

Queuing and Blocking Report

Baseline

02/11/2025

Intersection: 1: Brockton Avenue & University Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	26	175	191	102	125	147	74	319	125	71	166	31
Average Queue (ft)	3	100	93	35	58	80	57	138	46	26	85	4
95th Queue (ft)	15	154	164	73	103	130	91	276	125	61	149	19
Link Distance (ft)		823	823		1114	1114		2322			397	397
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	95			100			50		100	50		
Storage Blk Time (%)		10		0	1		13	22	0	1	22	
Queuing Penalty (veh)		0		0	0		53	62	0	3	11	

Intersection: 2: Market Street & University Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	R	L	T
Maximum Queue (ft)	84	188	214	107	150	134	74	289	270	152	75	369
Average Queue (ft)	47	108	128	46	73	64	58	158	153	52	70	235
95th Queue (ft)	91	167	188	86	125	117	89	257	249	108	85	365
Link Distance (ft)		1114	1114		869	869		2312	2312	2312		404
Upstream Blk Time (%)												2
Queuing Penalty (veh)												0
Storage Bay Dist (ft)	60			195			50				50	
Storage Blk Time (%)	2	26					27	36			57	26
Queuing Penalty (veh)	5	12					97	36			186	46

Intersection: 2: Market Street & University Avenue

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	296	56
Average Queue (ft)	163	19
95th Queue (ft)	297	47
Link Distance (ft)	404	404
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

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Intersection: 3: Brockton Avenue & 14th Street

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	L	TR	L	T	R	L	T	R
Maximum Queue (ft)	55	137	127	125	145	55	196	83	75	360	81
Average Queue (ft)	13	57	59	61	111	5	109	33	55	156	6
95th Queue (ft)	42	104	106	110	168	28	181	64	82	284	37
Link Distance (ft)		353	132	132	132		180	180		2322	
Upstream Blk Time (%)			0	0	10		1				
Queuing Penalty (veh)			0	0	17		3				
Storage Bay Dist (ft)	70					50			50		100
Storage Blk Time (%)	0	7				0	28		27	23	0
Queuing Penalty (veh)	0	1				1	1		132	24	0

Intersection: 4: Market Street & 14th Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	R	L	T
Maximum Queue (ft)	109	182	189	159	255	276	141	200	214	132	125	302
Average Queue (ft)	41	98	114	124	118	141	54	118	130	63	105	150
95th Queue (ft)	90	159	175	174	238	234	109	183	191	106	145	259
Link Distance (ft)		924	924		364	364		646	646	646		2312
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	90			135			150				100	
Storage Blk Time (%)	1	12		11	1		0	3			22	15
Queuing Penalty (veh)	2	7		26	2		0	2			73	26

Intersection: 4: Market Street & 14th Street

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	265	88
Average Queue (ft)	151	22
95th Queue (ft)	240	62
Link Distance (ft)	2312	2312
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

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Intersection: 5: Brockton Avenue & Tequesquite Avenue

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	T	TR
Maximum Queue (ft)	102	87	111	150	66	181	20	141	151
Average Queue (ft)	47	29	42	52	20	61	4	48	56
95th Queue (ft)	89	65	85	102	57	141	16	107	122
Link Distance (ft)		559		432		917		272	272
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	100		100		55		100		
Storage Blk Time (%)	1	0	1	1	0	6		1	
Queuing Penalty (veh)	0	0	1	1	1	2		0	

Intersection: 6: Market Street & 15th Street

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	102	99	85	68	60	139	180	58	202	232
Average Queue (ft)	47	30	35	22	15	46	64	10	76	96
95th Queue (ft)	86	68	73	51	44	102	134	32	160	184
Link Distance (ft)		222		358		1220	1220		646	646
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	90		95		105			80		
Storage Blk Time (%)	2	0	1	0		0			4	
Queuing Penalty (veh)	1	0	0	0		0			0	

Intersection: 7: Brockton Avenue & Terracina Drive

Movement	WB	NB	SB	SB
Directions Served	LR	TR	L	T
Maximum Queue (ft)	69	83	39	328
Average Queue (ft)	22	11	6	27
95th Queue (ft)	53	51	27	179
Link Distance (ft)	1280	543		917
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (ft)			30	
Storage Blk Time (%)			1	2
Queuing Penalty (veh)			5	0

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Intersection: 8: Market Street & Terracina Drive

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	25	40	147	42	74	27	113	92	18	68	194	211
Average Queue (ft)	3	15	68	9	36	4	37	16	1	25	49	60
95th Queue (ft)	16	39	122	32	59	16	88	57	11	58	130	147
Link Distance (ft)	1280		391		567		567		1220		1220	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	50	175		100		100		55		125		
Storage Blk Time (%)	0	1	0	0		0		1	0	1		
Queuing Penalty (veh)	0	0	1	0		0		0	0	0		

Intersection: 101: Brockton Avenue & EX South RCH Driveway

Movement	WB
Directions Served	R
Maximum Queue (ft)	50
Average Queue (ft)	20
95th Queue (ft)	47
Link Distance (ft)	121
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 102: Brockton Avenue & New North RCH Driveway

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Queuing and Blocking Report

Baseline

02/11/2025

Intersection: 103: Brockton Avenue & New Garage Egress

Movement	NB
Directions Served	T
Maximum Queue (ft)	69
Average Queue (ft)	3
95th Queue (ft)	25
Link Distance (ft)	170
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 104: RCH Driveway & 14th Street

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	R
Maximum Queue (ft)	6	4	60	34	176	75
Average Queue (ft)	0	0	15	1	35	29
95th Queue (ft)	6	3	46	21	121	56
Link Distance (ft)	132	132		924	924	99
Upstream Blk Time (%)						0
Queuing Penalty (veh)						0
Storage Bay Dist (ft)			120			
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 842

