



Transportation Impact Analysis Technical Appendix

# 3000 SHATTUCK AVENUE MIXED USE PROJECT

City of Berkeley

Prepared by:  
Abrams Associates  
1875 Olympic Boulevard, Suite 210  
Walnut Creek, CA 94596



April 27, 2018

## Traffic Survey of Existing Gas Station at 3000 Shattuck Ave.

**Location:** Berkeley Gas & Smog

**AM Start Time** 7:00 AM

**PM Start Time** 4:00 PM

**Date:** Tuesday, September 8, 2015

**Collected By:** Laura Walker

15 minute Period starting at:	Into from Ashby	Out onto Ashby	Into from Shattuck	Out onto Shattuck	Total
7:00 AM	1	2	3	2	8
7:15 AM	1	2	3	2	8
7:30 AM	2	3	5	1	11
7:45 AM	1	4	2	2	9
8:00 AM	3	2	3	4	12
8:15 AM	1	4	3	0	8
8:30 AM	3	7	9	5	24
8:45 AM	3	3	4	4	14
Count Total:	15	27	32	20	94

Peak Hour	Into from Ashby	Out onto Ashby	Into from Shattuck	Out onto Shattuck	Total
8:00 AM	3	2	3	4	12
8:15 AM	1	4	3	0	8
8:30 AM	3	7	9	5	24
8:45 AM	3	3	4	4	14
Peak Hour Total:	10	16	19	13	58

Peak Hour Total Inbound: 29

Peak Hour Total Outbound: 29

## Traffic Survey of Existing Gas Station at 3000 Shattuck Ave.

**Location:** Berkeley Gas & Smog  
**AM Start Time** 7:00 AM  
**PM Start Time** 4:00 PM  
**Date:** Tuesday, September 8, 2015  
**Collected By:** Laura Walker

15 minute Period starting at:	Into from Ashby	Out onto Ashby	Into from Shattuck	Out onto Shattuck	Total
4:00 PM	6	4	8	9	27
4:15 PM	4	3	5	6	18
4:30 PM	7	4	2	4	17
4:45 PM	1	2	4	5	12
5:00 PM	4	6	10	7	27
5:15 PM	6	3	5	11	25
5:30 PM	4	4	7	6	21
5:45 PM	1	3	4	4	12
Count Total:	33	29	45	52	159

Peak Hour	Into from Ashby	Out onto Ashby	Into from Shattuck	Out onto Shattuck	Total
4:45 PM	1	2	4	5	12
5:00 PM	4	6	10	7	27
5:15 PM	6	3	5	11	25
5:30 PM	4	4	7	6	21
Peak Hour Total:	15	15	26	29	85

Peak Hour Total Inbound: 41  
 Peak Hour Total Outbound: 44

**Intersection No: 1**

**Location: Shattuck Ave at Ashby Ave**

**AM Start Time 7:00 AM**

**PM Start Time 4:00 PM**

**Date: Wednesday, August 12, 2015**

**Collected By: Laura Walker**

**SHATTUCK AVE AT ASHBY AVE INTERSECTION TURNING MOVEMENT SUMMARY**

1	Counted by: Laura Walker						Date: Wednesday, August 12, 2015						AM
	Shattuck Ave			Shattuck Ave			Ashby Ave			Ashby Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00 AM	12	84	7	18	45	6	6	75	9	4	78	36	380
7:15 AM	19	82	5	20	64	4	5	73	8	5	84	39	408
7:30 AM	13	85	4	30	96	2	6	97	4	7	112	39	495
7:45 AM	15	89	7	28	97	9	6	93	14	6	113	37	514
8:00 AM	14	77	4	21	92	11	4	120	13	9	143	32	540
8:15 AM	13	127	7	42	138	2	4	163	14	7	162	33	712
8:30 AM	11	142	11	48	122	17	10	114	16	4	124	56	675
8:45 AM	24	121	5	33	105	9	2	96	10	6	133	49	593
Total	121	807	50	240	759	60	43	831	88	48	949	321	4317

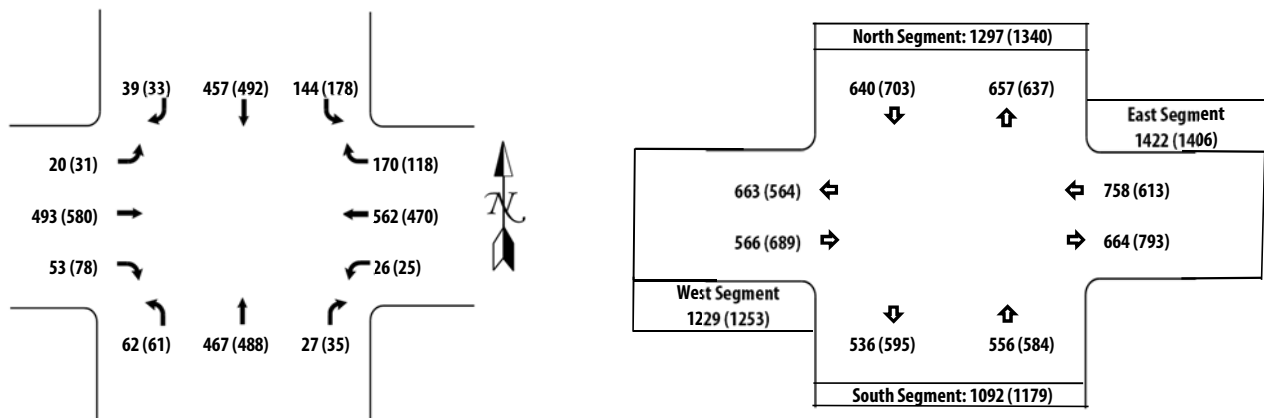
1	Counted by: Laura Walker						Date: Wednesday, August 12, 2015						PM
	Shattuck Ave			Shattuck Ave			Ashby Ave			Ashby Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
4:00 PM	16	102	9	35	104	7	8	128	12	7	114	36	578
4:15 PM	16	85	10	36	118	8	5	123	7	8	103	31	550
4:30 PM	11	94	7	29	119	3	5	124	5	4	136	30	567
4:45 PM	14	103	12	35	126	9	9	141	3	9	105	40	606
5:00 PM	18	115	12	48	122	6	5	126	14	5	124	23	618
5:15 PM	15	118	5	48	135	7	7	145	24	7	127	31	669
5:30 PM	19	131	11	26	122	8	11	158	22	6	125	34	673
5:45 PM	9	124	7	56	113	12	8	151	18	7	94	30	629
Total	118	872	73	313	959	60	58	1096	105	53	928	255	4890

