596	489	392	596	490
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.78	0.78	0.78	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	2.6	0.5	0.5	9.4	9.7	9.6	19.5	14.3	13.5	16.7	14.3	13.5
Incr Delay (d2), s/veh	1.0	3.3	3.2	1.0	1.7	1.7	1.1	0.3	0.2	0.2	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.9	0.6	3.1	3.1	2.1	1.5	0.6	0.5	1.5	0.6	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.6	3.8	3.6	10.4	11.4	11.3	20.6	14.6	13.6	16.9	14.6	13.7
LnGrp LOS	A	A	A	B	B	B	C	B	B	B	B	B
Approach Vol, veh/h	1037			901			435			306		
Approach Delay, s/veh	3.7			11.3			17.0			14.8		
Approach LOS	A			B			B			B		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	21.9			33.1			21.9			33.1		
Change Period (Y+Rc), s	4.5			4.5			4.5			4.5		
Max Green Setting (Gmax), s	18.5			27.5			18.5			27.5		
Max Q Clear Time (g_c+I1), s	16.9			14.0			9.5			12.1		
Green Ext Time (p_c), s	0.4			5.8			1.0			5.5		

Intersection Summary

HCM 6th Ctrl Delay	9.7
HCM 6th LOS	A

HCM 6th Signalized Intersection Summary

4: Garvey Ave & Mission Blvd

888 West Mission Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	736	161	155	562	95	162	640	135	105	630	104
Future Volume (veh/h)	153	736	161	155	562	95	162	640	135	105	630	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	156	751	164	158	573	97	165	653	138	107	643	106
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	179	999	218	184	1057	178	199	921	396	130	774	332
Arrive On Green	0.22	0.73	0.73	0.12	0.37	0.37	0.13	0.27	0.27	0.08	0.23	0.23
Sat Flow, veh/h	1594	2731	596	1594	2866	483	1594	3367	1447	1594	3367	1444
Grp Volume(v), veh/h	156	463	452	158	336	334	165	653	138	107	643	106
Grp Sat Flow(s),veh/h/ln	1594	1683	1643	1594	1683	1666	1594	1683	1447	1594	1683	1444
Q Serve(g_s), s	10.4	18.0	18.0	10.7	17.3	17.4	11.1	19.2	6.1	7.3	20.0	5.0
Cycle Q Clear(g_c), s	10.4	18.0	18.0	10.7	17.3	17.4	11.1	19.2	6.1	7.3	20.0	5.0
Prop In Lane	1.00		0.36	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	179	616	601	184	621	614	199	921	396	130	774	332
V/C Ratio(X)	0.87	0.75	0.75	0.86	0.54	0.54	0.83	0.71	0.35	0.82	0.83	0.32
Avail Cap(c_a), veh/h	219	616	601	222	621	614	227	921	396	158	774	332
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.9	11.8	11.8	47.8	27.4	27.4	47.0	36.0	17.0	49.8	40.3	19.7
Incr Delay (d2), s/veh	22.7	7.1	7.2	23.8	3.4	3.4	19.7	4.6	2.4	24.6	10.1	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	4.9	4.8	5.4	7.5	7.4	5.5	8.4	3.1	3.8	9.3	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.6	18.8	19.0	71.5	30.7	30.8	66.7	40.6	19.4	74.4	50.4	22.2
LnGrp LOS	E	B	B	E	C	C	E	D	B	E	D	C
Approach Vol, veh/h	1071					828		956		856		
Approach Delay, s/veh	25.6					38.6		42.0		49.9		
Approach LOS	C					D		D		D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	33.5	34.6	17.2	44.7	18.3	29.8	16.9	45.1				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	10.9	30.1	15.3	35.7	15.7	25.3	15.1	35.9				
Max Q Clear Time (g_c+I), s	19.3	21.2	12.7	20.0	13.1	22.0	12.4	19.4				
Green Ext Time (p_c), s	0.0	3.3	0.1	5.5	0.1	1.5	0.1	3.9				

Intersection Summary

HCM 6th Ctrl Delay	38.3
HCM 6th LOS	D

HCM 6th TWSC
5: Project Dwy & Mission Blvd

888 West Mission Blvd

Intersection

Int Delay, s/veh 0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	
Traffic Vol, veh/h	955	14	34	894	0	33
Future Vol, veh/h	955	14	34	894	0	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1016	15	36	951	0	35

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1031
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.22
Pot Cap-1 Maneuver	-	-	670
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	670
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	12.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	504	-	-	670	-
HCM Lane V/C Ratio	0.07	-	-	0.054	-
HCM Control Delay (s)	12.7	-	-	10.7	-
HCM Lane LOS	B	-	-	B	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	-

Opening Year With Project
PM Peak Hour

Synchro 10 Report
Ganddini Associates, Inc.