APPENDIX C-2

INTERSECTION ANALYSIS WORKSHEETS – OPENING YEAR 2026

Timings

1: Brockton Avenue & University Avenue

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	6	314	50	163	109	232	82	29	288	5
Future Volume (vph)	6	314	50	163	109	232	82	29	288	5
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4	3	8	5	2	3	1	6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	7	4	3	8	5	2	3	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	9.5	9.5	22.5	22.5
Total Split (s)	9.5	22.5	9.5	22.5	9.5	23.5	9.5	9.5	23.5	23.5
Total Split (%)	14.6%	34.6%	14.6%	34.6%	14.6%	36.2%	14.6%	14.6%	36.2%	36.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	None	C-Max	C-Max
Act Effect Green (s)	18.0	14.0	20.7	19.7	32.6	30.3	39.8	30.1	25.5	25.5
Actuated g/C Ratio	0.28	0.22	0.32	0.30	0.50	0.47	0.61	0.46	0.39	0.39
v/c Ratio	0.02	0.70	0.26	0.21	0.30	0.32	0.10	0.06	0.47	0.01
Control Delay (s/veh)	11.7	17.2	23.2	23.7	12.3	16.1	3.0	10.4	20.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	11.7	17.2	23.2	23.7	12.3	16.1	3.0	10.4	20.9	0.0
LOS	B	B	C	C	B	B	A	B	C	A
Approach Delay (s/veh)		17.2		23.6		12.6			19.6	
Approach LOS		B		C		B			B	

Intersection Summary

Cycle Length: 65

Actuated Cycle Length: 65

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay (s/veh): 17.4

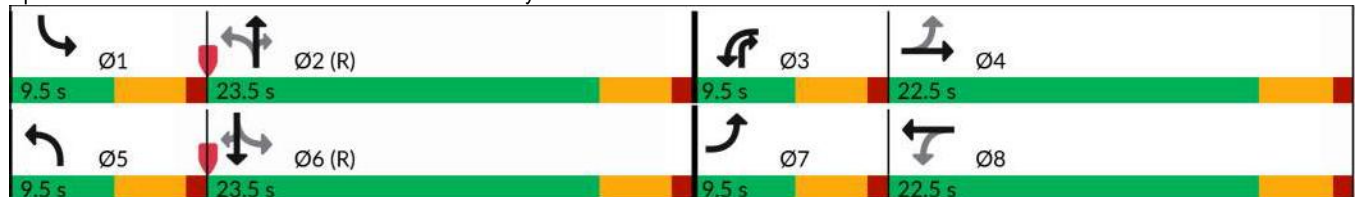
Intersection LOS: B

Intersection Capacity Utilization 56.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Brockton Avenue & University Avenue



HCM 7th Signalized Intersection Summary

1: Brockton Avenue & University Avenue

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	314	224	50	163	23	109	232	82	29	288	5
Future Volume (veh/h)	6	314	224	50	163	23	109	232	82	29	288	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	7	378	270	60	196	28	131	280	99	35	347	6
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	393	472	332	245	871	123	462	747	714	470	684	580
Arrive On Green	0.01	0.24	0.24	0.05	0.28	0.28	0.07	0.40	0.40	0.04	0.37	0.37
Sat Flow, veh/h	1781	1991	1403	1781	3128	440	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	7	337	311	60	110	114	131	280	99	35	347	6
Grp Sat Flow(s),veh/h/ln	1781	1777	1618	1781	1777	1791	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.2	11.6	11.8	1.6	3.1	3.2	2.9	6.9	2.4	0.8	9.4	0.2
Cycle Q Clear(g_c), s	0.2	11.6	11.8	1.6	3.1	3.2	2.9	6.9	2.4	0.8	9.4	0.2
Prop In Lane	1.00		0.87	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	393	421	383	245	495	499	462	747	714	470	684	580
V/C Ratio(X)	0.02	0.80	0.81	0.25	0.22	0.23	0.28	0.37	0.14	0.07	0.51	0.01
Avail Cap(c_a), veh/h	513	492	448	291	495	499	475	747	714	542	684	580
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	0.90	0.90	0.90	0.70	0.70	0.70	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.6	23.4	23.4	18.1	18.0	18.1	12.0	13.8	10.5	12.0	16.1	13.1
Incr Delay (d2), s/veh	0.0	7.9	9.5	0.5	0.2	0.2	0.2	1.0	0.3	0.1	2.7	0.0
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	0.1	5.5	5.2	0.6	1.2	1.3	1.1	2.8	0.8	0.3	4.2	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.6	31.3	33.0	18.6	18.2	18.3	12.2	14.8	10.8	12.1	18.7	13.2
LnGrp LOS	B	C	C	B	B	B	B	B	B	B	B	B
Approach Vol, veh/h	655			284			510			388		
Approach Delay, s/veh	32.0			18.3			13.3			18.1		
Approach LOS	C			B			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.8	30.5	7.8	19.9	9.0	28.3	5.1	22.6				
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	5.0	19.0	5.0	18.0	5.0	19.0	5.0	18.0				
Max Q Clear Time (g_c+I1), s	2.8	8.9	3.6	13.8	4.9	11.4	2.2	5.2				
Green Ext Time (p_c), s	0.0	1.4	0.0	1.6	0.0	1.2	0.0	0.9				
Intersection Summary												
HCM 7th Control Delay, s/veh	21.7											
HCM 7th LOS	C											
Notes												
User approved changes to right turn type.												

Timings

2: Market Street & University Avenue

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	46	308	65	295	39	463	59	59	950	57
Future Volume (vph)	46	308	65	295	39	463	59	59	950	57
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	9.5	22.5	9.5	22.5	9.5	23.5	23.5	9.5	23.5	23.5
Total Split (%)	14.6%	34.6%	14.6%	34.6%	14.6%	36.2%	36.2%	14.6%	36.2%	36.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effect Green (s)	5.0	13.2	5.0	15.1	6.3	28.4	28.4	6.6	28.5	28.5
Actuated g/C Ratio	0.08	0.20	0.08	0.23	0.10	0.44	0.44	0.10	0.44	0.44
v/c Ratio	0.38	0.61	0.53	0.52	0.25	0.33	0.08	0.37	0.68	0.08
Control Delay (s/veh)	33.5	27.6	44.8	20.2	31.3	16.0	0.2	34.5	23.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.5	27.6	44.8	20.2	31.3	16.0	0.2	34.5	23.0	0.2
LOS	C	C	D	C	C	B	A	C	C	A
Approach Delay (s/veh)		28.2		23.7		15.4			22.4	
Approach LOS		C		C		B			C	