**AM PEAK HOUR VOLUMES**

1	Counted by: Laura Walker						Date: Wednesday, August 12, 2015						AM
	Shattuck Ave			Shattuck Ave			Ashby Ave			Ashby Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
8:00 AM	14	77	4	21	92	11	4	120	13	9	143	32	540
8:15 AM	13	127	7	42	138	2	4	163	14	7	162	33	712
8:30 AM	11	142	11	48	122	17	10	114	16	4	124	56	675
8:45 AM	24	121	5	33	105	9	2	96	10	6	133	49	593
Total	62	467	27	144	457	39	20	493	53	26	562	170	2520

**PM PEAK HOUR VOLUMES**

1	Counted by: Laura Walker						Date: Wednesday, August 12, 2015						PM
	Shattuck Ave			Shattuck Ave			Ashby Ave			Ashby Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
5:00 PM	18	115	12	48	122	6	5	126	14	5	124	23	618
5:15 PM	15	118	5	48	135	7	7	145	24	7	127	31	669
5:30 PM	19	131	11	26	122	8	11	158	22	6	125	34	673
5:45 PM	9	124	7	56	113	12	8	151	18	7	94	30	629
Total	61	488	35	178	492	33	31	580	78	25	470	118	2589



**Intersection No: 3**

**Location:** Shattuck Ave at Emerson St

**AM Start Time** 7:00 AM

**PM Start Time** 4:00 PM

**Date:** Thursday, August 13, 2015

**Collected By:** Laura Walker

**SHATTUCK AVE AT EMERSON ST INTERSECTION TURNING MOVEMENT SUMMARY**

3	Counted by: Laura Walker												Date: Thursday, August 13, 2015				AM
	Shattuck Ave				Shattuck Ave				Emerson St				Emerson St				
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total	
7:00 AM	1	52	0	1	57	0	0	0	2	1	1	0	1	1	0	115	
7:15 AM	1	75	0	0	44	1	1	2	0	0	0	0	0	0	0	124	
7:30 AM	2	91	0	0	70	2	0	0	2	1	0	0	1	0	0	168	
7:45 AM	0	88	0	1	73	0	0	0	1	1	0	0	1	0	0	164	
8:00 AM	1	104	2	0	81	4	1	0	1	0	0	1	0	0	1	195	
8:15 AM	4	131	3	1	93	2	4	2	7	3	0	3	3	0	3	253	
8:30 AM	5	118	0	1	94	7	3	0	3	0	0	5	0	0	5	236	
8:45 AM	2	102	1	4	72	3	0	0	7	4	1	3	4	1	3	199	
Total	16	761	6	8	584	19	9	4	23	10	2	12	10	2	12	1454	

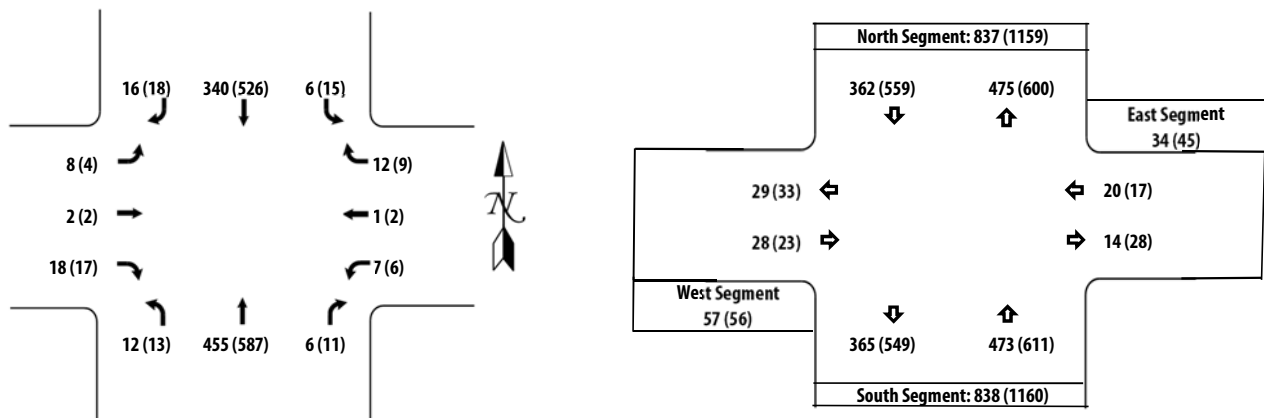
3	Counted by: Laura Walker												Date: Thursday, August 13, 2015				PM
	Shattuck Ave				Shattuck Ave				Emerson St				Emerson St				
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total	
4:00 PM	3	117	1	1	125	5	6	1	6	2	0	1	2	0	1	268	
4:15 PM	2	101	2	2	92	3	0	0	3	0	1	2	0	1	2	208	
4:30 PM	2	119	2	0	137	3	0	0	1	2	0	3	2	0	3	269	
4:45 PM	0	117	1	2	135	6	2	0	3	2	0	2	2	0	2	270	
5:00 PM	3	116	1	4	134	2	2	0	1	3	1	2	3	1	2	269	
5:15 PM	4	148	5	4	135	6	0	0	3	2	0	3	2	0	3	310	
5:30 PM	1	143	1	2	147	5	0	0	7	1	0	0	1	0	0	307	
5:45 PM	5	180	4	5	110	5	2	2	6	0	1	4	2	1	4	324	
Total	20	1041	17	20	1015	35	12	3	30	12	3	17	12	3	17	2225	