HCM 6th TWSC
6: Cypress Ave & Project Dwy

888 West Mission Blvd

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	0	0	13	10	13
Future Vol, veh/h	12	0	0	13	10	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	0	0	15	12	15
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	35	20	27	0	-	0
Stage 1	20	-	-	-	-	-
Stage 2	15	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	978	1058	1587	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	1008	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	978	1058	1587	-	-	-
Mov Cap-2 Maneuver	978	-	-	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	1008	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.7	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1587	-	978	-	-	
HCM Lane V/C Ratio	-	-	0.014	-	-	
HCM Control Delay (s)	0	-	8.7	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

Opening Year With Project
PM Peak Hour

Synchro 10 Report
Ganddini Associates, Inc.

Intersection						
Int Delay, s/veh	3.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	29	15	0	0	31
Future Vol, veh/h	7	29	15	0	0	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	34	17	0	0	36
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	17	0	-	0	67	17
Stage 1	-	-	-	-	17	-
Stage 2	-	-	-	-	50	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1600	-	-	-	938	1062
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	972	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1600	-	-	-	933	1062
Mov Cap-2 Maneuver	-	-	-	-	933	-
Stage 1	-	-	-	-	1001	-
Stage 2	-	-	-	-	972	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.4	0		8.5		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1600	-	-	-	1062	
HCM Lane V/C Ratio	0.005	-	-	-	0.034	
HCM Control Delay (s)	7.3	0	-	-	8.5	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

HCM 6th TWSC
8: White Ave & Project Dwy

888 West Mission Blvd

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	52	685	27	41	955
Future Vol, veh/h	0	52	685	27	41	955
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	53	692	27	41	965
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1271	360	0	0	719	0
Stage 1	706	-	-	-	-	-
Stage 2	565	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	160	637	-	-	878	-
Stage 1	450	-	-	-	-	-
Stage 2	532	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	144	637	-	-	878	-
Mov Cap-2 Maneuver	144	-	-	-	-	-
Stage 1	405	-	-	-	-	-
Stage 2	532	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	11.2	0		0.8		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	637	878	-	
HCM Lane V/C Ratio	-	-	0.082	0.047	-	
HCM Control Delay (s)	-	-	11.2	9.3	0.4	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-	

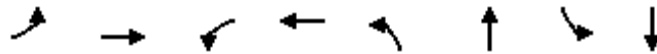
Opening Year With Project
PM Peak Hour

Synchro 10 Report
Ganddini Associates, Inc.

Queues

2: White Ave & Mission Blvd

888 West Mission Blvd



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	71	912	55	1094	213	912	110	730
v/c Ratio	0.73	0.71	0.49	0.85	0.84	0.76	0.75	0.84
Control Delay	55.1	15.1	22.4	14.3	58.1	25.9	64.2	34.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.1	15.1	22.4	14.3	58.1	25.9	64.2	34.0
Queue Length 50th (ft)	27	178	8	78	90	186	47	149
Queue Length 95th (ft)	m#68	244	m20	#141	#199	#285	#126	#242
Internal Link Dist (ft)		1241		81		105		579
Turn Bay Length (ft)								
Base Capacity (vph)	97	1279	112	1280	260	1200	146	870
Starvation Cap Reductn	0	0	0	0	0	0	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	0.73	0.71	0.49	0.85	0.82	0.76	0.75	0.84

Intersection Summary

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

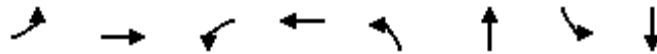
Queue shown is maximum after two cycles.

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

Queues

2: White Ave & Mission Blvd

888 West Mission Blvd



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	96	938	66	778	119	619	111	904
v/c Ratio	0.76	0.84	0.52	0.70	0.82	0.51	0.78	0.75
Control Delay	45.7	16.4	25.1	13.7	68.3	16.0	63.3	21.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.7	16.4	25.1	13.7	68.3	16.0	63.3	21.4
Queue Length 50th (ft)	8	36	10	63	39	83	37	137
Queue Length 95th (ft)	m#69	#81	m#41	120	#117	127	#109	#232
Internal Link Dist (ft)		1241		81		105		579
Turn Bay Length (ft)								
Base Capacity (vph)	127	1115	127	1117	146	1214	143	1209
Starvation Cap Reductn	0	0	0	0	0	0	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	0.76	0.84	0.52	0.70	0.82	0.51	0.78	0.75

Intersection Summary

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

Queue shown is maximum after two cycles.

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