Intersection Summary

Cycle Length: 65

Actuated Cycle Length: 65

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay (s/veh): 22.1

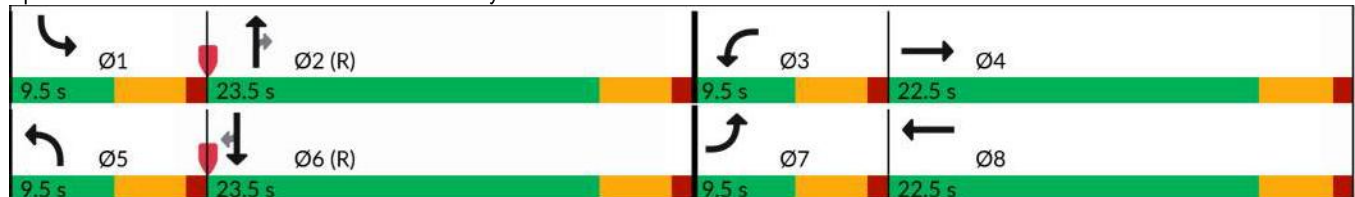
Intersection LOS: C

Intersection Capacity Utilization 61.5%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2: Market Street & University Avenue



HCM 7th Signalized Intersection Summary

2: Market Street & University Avenue

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	308	107	65	295	97	39	463	59	59	950	57
Future Volume (veh/h)	46	308	107	65	295	97	39	463	59	59	950	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	51	342	119	72	328	108	43	514	66	66	1056	63
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	82	487	167	100	520	168	74	1514	675	95	1557	695
Arrive On Green	0.02	0.06	0.06	0.06	0.20	0.20	0.04	0.43	0.43	0.05	0.44	0.44
Sat Flow, veh/h	1781	2598	889	1781	2639	854	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	51	232	229	72	219	217	43	514	66	66	1056	63
Grp Sat Flow(s),veh/h/ln	1781	1777	1710	1781	1777	1717	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	1.9	8.3	8.5	2.6	7.3	7.6	1.5	6.3	1.6	2.4	15.4	1.5
Cycle Q Clear(g_c), s	1.9	8.3	8.5	2.6	7.3	7.6	1.5	6.3	1.6	2.4	15.4	1.5
Prop In Lane	1.00		0.52	1.00		0.50	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	82	333	321	100	350	338	74	1514	675	95	1557	695
V/C Ratio(X)	0.62	0.70	0.71	0.72	0.63	0.64	0.58	0.34	0.10	0.69	0.68	0.09
Avail Cap(c_a), veh/h	137	492	474	137	492	475	137	1514	675	137	1557	695
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)	0.77	0.77	0.77	1.00	1.00	1.00	0.84	0.84	0.84	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.4	28.7	28.8	30.2	23.9	24.0	30.6	12.5	11.2	30.2	14.6	10.7
Incr Delay (d2), s/veh	5.7	2.0	2.3	11.0	1.8	2.0	5.9	0.5	0.2	8.6	2.4	0.3
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	0.9	3.9	3.9	1.4	3.1	3.1	0.8	2.4	0.6	1.2	6.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	37.1	30.7	31.1	41.2	25.7	26.0	36.5	13.0	11.4	38.8	17.0	10.9
LnGrp LOS	D	C	C	D	C	C	D	B	B	D	B	B
Approach Vol, veh/h	512				508				623		1185	
Approach Delay, s/veh	31.5				28.1				14.5		17.9	
Approach LOS	C				C				B		B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	32.2	8.1	16.7	7.2	33.0	7.5	17.3				
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	5.0	19.0	5.0	18.0	5.0	19.0	5.0	18.0				
Max Q Clear Time (g_c+I1), s	4.4	8.3	4.6	10.5	3.5	17.4	3.9	9.6				
Green Ext Time (p_c), s	0.0	2.7	0.0	1.6	0.0	1.1	0.0	1.7				
Intersection Summary												
HCM 7th Control Delay, s/veh			21.4									
HCM 7th LOS			C									

Timings

3: Brockton Avenue & 14th Street

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	18	142	244	97	7	414	293	78	421	12
Future Volume (vph)	18	142	244	97	7	414	293	78	421	12
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	3	1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	9.5	9.5	22.5	22.5
Total Split (s)	9.5	22.5	11.4	24.4	9.5	26.6	11.4	9.5	26.6	26.6
Total Split (%)	13.6%	32.1%	16.3%	34.9%	13.6%	38.0%	16.3%	13.6%	38.0%	38.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	None	C-Max	C-Max
Act Effect Green (s)	5.0	12.1	6.9	19.7	5.8	27.3	38.7	7.9	35.4	35.4
Actuated g/C Ratio	0.07	0.17	0.10	0.28	0.08	0.39	0.55	0.11	0.51	0.51
v/c Ratio	0.17	0.57	0.86	0.49	0.05	0.68	0.34	0.47	0.53	0.02
Control Delay (s/veh)	33.8	32.0	53.4	28.3	30.3	26.8	2.4	39.1	17.7	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.8	32.0	53.4	28.3	30.3	26.8	2.4	39.1	17.7	0.0
LOS	C	C	D	C	C	C	A	D	B	A
Approach Delay (s/veh)		32.2		41.3		16.8			20.6	
Approach LOS		C		D		B			C	

Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay (s/veh): 25.4

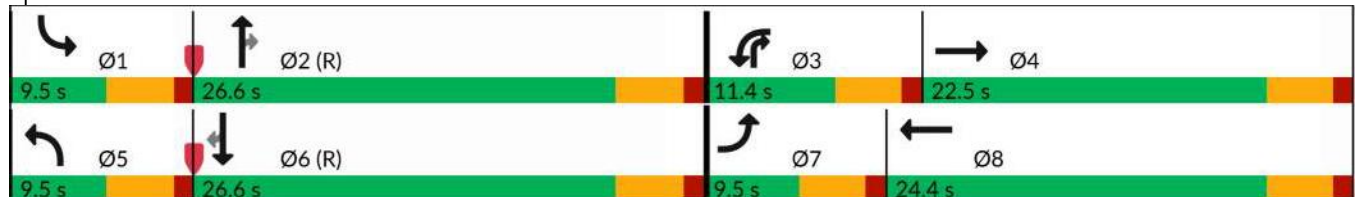
Intersection LOS: C

Intersection Capacity Utilization 58.4%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Brockton Avenue & 14th Street