**AM PEAK HOUR VOLUMES**

3	Counted by: Laura Walker												Date: Thursday, August 13, 2015				AM
	Shattuck Ave				Shattuck Ave				Emerson St				Emerson St				
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total	
8:00 AM	1	104	2	0	81	4	1	0	1	0	0	1	0	0	1	195	
8:15 AM	4	131	3	1	93	2	4	2	7	3	0	3	3	0	3	253	
8:30 AM	5	118	0	1	94	7	3	0	3	0	0	5	0	0	5	236	
8:45 AM	2	102	1	4	72	3	0	0	7	4	1	3	4	1	3	199	
Total	12	455	6	6	340	16	8	2	18	7	1	12	7	1	12	883	


















**PM PEAK HOUR VOLUMES**

3	Counted by: Laura Walker												Date: Thursday, August 13, 2015				PM
	Shattuck Ave				Shattuck Ave				Emerson St				Emerson St				
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total	
5:00 PM	3	116	1	4	134	2	2	0	1	3	1	2	2	0	2	269	
5:15 PM	4	148	5	4	135	6	0	0	3	2	0	3	2	0	3	310	
5:30 PM	1	143	1	2	147	5	0	0	7	1	0	0	1	0	0	307	
5:45 PM	5	180	4	5	110	5	2	2	6	0	1	4	2	1	4	324	
Total	13	587	11	15	526	18	4	2	17	6	2	9	6	2	9	1210	



HCM 2010 Signalized Intersection Summary  
 1: Shattuck Ave & Ashby Ave

Existing AM  
 4/4/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	493	53	26	562	170	62	467	27	144	457	39
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
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
Adj Sat Flow, veh/h/ln	1710	1676	1710	1710	1676	1676	1710	1676	1710	1710	1676	1710
Adj Flow Rate, veh/h	22	536	58	28	611	185	67	508	29	157	497	42
Adj No. of Lanes	0	2	0	0	1	1	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	56	1186	139	57	778	698	112	917	59	56	602	67
Arrive On Green	0.49	0.49	0.49	0.49	0.49	0.49	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	35	2421	284	39	1588	1425	156	2133	138	2	1400	155
Grp Volume(v), veh/h	315	0	301	639	0	185	288	0	316	290	0	406
Grp Sat Flow(s),veh/h/ln	1265	0	1475	1627	0	1425	926	0	1501	59	0	1499
Q Serve(g_s), s	2.7	0.0	13.1	10.9	0.0	7.6	11.1	0.0	15.2	26.3	0.0	21.2
Cycle Q Clear(g_c), s	35.1	0.0	13.1	32.3	0.0	7.6	32.3	0.0	15.2	26.3	0.0	21.2
Prop In Lane	0.07		0.19	0.04		1.00	0.23		0.09	0.54		0.10
Lane Grp Cap(c), veh/h	658	0	723	835	0	698	443	0	646	0	0	644
V/C Ratio(X)	0.48	0.00	0.42	0.77	0.00	0.26	0.65	0.00	0.49	0.00	0.00	0.63
Avail Cap(c_a), veh/h	658	0	723	835	0	698	443	0	646	0	0	644
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.7	0.0	16.3	21.1	0.0	14.9	25.9	0.0	20.6	0.0	0.0	22.3
Incr Delay (d2), s/veh	2.5	0.0	1.8	6.6	0.0	0.9	7.2	0.0	2.7	0.0	0.0	4.6
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	5.9	0.0	5.6	16.1	0.0	3.2	7.9	0.0	6.7	0.0	0.0	9.5
LnGrp Delay(d),s/veh	19.2	0.0	18.1	27.7	0.0	15.9	33.1	0.0	23.2	0.0	0.0	26.9
LnGrp LOS	B		B	C		B	C		C			C
Approach Vol, veh/h		616			824			604			696	
Approach Delay, s/veh		18.6			25.1			28.0			15.7	
Approach LOS		B			C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.0		53.0		47.0		53.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		35.0		49.0		43.0		49.0				
Max Q Clear Time (g_c+I1), s		34.3		37.1		28.3		34.3				
Green Ext Time (p_c), s		0.5		6.9		7.6		7.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			21.9									
HCM 2010 LOS			C									

**Intersection**

Int Delay, s/veh 1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	8	2	18	7	1	12	12	455	6	6	340	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	2	20	8	1	13	13	495	7	7	370	17


















Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	922	918	378	926	924	498	387	0	0	501	0	0
Stage 1	391	391	-	524	524	-	-	-	-	-	-	-
Stage 2	531	527	-	402	400	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	251	272	669	249	269	572	1171	-	-	1063	-	-
Stage 1	633	607	-	537	530	-	-	-	-	-	-	-
Stage 2	532	528	-	625	602	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	240	266	669	236	263	572	1171	-	-	1063	-	-
Mov Cap-2 Maneuver	240	266	-	236	263	-	-	-	-	-	-	-
Stage 1	624	602	-	529	522	-	-	-	-	-	-	-
Stage 2	511	520	-	600	597	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.4	15.4	0.2	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1171	-	-	413	367	1063	-	-
HCM Lane V/C Ratio	0.011	-	-	0.074	0.059	0.006	-	-
HCM Control Delay (s)	8.1	0	-	14.4	15.4	8.4	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0	-	-