HCM 7th Signalized Intersection Summary

3: Brockton Avenue & 14th Street

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	142	11	244	97	128	7	414	293	78	421	12
Future Volume (veh/h)	18	142	11	244	97	128	7	414	293	78	421	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	169	13	290	115	152	8	493	349	93	501	14
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	43	226	17	341	151	200	18	833	862	119	939	796
Arrive On Green	0.02	0.13	0.13	0.03	0.07	0.07	0.01	0.45	0.45	0.07	0.50	0.50
Sat Flow, veh/h	1781	1715	132	3456	731	966	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	21	0	182	290	0	267	8	493	349	93	501	14
Grp Sat Flow(s),veh/h/ln	1781	0	1847	1728	0	1697	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.8	0.0	6.6	5.8	0.0	10.8	0.3	13.9	9.0	3.6	12.8	0.3
Cycle Q Clear(g_c), s	0.8	0.0	6.6	5.8	0.0	10.8	0.3	13.9	9.0	3.6	12.8	0.3
Prop In Lane	1.00		0.07	1.00		0.57	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	43	0	244	341	0	351	18	833	862	119	939	796
V/C Ratio(X)	0.49	0.00	0.75	0.85	0.00	0.76	0.44	0.59	0.40	0.78	0.53	0.02
Avail Cap(c_a), veh/h	127	0	475	341	0	482	127	833	862	127	939	796
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	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	1.00	1.00	0.90	0.90	0.90
Uniform Delay (d), s/veh	33.7	0.0	29.2	33.4	0.0	30.9	34.4	14.6	9.3	32.2	11.9	8.8
Incr Delay (d2), s/veh	8.5	0.0	4.5	18.2	0.0	4.7	15.5	3.1	1.4	22.8	2.0	0.0
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	0.4	0.0	3.1	3.4	0.0	5.3	0.2	6.0	3.0	2.3	5.2	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	42.3	0.0	33.8	51.6	0.0	35.6	49.9	17.7	10.7	54.9	13.8	8.8
LnGrp LOS	D		C	D		D	D	B	B	D	B	A
Approach Vol, veh/h	203		557				850			608		
Approach Delay, s/veh	34.6		43.9				15.2			20.0		
Approach LOS	C		D				B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.2	35.7	11.4	13.7	5.2	39.6	6.2	19.0				
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	5.0	22.1	6.9	18.0	5.0	22.1	5.0	19.9				
Max Q Clear Time (g_c+I1), s	5.6	15.9	7.8	8.6	2.3	14.8	2.8	12.8				
Green Ext Time (p_c), s	0.0	2.4	0.0	0.6	0.0	1.9	0.0	0.9				
Intersection Summary												
HCM 7th Control Delay, s/veh			25.5									
HCM 7th LOS			C									
Notes												
User approved changes to right turn type.												

Timings

4: Market Street & 14th Street

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	72	461	230	601	55	496	198	75	541	89
Future Volume (vph)	72	461	230	601	55	496	198	75	541	89
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	9.9	22.5	15.2	27.8	9.5	22.8	22.8	9.5	22.8	22.8
Total Split (%)	14.1%	32.1%	21.7%	39.7%	13.6%	32.6%	32.6%	13.6%	32.6%	32.6%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effect Green (s)	5.4	16.2	10.7	23.5	5.5	21.4	21.4	5.7	23.9	23.9
Actuated g/C Ratio	0.08	0.23	0.15	0.34	0.08	0.31	0.31	0.08	0.34	0.34
v/c Ratio	0.59	0.69	0.95	0.70	0.44	0.51	0.34	0.57	0.50	0.14
Control Delay (s/veh)	47.9	32.6	76.3	23.1	42.3	23.3	4.5	50.0	21.9	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	47.9	32.6	76.3	23.1	42.3	23.3	4.5	50.0	21.9	0.4
LOS	D	C	E	C	D	C	A	D	C	A
Approach Delay (s/veh)		34.5		35.6		19.7			22.1	
Approach LOS		C		D		B			C	

Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay (s/veh): 28.3

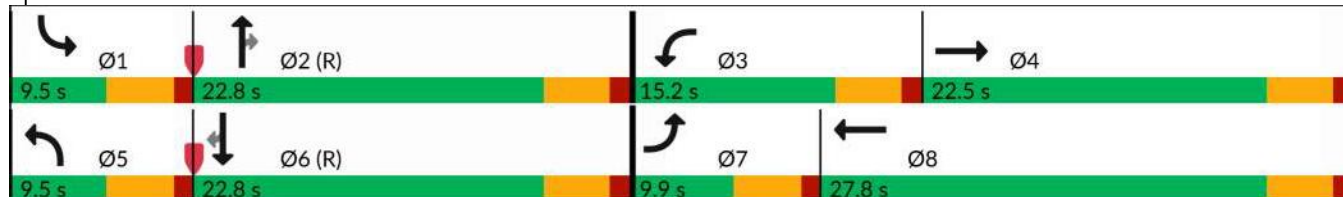
Intersection LOS: C

Intersection Capacity Utilization 61.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 4: Market Street & 14th Street



HCM 7th Signalized Intersection Summary

4: Market Street & 14th Street

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	461	45	230	601	143	55	496	198	75	541	89
Future Volume (veh/h)	72	461	45	230	601	143	55	496	198	75	541	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	80	512	50	256	668	159	61	551	220	83	601	99
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	103	671	65	272	855	203	88	1155	515	106	1191	531
Arrive On Green	0.02	0.07	0.07	0.15	0.30	0.30	0.05	0.33	0.33	0.06	0.34	0.34
Sat Flow, veh/h	1781	3271	319	1781	2848	677	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	80	277	285	256	417	410	61	551	220	83	601	99
Grp Sat Flow(s),veh/h/ln	1781	1777	1813	1781	1777	1748	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	3.1	10.7	10.8	10.0	15.0	15.0	2.4	8.7	7.6	3.2	9.5	3.1
Cycle Q Clear(g_c), s	3.1	10.7	10.8	10.0	15.0	15.0	2.4	8.7	7.6	3.2	9.5	3.1
Prop In Lane	1.00		0.18	1.00		0.39	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	103	365	372	272	533	525	88	1155	515	106	1191	531
V/C Ratio(X)	0.78	0.76	0.77	0.94	0.78	0.78	0.69	0.48	0.43	0.78	0.50	0.19
Avail Cap(c_a), veh/h	137	457	466	272	591	582	127	1155	515	127	1191	531
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)	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.69	0.69	0.69
Uniform Delay (d), s/veh	33.9	30.9	31.0	29.3	22.4	22.4	32.7	18.9	18.5	32.5	18.6	16.5
Incr Delay (d2), s/veh	17.8	5.7	5.8	38.7	6.1	6.2	8.4	1.3	2.3	16.2	1.1	0.5
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	1.9	5.6	5.7	7.0	6.7	6.7	1.2	3.5	2.9	1.8	3.8	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	51.6	36.7	36.8	68.0	28.5	28.6	41.1	20.2	20.9	48.7	19.7	17.0
LnGrp LOS	D	D	D	E	C	C	D	C	C	D	B	B
Approach Vol, veh/h	642		1083				832		783			
Approach Delay, s/veh	38.6		37.9				21.9		22.4			
Approach LOS	D		D				C		C			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.7	27.3	15.2	18.9	8.0	28.0	8.6	25.5				
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	5.0	18.3	10.7	18.0	5.0	18.3	5.4	23.3				
Max Q Clear Time (g_c+I1), s	5.2	10.7	12.0	12.8	4.4	11.5	5.1	17.0				
Green Ext Time (p_c), s	0.0	2.7	0.0	1.6	0.0	2.4	0.0	2.7				
Intersection Summary												
HCM 7th Control Delay, s/veh	30.4											
HCM 7th LOS	C											