HCM 2010 Signalized Intersection Summary  
 1: Shattuck Ave & Ashby Ave

Existing PM  
 4/4/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	31	580	78	25	470	118	61	488	35	178	492	33
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
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
Adj Sat Flow, veh/h/ln	1710	1676	1710	1710	1676	1676	1710	1676	1710	1710	1676	1710
Adj Flow Rate, veh/h	34	630	85	27	511	128	66	530	38	193	535	36
Adj No. of Lanes	0	2	0	0	1	1	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	61	1005	151	57	689	627	117	1017	82	60	675	57
Arrive On Green	0.44	0.44	0.44	0.44	0.44	0.44	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	50	2283	343	44	1566	1425	152	2120	172	2	1407	119
Grp Volume(v), veh/h	386	0	363	538	0	128	303	0	331	307	0	457
Grp Sat Flow(s),veh/h/ln	1211	0	1465	1609	0	1425	948	0	1495	22	0	1505
Q Serve(g_s), s	3.6	0.0	18.5	7.8	0.0	5.5	10.4	0.0	14.8	30.3	0.0	22.7
Cycle Q Clear(g_c), s	30.9	0.0	18.5	27.3	0.0	5.5	33.1	0.0	14.8	30.3	0.0	22.7
Prop In Lane	0.09		0.23	0.05		1.00	0.22		0.11	0.63		0.08
Lane Grp Cap(c), veh/h	572	0	645	746	0	627	499	0	718	0	0	722
V/C Ratio(X)	0.67	0.00	0.56	0.72	0.00	0.20	0.61	0.00	0.46	0.00	0.00	0.63
Avail Cap(c_a), veh/h	572	0	645	746	0	627	499	0	718	0	0	722
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.1	0.0	20.8	23.2	0.0	17.2	22.1	0.0	17.4	0.0	0.0	19.4
Incr Delay (d2), s/veh	6.3	0.0	3.5	6.0	0.0	0.7	5.4	0.0	2.1	0.0	0.0	4.2
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	8.7	0.0	8.1	13.5	0.0	2.3	7.8	0.0	6.5	0.0	0.0	10.2
LnGrp Delay(d),s/veh	27.4	0.0	24.4	29.1	0.0	18.0	27.6	0.0	19.5	0.0	0.0	23.6
LnGrp LOS	C		C	C		B	C		B			C
Approach Vol, veh/h		749			666			634			764	
Approach Delay, s/veh		25.9			27.0			23.3			14.1	
Approach LOS		C			C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		52.0		48.0		52.0		48.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		40.0		44.0		48.0		44.0				
Max Q Clear Time (g_c+I1), s		35.1		32.9		32.3		29.3				
Green Ext Time (p_c), s		3.5		6.5		8.6		7.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			22.4									
HCM 2010 LOS			C									



**Intersection**

Int Delay, s/veh 0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	4	2	17	6	2	9	13	587	11	15	526	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	2	18	7	2	10	14	638	12	16	572	20


















Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1292	1292	582	1296	1296	644	591	0	0	650	0	0
Stage 1	614	614	-	672	672	-	-	-	-	-	-	-
Stage 2	678	678	-	624	624	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	140	163	513	139	162	473	985	-	-	936	-	-
Stage 1	479	483	-	445	454	-	-	-	-	-	-	-
Stage 2	442	452	-	473	478	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	131	155	513	128	154	473	985	-	-	936	-	-
Mov Cap-2 Maneuver	131	155	-	128	154	-	-	-	-	-	-	-
Stage 1	468	470	-	435	444	-	-	-	-	-	-	-
Stage 2	421	442	-	442	466	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.1	23.3	0.2	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	985	-	-	300	215	936	-	-
HCM Lane V/C Ratio	0.014	-	-	0.083	0.086	0.017	-	-
HCM Control Delay (s)	8.7	0	-	18.1	23.3	8.9	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.3	0.1	-	-

HCM 2010 Signalized Intersection Summary  
 1: Shattuck Ave & Ashby Ave

Existing +Project AM  
 4/4/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	493	57	30	562	170	68	473	32	144	461	39
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
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
Adj Sat Flow, veh/h/ln	1710	1676	1710	1710	1676	1676	1710	1676	1710	1710	1676	1710
Adj Flow Rate, veh/h	22	536	62	33	611	185	74	514	35	157	501	42
Adj No. of Lanes	0	2	0	0	1	1	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	55	1166	148	62	767	698	115	885	69	56	603	66
Arrive On Green	0.49	0.49	0.49	0.49	0.49	0.49	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	33	2380	302	49	1565	1425	164	2058	160	2	1401	154
Grp Volume(v), veh/h	317	0	303	644	0	185	295	0	328	291	0	409
Grp Sat Flow(s),veh/h/ln	1243	0	1472	1614	0	1425	884	0	1497	59	0	1499
Q Serve(g_s), s	3.0	0.0	13.2	13.8	0.0	7.6	13.1	0.0	16.0	26.7	0.0	21.4
Cycle Q Clear(g_c), s	36.1	0.0	13.2	33.2	0.0	7.6	34.5	0.0	16.0	26.7	0.0	21.4
Prop In Lane	0.07		0.20	0.05		1.00	0.25		0.11	0.54		0.10
Lane Grp Cap(c), veh/h	648	0	721	829	0	698	425	0	644	0	0	644
V/C Ratio(X)	0.49	0.00	0.42	0.78	0.00	0.26	0.69	0.00	0.51	0.00	0.00	0.63
Avail Cap(c_a), veh/h	648	0	721	829	0	698	425	0	644	0	0	644
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.8	0.0	16.4	21.3	0.0	14.9	27.4	0.0	20.8	0.0	0.0	22.3
Incr Delay (d2), s/veh	2.6	0.0	1.8	7.1	0.0	0.9	9.0	0.0	2.9	0.0	0.0	4.7
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	5.9	0.0	5.7	16.5	0.0	3.2	8.5	0.0	7.1	0.0	0.0	9.7
LnGrp Delay(d),s/veh	19.4	0.0	18.2	28.3	0.0	15.9	36.4	0.0	23.7	0.0	0.0	27.1
LnGrp LOS	B		B	C		B	D		C			C
Approach Vol, veh/h		620			829			623			700	
Approach Delay, s/veh		18.8			25.5			29.7			15.8	
Approach LOS		B			C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.0		53.0		47.0		53.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		35.0		49.0		43.0		49.0				
Max Q Clear Time (g_c+I1), s		36.5		38.1		28.7		35.2				
Green Ext Time (p_c), s		0.0		6.5		7.6		7.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				22.5								
HCM 2010 LOS				C								

**Intersection**

Int Delay, s/veh 0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	17	8	4	556	536	12
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	9	4	604	583	13

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	900	589	596 0
Stage 1	589	-	- -
Stage 2	311	-	- -
Critical Hdwy	6.63	6.23	4.12 -
Critical Hdwy Stg 1	5.43	-	- -
Critical Hdwy Stg 2	5.83	-	- -
Follow-up Hdwy	3.519	3.319	2.218 -
Pot Cap-1 Maneuver	293	507	980 -
Stage 1	553	-	- -
Stage 2	717	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	291	507	980 -
Mov Cap-2 Maneuver	291	-	- -
Stage 1	553	-	- -
Stage 2	713	-	- -

Approach	EB	NB	SB
HCM Control Delay, s	16.6	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	980	-	337	-	-
HCM Lane V/C Ratio	0.004	-	0.081	-	-
HCM Control Delay (s)	8.7	0	16.6	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

**Intersection**

Int Delay, s/veh 1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	9	2	18	7	1	12	12	458	6	7	345	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	2	20	8	1	13	13	498	7	8	375	20


















Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	934	930	385	938	937	501	395	0	0	504	0	0
Stage 1	400	400	-	527	527	-	-	-	-	-	-	-
Stage 2	534	530	-	411	410	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	246	267	663	244	265	570	1164	-	-	1061	-	-
Stage 1	626	602	-	535	528	-	-	-	-	-	-	-
Stage 2	530	527	-	618	595	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	235	260	663	231	258	570	1164	-	-	1061	-	-
Mov Cap-2 Maneuver	235	260	-	231	258	-	-	-	-	-	-	-
Stage 1	616	596	-	526	520	-	-	-	-	-	-	-
Stage 2	509	519	-	592	589	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.8	15.6	0.2	0.2
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1164	-	-	397	362	1061	-	-
HCM Lane V/C Ratio	0.011	-	-	0.079	0.06	0.007	-	-
HCM Control Delay (s)	8.1	0	-	14.8	15.6	8.4	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	0	-	-

HCM 2010 Signalized Intersection Summary  
 1: Shattuck Ave & Ashby Ave

Existing +Project PM  
 4/4/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	31	580	85	31	470	118	64	492	38	178	499	33
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
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
Adj Sat Flow, veh/h/ln	1710	1676	1710	1710	1676	1676	1710	1676	1710	1710	1676	1710
Adj Flow Rate, veh/h	34	630	92	34	511	128	70	535	41	193	542	36
Adj No. of Lanes	0	2	0	0	1	1	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	56	936	161	62	644	627	119	996	87	59	676	56
Arrive On Green	0.44	0.44	0.44	0.44	0.44	0.44	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	37	2127	366	55	1464	1425	155	2075	181	2	1408	117
Grp Volume(v), veh/h	389	0	367	545	0	128	307	0	339	309	0	462
Grp Sat Flow(s),veh/h/ln	1070	0	1461	1519	0	1425	917	0	1494	22	0	1505
Q Serve(g_s), s	5.2	0.0	18.8	12.7	0.0	5.5	11.7	0.0	15.3	30.8	0.0	23.0
Cycle Q Clear(g_c), s	36.6	0.0	18.8	31.5	0.0	5.5	34.7	0.0	15.3	30.8	0.0	23.0
Prop In Lane	0.09		0.25	0.06		1.00	0.23		0.12	0.62		0.08
Lane Grp Cap(c), veh/h	510	0	643	707	0	627	485	0	717	0	0	722
V/C Ratio(X)	0.76	0.00	0.57	0.77	0.00	0.20	0.63	0.00	0.47	0.00	0.00	0.64
Avail Cap(c_a), veh/h	510	0	643	707	0	627	485	0	717	0	0	722
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.9	0.0	20.9	24.0	0.0	17.2	23.1	0.0	17.5	0.0	0.0	19.5
Incr Delay (d2), s/veh	10.4	0.0	3.7	8.0	0.0	0.7	6.2	0.0	2.2	0.0	0.0	4.3
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	9.3	0.0	8.2	14.6	0.0	2.3	8.2	0.0	6.7	0.0	0.0	10.3
LnGrp Delay(d),s/veh	32.3	0.0	24.6	32.0	0.0	18.0	29.3	0.0	19.7	0.0	0.0	23.8
LnGrp LOS	C		C	C		B	C		B			C
Approach Vol, veh/h		756			673			646			771	
Approach Delay, s/veh		28.5			29.3			24.3			14.2	
Approach LOS		C			C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		52.0		48.0		52.0		48.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		40.0		44.0		48.0		44.0				
Max Q Clear Time (g_c+I1), s		36.7		38.6		32.8		33.5				
Green Ext Time (p_c), s		2.5		3.7		8.6		6.3				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			23.9									
HCM 2010 LOS			C									

**Intersection**

Int Delay, s/veh 0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	10	5	9	584	595	20
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	5	10	635	647	22

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	995	658	668 0
Stage 1	658	-	- -
Stage 2	337	-	- -
Critical Hdwy	6.63	6.23	4.12 -
Critical Hdwy Stg 1	5.43	-	- -
Critical Hdwy Stg 2	5.83	-	- -
Follow-up Hdwy	3.519	3.319	2.218 -
Pot Cap-1 Maneuver	256	463	922 -
Stage 1	514	-	- -
Stage 2	696	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	252	463	922 -
Mov Cap-2 Maneuver	252	-	- -
Stage 1	514	-	- -
Stage 2	684	-	- -

Approach	EB	NB	SB
HCM Control Delay, s	17.8	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	922	-	297	-	-
HCM Lane V/C Ratio	0.011	-	0.055	-	-
HCM Control Delay (s)	8.9	0.1	17.8	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

**Intersection**

Int Delay, s/veh 1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	6	2	17	6	2	10	13	593	11	16	529	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	2	18	7	2	11	14	645	12	17	575	21


















Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1305	1305	585	1309	1309	651	596	0	0	657	0	0
Stage 1	620	620	-	679	679	-	-	-	-	-	-	-
Stage 2	685	685	-	630	630	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	137	160	511	136	159	469	980	-	-	931	-	-
Stage 1	476	480	-	441	451	-	-	-	-	-	-	-
Stage 2	438	448	-	470	475	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	127	152	511	125	151	469	980	-	-	931	-	-
Mov Cap-2 Maneuver	127	152	-	125	151	-	-	-	-	-	-	-
Stage 1	465	467	-	431	441	-	-	-	-	-	-	-
Stage 2	416	438	-	439	462	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20	23.1	0.2	0.3
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	980	-	-	267	218	931	-	-
HCM Lane V/C Ratio	0.014	-	-	0.102	0.09	0.019	-	-
HCM Control Delay (s)	8.7	0	-	20	23.1	8.9	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.3	0.1	-	-