Timings

5: Brockton Avenue & Tequesquite Avenue

02/10/2025



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	134	18	30	4	61	511	91	441
Future Volume (vph)	134	18	30	4	61	511	91	441
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	9.5	22.5
Total Split (s)	9.8	22.8	9.5	22.5	9.8	38.1	9.6	37.9
Total Split (%)	12.3%	28.5%	11.9%	28.1%	12.3%	47.6%	12.0%	47.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	12.4	9.2	11.0	7.1	51.8	46.1	53.2	46.9
Actuated g/C Ratio	0.16	0.12	0.14	0.09	0.65	0.58	0.67	0.59
v/c Ratio	0.86	0.28	0.18	0.48	0.14	0.68	0.30	0.33
Control Delay (s/veh)	66.8	19.6	26.8	14.9	5.7	19.3	6.9	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	66.8	19.6	26.8	14.9	5.7	19.3	6.9	10.2
LOS	E	B	C	B	A	B	A	B
Approach Delay (s/veh)		53.8		17.8		18.0		9.7
Approach LOS		D		B		B		A

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay (s/veh): 18.9

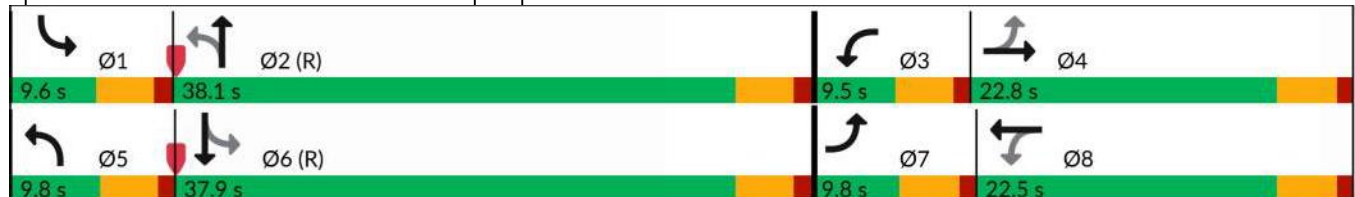
Intersection LOS: B

Intersection Capacity Utilization 61.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 5: Brockton Avenue & Tequesquite Avenue



HCM 7th Signalized Intersection Summary

5: Brockton Avenue & Tequesquite Avenue

02/10/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	18	33	30	4	88	61	511	66	91	441	101
Future Volume (veh/h)	134	18	33	30	4	88	61	511	66	91	441	101
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	168	22	41	38	5	110	76	639	82	114	551	126
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	245	76	141	281	7	151	527	897	115	384	1606	366
Arrive On Green	0.07	0.13	0.13	0.04	0.10	0.10	0.05	0.55	0.55	0.06	0.56	0.56
Sat Flow, veh/h	1781	585	1090	1781	69	1526	1781	1624	208	1781	2874	655
Grp Volume(v), veh/h	168	0	63	38	0	115	76	0	721	114	340	337
Grp Sat Flow(s),veh/h/ln	1781	0	1674	1781	0	1596	1781	0	1833	1781	1777	1752
Q Serve(g_s), s	5.3	0.0	2.7	1.5	0.0	5.6	1.4	0.0	23.2	2.1	8.3	8.4
Cycle Q Clear(g_c), s	5.3	0.0	2.7	1.5	0.0	5.6	1.4	0.0	23.2	2.1	8.3	8.4
Prop In Lane	1.00		0.65	1.00		0.96	1.00		0.11	1.00		0.37
Lane Grp Cap(c), veh/h	245	0	217	281	0	158	527	0	1012	384	993	979
V/C Ratio(X)	0.69	0.00	0.29	0.14	0.00	0.73	0.14	0.00	0.71	0.30	0.34	0.34
Avail Cap(c_a), veh/h	245	0	383	329	0	359	554	0	1012	395	993	979
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	0.83	0.00	0.83	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.3	0.0	31.5	30.6	0.0	35.0	7.0	0.0	13.2	10.5	9.6	9.6
Incr Delay (d2), s/veh	7.7	0.0	0.7	0.2	0.0	6.3	0.1	0.0	3.6	0.4	0.9	1.0
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	1.1	0.0	1.1	0.6	0.0	2.4	0.5	0.0	9.4	0.7	3.2	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	40.0	0.0	32.2	30.8	0.0	41.3	7.1	0.0	16.8	10.9	10.6	10.6
LnGrp LOS	D		C	C		D	A		B	B	B	B
Approach Vol, veh/h	231					153		797		791		
Approach Delay, s/veh	37.9					38.7		15.9		10.6		
Approach LOS	D					D		B		B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.1	48.7	7.4	14.9	8.6	49.2	9.8	12.4				
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	33.6	5.0	18.3	5.3	33.4	5.3	18.0				
Max Q Clear Time (g_c+I1), s	4.1	25.2	3.5	4.7	3.4	10.4	7.3	7.6				
Green Ext Time (p_c), s	0.0	3.2	0.0	0.2	0.0	4.4	0.0	0.4				
Intersection Summary												
HCM 7th Control Delay, s/veh			18.1									
HCM 7th LOS			B									

Timings

6: Market Street & 15th Street

02/10/2025



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	72	6	46	9	22	671	58	656
Future Volume (vph)	72	6	46	9	22	671	58	656
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	9.5	22.9	9.6	23.0
Total Split (%)	40.9%	40.9%	40.9%	40.9%	17.3%	41.6%	17.5%	41.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	8.8	8.8	8.8	8.8	6.4	32.2	7.5	37.6
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.12	0.59	0.14	0.68
v/c Ratio	0.39	0.13	0.25	0.11	0.13	0.42	0.28	0.36
Control Delay (s/veh)	25.0	10.2	21.9	11.9	22.7	10.7	23.7	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.0	10.2	21.9	11.9	22.7	10.7	23.7	6.7
LOS	C	B	C	B	C	B	C	A
Approach Delay (s/veh)		20.6		18.1		11.1		8.0
Approach LOS		C		B		B		A