HCM 2010 Signalized Intersection Summary  
 1: Shattuck Ave & Ashby Ave

Background AM  
 4/4/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	22	544	58	29	620	187	68	515	30	159	504	43
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
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
Adj Sat Flow, veh/h/ln	1710	1676	1710	1710	1676	1676	1710	1676	1710	1710	1676	1710
Adj Flow Rate, veh/h	24	591	63	32	674	203	74	560	33	173	548	47
Adj No. of Lanes	0	2	0	0	1	1	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	47	1054	134	58	756	684	105	903	62	57	607	69
Arrive On Green	0.48	0.48	0.48	0.48	0.48	0.48	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	17	2196	279	43	1574	1425	137	2052	141	2	1379	156
Grp Volume(v), veh/h	345	0	333	706	0	203	315	0	352	316	0	452
Grp Sat Flow(s),veh/h/ln	1015	0	1476	1617	0	1425	828	0	1501	38	0	1498
Q Serve(g_s), s	5.5	0.0	15.2	20.6	0.0	8.6	14.7	0.0	17.2	31.5	0.0	24.2
Cycle Q Clear(g_c), s	45.4	0.0	15.2	40.0	0.0	8.6	38.9	0.0	17.2	31.5	0.0	24.2
Prop In Lane	0.07		0.19	0.05		1.00	0.24		0.09	0.55		0.10
Lane Grp Cap(c), veh/h	526	0	709	814	0	684	409	0	660	0	0	659
V/C Ratio(X)	0.66	0.00	0.47	0.87	0.00	0.30	0.77	0.00	0.53	0.00	0.00	0.69
Avail Cap(c_a), veh/h	526	0	709	814	0	684	409	0	660	0	0	659
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.1	0.0	17.5	23.6	0.0	15.8	28.3	0.0	20.5	0.0	0.0	22.5
Incr Delay (d2), s/veh	6.3	0.0	2.2	12.1	0.0	1.1	13.1	0.0	3.1	0.0	0.0	5.7
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	7.1	0.0	6.6	20.6	0.0	3.6	9.7	0.0	7.6	0.0	0.0	11.0
LnGrp Delay(d),s/veh	25.4	0.0	19.7	35.7	0.0	16.9	41.4	0.0	23.6	0.0	0.0	28.2
LnGrp LOS	C		B	D		B	D		C			C
Approach Vol, veh/h		678			909			667			768	
Approach Delay, s/veh		22.6			31.5			32.0			16.6	
Approach LOS		C			C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		48.0		52.0		48.0		52.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		36.0		48.0		44.0		48.0				
Max Q Clear Time (g_c+I1), s		40.9		47.4		33.5		42.0				
Green Ext Time (p_c), s		0.0		0.5		6.7		4.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			25.8									
HCM 2010 LOS			C									



**Intersection**

Int Delay, s/veh 1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	9	2	20	8	1	13	13	502	7	7	375	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	2	22	9	1	14	14	546	8	8	408	20


















Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1018	1015	417	1023	1020	549	427	0	0	553	0	0
Stage 1	433	433	-	578	578	-	-	-	-	-	-	-
Stage 2	585	582	-	445	442	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	216	238	636	214	237	535	1132	-	-	1017	-	-
Stage 1	601	582	-	501	501	-	-	-	-	-	-	-
Stage 2	497	499	-	592	576	-	-	-	-	-	-	-
Platoon blocked, %							-	-	-	-	-	-
Mov Cap-1 Maneuver	205	231	636	201	230	535	1132	-	-	1017	-	-
Mov Cap-2 Maneuver	205	231	-	201	230	-	-	-	-	-	-	-
Stage 1	590	576	-	492	492	-	-	-	-	-	-	-
Stage 2	474	490	-	564	570	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.7	17.1	0.2	0.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1132	-	-	369	321	1017	-
HCM Lane V/C Ratio	0.012	-	-	0.091	0.074	0.007	-
HCM Control Delay (s)	8.2	0	-	15.7	17.1	8.6	0
HCM Lane LOS	A	A	-	C	C	A	A
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	0	-

HCM 2010 Signalized Intersection Summary  
 1: Shattuck Ave & Ashby Ave

Background PM  
 4/4/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	34	639	86	28	518	130	67	538	39	196	542	36
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
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
Adj Sat Flow, veh/h/ln	1710	1676	1710	1710	1676	1676	1710	1676	1710	1710	1676	1710
Adj Flow Rate, veh/h	37	695	93	30	563	141	73	585	42	213	589	39
Adj No. of Lanes	0	2	0	0	1	1	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	44	796	146	55	613	613	109	997	84	60	684	56
Arrive On Green	0.43	0.43	0.43	0.43	0.43	0.43	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	12	1852	339	39	1426	1425	132	2035	170	2	1395	115
Grp Volume(v), veh/h	423	0	402	593	0	141	332	0	368	329	0	512
Grp Sat Flow(s),veh/h/ln	737	0	1466	1464	0	1425	843	0	1496	6	0	1506
Q Serve(g_s), s	3.9	0.0	21.6	17.6	0.0	6.3	14.3	0.0	16.7	37.1	0.0	26.2
Cycle Q Clear(g_c), s	43.0	0.0	21.6	39.1	0.0	6.3	40.6	0.0	16.7	37.1	0.0	26.2
Prop In Lane	0.09		0.23	0.05		1.00	0.22		0.11	0.65		0.08
Lane Grp Cap(c), veh/h	356	0	630	668	0	613	457	0	733	0	0	738
V/C Ratio(X)	1.19	0.00	0.64	0.89	0.00	0.23	0.73	0.00	0.50	0.00	0.00	0.69
Avail Cap(c_a), veh/h	356	0	630	668	0	613	457	0	733	0	0	738
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.4	0.0	22.4	27.0	0.0	18.0	24.7	0.0	17.3	0.0	0.0	19.7
Incr Delay (d2), s/veh	109.1	0.0	4.9	16.2	0.0	0.9	9.7	0.0	2.5	0.0	0.0	5.3
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	17.9	0.0	9.6	18.7	0.0	2.6	9.6	0.0	7.4	0.0	0.0	11.9
LnGrp Delay(d),s/veh	133.5	0.0	27.3	43.2	0.0	18.9	34.4	0.0	19.7	0.0	0.0	25.0
LnGrp LOS	F		C	D		B	C		B			C
Approach Vol, veh/h		825			734			700			841	
Approach Delay, s/veh		81.7			38.5			26.7			15.2	
Approach LOS		F			D			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		53.0		47.0		53.0		47.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		41.0		43.0		49.0		43.0				
Max Q Clear Time (g_c+I1), s		42.6		45.0		39.1		41.1				
Green Ext Time (p_c), s		0.0		0.0		6.8		1.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			41.0									
HCM 2010 LOS			D									

**Intersection**

Int Delay, s/veh 1



















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	4	2	19	7	2	10	14	647	12	17	580	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	2	21	8	2	11	15	703	13	18	630	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1425	1425	641	1430	1429	710	652	0	0	716	0	0
Stage 1	678	678	-	740	740	-	-	-	-	-	-	-
Stage 2	747	747	-	690	689	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	113	136	475	112	135	434	935	-	-	885	-	-
Stage 1	442	452	-	409	423	-	-	-	-	-	-	-
Stage 2	405	420	-	435	446	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	104	128	475	101	127	434	935	-	-	885	-	-
Mov Cap-2 Maneuver	104	128	-	101	127	-	-	-	-	-	-	-
Stage 1	430	438	-	398	412	-	-	-	-	-	-	-
Stage 2	382	409	-	401	432	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.1	28.2	0.2	0.3
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	935	-	-	266	176	885	-	-
HCM Lane V/C Ratio	0.016	-	-	0.102	0.117	0.021	-	-
HCM Control Delay (s)	8.9	0	-	20.1	28.2	9.2	0	-
HCM Lane LOS	A	A	-	C	D	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.4	0.1	-	-

HCM 2010 Signalized Intersection Summary  
 1: Shattuck Ave & Ashby Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	22	544	62	33	620	187	74	521	35	159	508	43
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
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
Adj Sat Flow, veh/h/ln	1710	1676	1710	1710	1676	1676	1710	1676	1710	1710	1676	1710
Adj Flow Rate, veh/h	24	591	67	36	674	203	80	566	38	173	552	47
Adj No. of Lanes	0	2	0	0	1	1	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	48	1075	145	62	763	698	102	850	67	57	593	67
Arrive On Green	0.49	0.49	0.49	0.49	0.49	0.49	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	19	2194	295	50	1557	1425	134	1978	157	2	1378	155
Grp Volume(v), veh/h	347	0	335	710	0	203	321	0	363	317	0	455
Grp Sat Flow(s),veh/h/ln	1034	0	1474	1606	0	1425	770	0	1498	36	0	1499
Q Serve(g_s), s	5.4	0.0	15.0	21.7	0.0	8.5	17.1	0.0	18.2	32.6	0.0	24.9
Cycle Q Clear(g_c), s	45.4	0.0	15.0	40.0	0.0	8.5	41.9	0.0	18.2	32.6	0.0	24.9
Prop In Lane	0.07		0.20	0.05		1.00	0.25		0.10	0.55		0.10
Lane Grp Cap(c), veh/h	545	0	722	825	0	698	376	0	644	0	0	644
V/C Ratio(X)	0.64	0.00	0.46	0.86	0.00	0.29	0.85	0.00	0.56	0.00	0.00	0.71
Avail Cap(c_a), veh/h	545	0	722	825	0	698	376	0	644	0	0	644
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.5	0.0	16.8	22.9	0.0	15.2	31.0	0.0	21.4	0.0	0.0	23.3
Incr Delay (d2), s/veh	5.6	0.0	2.1	11.4	0.0	1.1	21.1	0.0	3.5	0.0	0.0	6.4
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	7.0	0.0	6.5	20.4	0.0	3.5	10.9	0.0	8.1	0.0	0.0	11.4
LnGrp Delay(d),s/veh	24.1	0.0	19.0	34.3	0.0	16.2	52.0	0.0	25.0	0.0	0.0	29.7
LnGrp LOS	C		B	C		B	D		C			C
Approach Vol, veh/h		682			913			684			772	
Approach Delay, s/veh		21.6			30.3			37.7			17.5	
Approach LOS		C			C			D			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.0		53.0		47.0		53.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		35.0		49.0		43.0		49.0				
Max Q Clear Time (g_c+I1), s		43.9		47.4		34.6		42.0				
Green Ext Time (p_c), s		0.0		1.3		5.7		5.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			26.8									
HCM 2010 LOS			C									

**Intersection**

Int Delay, s/veh 0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	17	8	4	613	591	12
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	9	4	666	642	13

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	991	649	655 0
Stage 1	649	-	- -
Stage 2	342	-	- -
Critical Hdwy	6.63	6.23	4.12 -
Critical Hdwy Stg 1	5.43	-	- -
Critical Hdwy Stg 2	5.83	-	- -
Follow-up Hdwy	3.519	3.319	2.218 -
Pot Cap-1 Maneuver	257	469	932 -
Stage 1	519	-	- -
Stage 2	692	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	255	469	932 -
Mov Cap-2 Maneuver	255	-	- -
Stage 1	519	-	- -
Stage 2	687	-	- -

Approach	EB	NB	SB
HCM Control Delay, s	18.2	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	932	-	299	-	-
HCM Lane V/C Ratio	0.005	-	0.091	-	-
HCM Control Delay (s)	8.9	0	18.2	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