Intersection Summary

Cycle Length: 55

Actuated Cycle Length: 55

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.42

Intersection Signal Delay (s/veh): 10.6

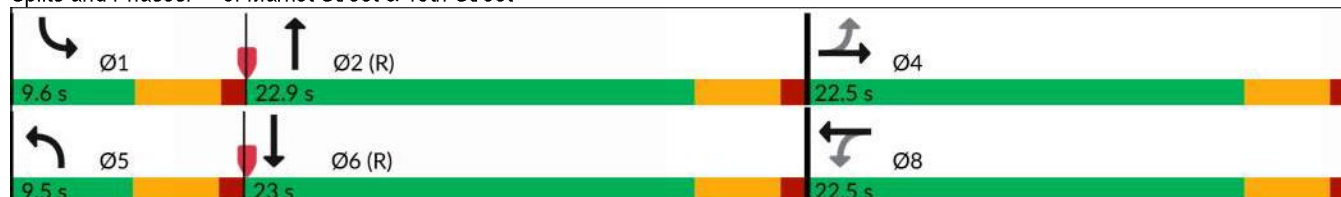
Intersection LOS: B

Intersection Capacity Utilization 46.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 6: Market Street & 15th Street



HCM 7th Signalized Intersection Summary

6: Market Street & 15th Street

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	6	25	46	9	18	22	671	65	58	656	67
Future Volume (veh/h)	72	6	25	46	9	18	22	671	65	58	656	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	85	7	29	54	11	21	26	789	76	68	772	79
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	263	36	149	259	65	124	53	1908	184	105	1991	204
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.03	0.58	0.58	0.06	0.61	0.61
Sat Flow, veh/h	1377	318	1316	1372	575	1098	1781	3275	315	1781	3254	333
Grp Volume(v), veh/h	85	0	36	54	0	32	26	428	437	68	421	430
Grp Sat Flow(s),veh/h/ln	1377	0	1634	1372	0	1673	1781	1777	1814	1781	1777	1810
Q Serve(g_s), s	3.3	0.0	1.1	2.0	0.0	1.0	0.8	7.3	7.3	2.1	6.6	6.6
Cycle Q Clear(g_c), s	4.2	0.0	1.1	3.1	0.0	1.0	0.8	7.3	7.3	2.1	6.6	6.6
Prop In Lane	1.00		0.81	1.00		0.66	1.00		0.17	1.00		0.18
Lane Grp Cap(c), veh/h	263	0	185	259	0	189	53	1035	1057	105	1087	1107
V/C Ratio(X)	0.32	0.00	0.19	0.21	0.00	0.17	0.49	0.41	0.41	0.65	0.39	0.39
Avail Cap(c_a), veh/h	558	0	535	553	0	547	162	1035	1057	165	1087	1107
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	0.79	0.79	0.79	0.73	0.73	0.73
Uniform Delay (d), s/veh	24.0	0.0	22.1	23.5	0.0	22.1	26.3	6.3	6.3	25.3	5.4	5.4
Incr Delay (d2), s/veh	0.7	0.0	0.5	0.4	0.0	0.4	5.4	1.0	0.9	4.9	0.8	0.8
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	1.0	0.0	0.4	0.6	0.0	0.4	0.4	2.2	2.3	1.0	1.9	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.7	0.0	22.6	23.9	0.0	22.5	31.7	7.3	7.3	30.2	6.2	6.2
LnGrp LOS	C		C	C		C	C	A	A	C	A	A
Approach Vol, veh/h	121			86			891			919		
Approach Delay, s/veh	24.1			23.4			8.0			8.0		
Approach LOS	C			C			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	36.5		10.7	6.1	38.1		10.7				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	18.4		18.0	5.0	18.5		18.0				
Max Q Clear Time (g_c+1), s	4.1	9.3		6.2	2.8	8.6		5.1				
Green Ext Time (p_c), s	0.0	3.7		0.3	0.0	3.8		0.2				
Intersection Summary												
HCM 7th Control Delay, s/veh				9.6								
HCM 7th LOS				A								

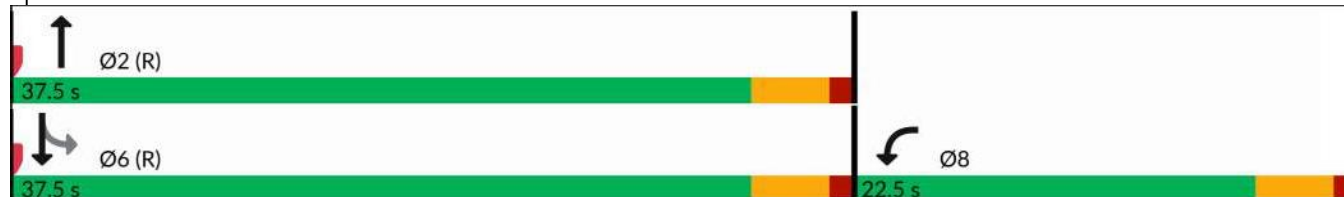
Timings

7: Brockton Avenue & Terracina Drive

02/10/2025

				
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	13	555	83	401
Future Volume (vph)	13	555	83	401
Turn Type	Prot	NA	Perm	NA
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	22.5	37.5	37.5	37.5
Total Split (%)	37.5%	62.5%	62.5%	62.5%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max
Act Effct Green (s)	7.0	46.9	46.9	46.9
Actuated g/C Ratio	0.12	0.78	0.78	0.78
v/c Ratio	0.42	0.53	0.23	0.35
Control Delay (s/veh)	12.6	5.4	4.5	3.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	12.6	5.4	4.5	3.8
LOS	B	A	A	A
Approach Delay (s/veh)	12.6	5.4		3.9
Approach LOS	B	A		A
Intersection Summary				
Cycle Length: 60				
Actuated Cycle Length: 60				
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green				
Natural Cycle: 60				
Control Type: Actuated-Coordinated				
Maximum v/c Ratio: 0.53				
Intersection Signal Delay (s/veh): 5.4			Intersection LOS: A	
Intersection Capacity Utilization 53.4%			ICU Level of Service A	
Analysis Period (min) 15				

Splits and Phases: 7: Brockton Avenue & Terracina Drive



HCM 7th Signalized Intersection Summary

7: Brockton Avenue & Terracina Drive

02/10/2025



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	13	78	555	46	83	401
Future Volume (veh/h)	13	78	555	46	83	401
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	100	712	59	106	514
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	22	128	1289	107	526	1415
Arrive On Green	0.09	0.09	0.76	0.76	0.76	0.76
Sat Flow, veh/h	232	1367	1704	141	698	1870
Grp Volume(v), veh/h	118	0	0	771	106	514
Grp Sat Flow(s),veh/h/ln	1613	0	0	1845	698	1870
Q Serve(g_s), s	4.3	0.0	0.0	10.5	4.5	5.5
Cycle Q Clear(g_c), s	4.3	0.0	0.0	10.5	15.0	5.5
Prop In Lane	0.14	0.85		0.08	1.00	
Lane Grp Cap(c), veh/h	151	0	0	1396	526	1415
V/C Ratio(X)	0.78	0.00	0.00	0.55	0.20	0.36
Avail Cap(c_a), veh/h	484	0	0	1396	526	1415
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.00	0.00	1.00	0.96	0.96
Uniform Delay (d), s/veh	26.6	0.0	0.0	3.1	6.2	2.5
Incr Delay (d2), s/veh	8.5	0.0	0.0	1.6	0.8	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0	2.2	0.6	1.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	35.1	0.0	0.0	4.6	7.0	3.1
LnGrp LOS	D			A	A	A
Approach Vol, veh/h	118		771		620	
Approach Delay, s/veh	35.1		4.6		3.8	
Approach LOS	D		A		A	
Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	49.9				49.9	10.1
Change Period (Y+Rc), s	4.5				4.5	4.5
Max Green Setting (Gmax), s	33.0				33.0	18.0
Max Q Clear Time (g_c+I1), s	12.5				17.0	6.3
Green Ext Time (p_c), s	5.8				3.8	0.2
Intersection Summary						
HCM 7th Control Delay, s/veh			6.7			
HCM 7th LOS			A			

Timings

8: Market Street & Terracina Drive

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	90	21	2	4	29	21	666	202	150	506
Future Volume (vph)	90	21	2	4	29	21	666	202	150	506
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5
Total Split (s)	11.0	24.0	9.5	22.5	22.5	9.9	26.5	26.5	15.0	31.6
Total Split (%)	14.7%	32.0%	12.7%	30.0%	30.0%	13.2%	35.3%	35.3%	20.0%	42.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max
Act Effect Green (s)	6.5	11.5	5.0	6.4	6.4	6.8	33.5	33.5	14.6	47.6
Actuated g/C Ratio	0.09	0.15	0.07	0.09	0.09	0.09	0.45	0.45	0.19	0.63
v/c Ratio	0.80	0.34	0.03	0.03	0.12	0.18	0.57	0.33	0.59	0.36
Control Delay (s/veh)	70.8	13.3	33.5	30.5	0.7	33.6	20.1	6.2	34.3	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	70.8	13.3	33.5	30.5	0.7	33.6	20.1	6.2	34.3	9.3
LOS	E	B	C	C	A	C	C	A	C	A
Approach Delay (s/veh)		43.5		6.0			17.3			14.4
Approach LOS		D		A			B			B

Intersection Summary

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay (s/veh): 18.4

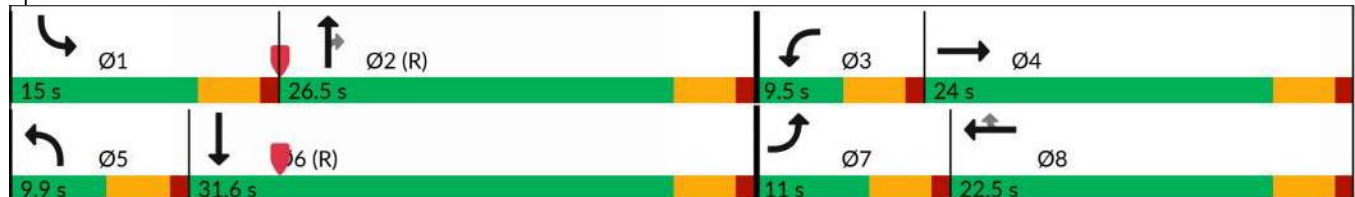
Intersection LOS: B

Intersection Capacity Utilization 49.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 8: Market Street & Terracina Drive



HCM 7th Signalized Intersection Summary

8: Market Street & Terracina Drive

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	21	61	2	4	29	21	666	202	150	506	80
Future Volume (veh/h)	90	21	61	2	4	29	21	666	202	150	506	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	122	28	82	3	5	39	28	900	273	203	684	108
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	154	62	180	7	120	102	52	1683	751	242	1783	281
Arrive On Green	0.09	0.15	0.15	0.00	0.06	0.06	0.03	0.47	0.47	0.14	0.58	0.58
Sat Flow, veh/h	1781	420	1229	1781	1870	1585	1781	3554	1585	1781	3075	485
Grp Volume(v), veh/h	122	0	110	3	5	39	28	900	273	203	395	397
Grp Sat Flow(s),veh/h/ln	1781	0	1649	1781	1870	1585	1781	1777	1585	1781	1777	1783
Q Serve(g_s), s	5.0	0.0	4.6	0.1	0.2	1.8	1.2	13.4	8.2	8.3	9.0	9.0
Cycle Q Clear(g_c), s	5.0	0.0	4.6	0.1	0.2	1.8	1.2	13.4	8.2	8.3	9.0	9.0
Prop In Lane	1.00		0.75	1.00		1.00	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	154	0	242	7	120	102	52	1683	751	242	1030	1034
V/C Ratio(X)	0.79	0.00	0.46	0.42	0.04	0.38	0.53	0.53	0.36	0.84	0.38	0.38
Avail Cap(c_a), veh/h	154	0	429	119	449	380	128	1683	751	249	1030	1034
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)	0.98	0.00	0.98	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Uniform Delay (d), s/veh	33.6	0.0	29.3	37.3	32.9	33.7	35.9	13.9	12.6	31.6	8.5	8.5
Incr Delay (d2), s/veh	23.4	0.0	1.3	34.2	0.1	2.4	8.2	1.2	1.4	20.3	1.0	1.0
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	3.1	0.0	1.8	0.1	0.1	0.7	0.6	5.1	2.9	4.8	3.3	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	57.0	0.0	30.6	71.5	33.1	36.0	44.0	15.1	13.9	51.9	9.5	9.5
LnGrp LOS	E		C	E	C	D	D	B	B	D	A	A
Approach Vol, veh/h	232					47		1201		995		
Approach Delay, s/veh	44.5					38.0		15.5		18.2		
Approach LOS	D					D		B		B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.7	40.0	4.8	15.5	6.7	48.0	11.0	9.3				
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	10.5	22.0	5.0	19.5	5.4	27.1	6.5	18.0				
Max Q Clear Time (g_c+1), s	10.3	15.4	2.1	6.6	3.2	11.0	7.0	3.8				
Green Ext Time (p_c), s	0.0	3.7	0.0	0.4	0.0	4.6	0.0	0.1				
Intersection Summary												
HCM 7th Control Delay, s/veh			19.7									
HCM 7th LOS			B									