**Intersection**

Int Delay, s/veh 1.1


















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	2	20	8	1	13	13	505	7	8	380	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	2	22	9	1	14	14	549	8	9	413	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1030	1026	424	1034	1033	553	435	0	0	557	0	0
Stage 1	441	441	-	581	581	-	-	-	-	-	-	-
Stage 2	589	585	-	453	452	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	212	235	630	210	232	533	1125	-	-	1014	-	-
Stage 1	595	577	-	499	500	-	-	-	-	-	-	-
Stage 2	494	498	-	586	570	-	-	-	-	-	-	-
Platoon blocked, %							-	-	-	-	-	-
Mov Cap-1 Maneuver	201	228	630	197	225	533	1125	-	-	1014	-	-
Mov Cap-2 Maneuver	201	228	-	197	225	-	-	-	-	-	-	-
Stage 1	584	570	-	490	491	-	-	-	-	-	-	-
Stage 2	471	489	-	557	563	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.3	17.3	0.2	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1125	-	-	354	317	1014	-
HCM Lane V/C Ratio	0.013	-	-	0.098	0.075	0.009	-
HCM Control Delay (s)	8.2	0	-	16.3	17.3	8.6	0
HCM Lane LOS	A	A	-	C	C	A	A
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	0	-

HCM 2010 Signalized Intersection Summary  
 1: Shattuck Ave & Ashby Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	34	639	93	34	518	130	70	542	42	196	549	36
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
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
Adj Sat Flow, veh/h/ln	1710	1676	1710	1710	1676	1676	1710	1676	1710	1710	1676	1710
Adj Flow Rate, veh/h	37	695	101	37	563	141	76	589	46	213	597	39
Adj No. of Lanes	0	2	0	0	1	1	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	40	760	160	59	586	627	105	950	88	60	670	55
Arrive On Green	0.44	0.44	0.44	0.44	0.44	0.44	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	2	1727	364	48	1332	1425	126	1979	183	2	1395	114
Grp Volume(v), veh/h	428	0	405	600	0	141	336	0	375	332	0	517
Grp Sat Flow(s),veh/h/ln	632	0	1461	1380	0	1425	795	0	1493	5	0	1506
Q Serve(g_s), s	0.8	0.0	21.5	21.7	0.0	6.1	16.0	0.0	17.5	38.6	0.0	27.2
Cycle Q Clear(g_c), s	44.0	0.0	21.5	43.2	0.0	6.1	43.2	0.0	17.5	38.6	0.0	27.2
Prop In Lane	0.09		0.25	0.06		1.00	0.23		0.12	0.64		0.08
Lane Grp Cap(c), veh/h	317	0	643	645	0	627	426	0	717	0	0	723
V/C Ratio(X)	1.35	0.00	0.63	0.93	0.00	0.22	0.79	0.00	0.52	0.00	0.00	0.71
Avail Cap(c_a), veh/h	317	0	643	645	0	627	426	0	717	0	0	723
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.7	0.0	21.7	27.6	0.0	17.4	26.8	0.0	18.1	0.0	0.0	20.6
Incr Delay (d2), s/veh	176.0	0.0	4.6	21.8	0.0	0.8	13.8	0.0	2.7	0.0	0.0	6.0
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	22.8	0.0	9.5	20.2	0.0	2.6	10.4	0.0	7.7	0.0	0.0	12.4
LnGrp Delay(d),s/veh	207.7	0.0	26.3	49.4	0.0	18.2	40.6	0.0	20.8	0.0	0.0	26.5
LnGrp LOS	F		C	D		B	D		C			C
Approach Vol, veh/h		833			741			711			849	
Approach Delay, s/veh		119.5			43.5			30.2			16.1	
Approach LOS		F			D			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		52.0		48.0		52.0		48.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		40.0		44.0		48.0		44.0				
Max Q Clear Time (g_c+I1), s		45.2		46.0		40.6		45.2				
Green Ext Time (p_c), s		0.0		0.0		5.4		0.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			53.2									
HCM 2010 LOS			D									

**Intersection**

Int Delay, s/veh 0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	10	5	9	644	656	20
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	5	10	700	713	22

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1094	724	735 0
Stage 1	724	-	- -
Stage 2	370	-	- -
Critical Hdwy	6.63	6.23	4.12 -
Critical Hdwy Stg 1	5.43	-	- -
Critical Hdwy Stg 2	5.83	-	- -
Follow-up Hdwy	3.519	3.319	2.218 -
Pot Cap-1 Maneuver	222	425	870 -
Stage 1	479	-	- -
Stage 2	670	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	218	425	870 -
Mov Cap-2 Maneuver	218	-	- -
Stage 1	479	-	- -
Stage 2	657	-	- -

Approach	EB	NB	SB
HCM Control Delay, s	19.8	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	870	-	260	-	-
HCM Lane V/C Ratio	0.011	-	0.063	-	-
HCM Control Delay (s)	9.2	0.1	19.8	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-



**Intersection**

Int Delay, s/veh 1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	6	2	19	7	2	11	14	653	12	18	583	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	2	21	8	2	12	15	710	13	20	634	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1438	1437	645	1443	1443	716	657	0	0	723	0	0
Stage 1	684	684	-	747	747	-	-	-	-	-	-	-
Stage 2	754	753	-	696	696	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	111	133	472	110	132	430	931	-	-	879	-	-
Stage 1	439	449	-	405	420	-	-	-	-	-	-	-
Stage 2	401	417	-	432	443	-	-	-	-	-	-	-
Platoon blocked, %							-	-	-	-	-	-
Mov Cap-1 Maneuver	101	125	472	99	124	430	931	-	-	879	-	-
Mov Cap-2 Maneuver	101	125	-	99	124	-	-	-	-	-	-	-
Stage 1	427	433	-	394	409	-	-	-	-	-	-	-
Stage 2	377	406	-	396	427	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.7	28	0.2	0.3
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	931	-	-	233	178	879	-	-
HCM Lane V/C Ratio	0.016	-	-	0.126	0.122	0.022	-	-
HCM Control Delay (s)	8.9	0	-	22.7	28	9.2	0	-
HCM Lane LOS	A	A	-	C	D	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.4	0.1	-	-