HCM 7th TWSC
101: Brockton Avenue & EX South RCH Driveway

02/10/2025

Intersection

Int Delay, s/veh 0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↗↗			↗↗
Traffic Vol, veh/h	0	16	696	20	0	632
Future Vol, veh/h	0	16	696	20	0	632
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	25	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	19	809	23	0	735

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	416	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	*890	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %		0	-
Mov Cap-1 Maneuver	-	*890	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.13	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	890
HCM Lane V/C Ratio	-	-	0.021
HCM Control Delay (s/veh)	-	-	9.1
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.1

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 7th TWSC
104: RCH Driveway & 14th Street

02/10/2025

Intersection						
Int Delay, s/veh	1.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑		↑
Traffic Vol, veh/h	479	33	159	451	0	96
Future Vol, veh/h	479	33	159	451	0	96
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	120	-	-	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	521	36	173	490	0	104
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	557	0	-	278
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.14	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.22	-	-	3.32
Pot Cap-1 Maneuver	-	-	1159	-	0	*968
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-	0	-	-	0
Mov Cap-1 Maneuver	-	-	1159	-	-	*968
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		2.25		9.17	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	968	-	-	1159	-	
HCM Lane V/C Ratio	0.108	-	-	0.149	-	
HCM Control Delay (s/veh)	9.2	-	-	8.6	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.4	-	-	0.5	-	
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

Timings

1: Brockton Avenue & University Avenue

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	5	360	62	295	215	335	77	52	265	10
Future Volume (vph)	5	360	62	295	215	335	77	52	265	10
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4	3	8	5	2	3	1	6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	7	4	3	8	5	2	3	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	9.5	9.5	22.5	22.5
Total Split (s)	9.5	22.5	9.5	22.5	10.0	23.5	9.5	9.5	23.0	23.0
Total Split (%)	14.6%	34.6%	14.6%	34.6%	15.4%	36.2%	14.6%	14.6%	35.4%	35.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	None	C-Max	C-Max
Act Effect Green (s)	18.4	14.4	21.1	20.1	31.9	27.8	37.3	28.0	22.3	22.3
Actuated g/C Ratio	0.28	0.22	0.32	0.31	0.49	0.43	0.57	0.43	0.34	0.34
v/c Ratio	0.01	0.69	0.27	0.33	0.49	0.45	0.09	0.12	0.44	0.02
Control Delay (s/veh)	11.6	19.8	21.4	24.2	16.1	19.2	2.3	10.9	21.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	11.6	19.8	21.4	24.2	16.1	19.2	2.3	10.9	21.2	0.0
LOS	B	B	C	C	B	B	A	B	C	A
Approach Delay (s/veh)		19.7		23.8		16.0			18.9	
Approach LOS		B		C		B			B	

Intersection Summary

Cycle Length: 65

Actuated Cycle Length: 65

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay (s/veh): 19.2

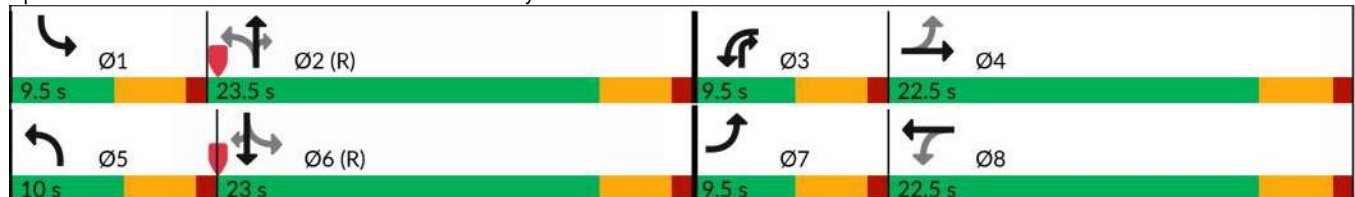
Intersection LOS: B

Intersection Capacity Utilization 61.8%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Brockton Avenue & University Avenue



HCM 7th Signalized Intersection Summary

1: Brockton Avenue & University Avenue

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	360	214	62	295	48	215	335	77	52	265	10
Future Volume (veh/h)	5	360	214	62	295	48	215	335	77	52	265	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	383	228	66	314	51	229	356	82	55	282	11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	302	489	287	252	839	135	527	737	710	437	670	568
Arrive On Green	0.01	0.23	0.23	0.02	0.09	0.09	0.08	0.39	0.39	0.05	0.36	0.36
Sat Flow, veh/h	1781	2155	1265	1781	3066	493	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	5	315	296	66	181	184	229	356	82	55	282	11
Grp Sat Flow(s),veh/h/ln	1781	1777	1643	1781	1777	1782	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.1	10.8	11.1	1.8	6.2	6.3	5.3	9.3	2.0	1.2	7.4	0.3
Cycle Q Clear(g_c), s	0.1	10.8	11.1	1.8	6.2	6.3	5.3	9.3	2.0	1.2	7.4	0.3
Prop In Lane	1.00		0.77	1.00		0.28	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	302	403	373	252	486	488	527	737	710	437	670	568
V/C Ratio(X)	0.02	0.78	0.79	0.26	0.37	0.38	0.43	0.48	0.12	0.13	0.42	0.02
Avail Cap(c_a), veh/h	427	492	455	294	492	493	527	737	710	487	670	568
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.90	0.90	0.90	0.86	0.86	0.86	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.2	23.6	23.7	18.9	24.3	24.4	12.1	14.7	10.4	12.2	15.8	13.5
Incr Delay (d2), s/veh	0.0	6.5	7.8	0.5	0.4	0.4	0.5	1.9	0.3	0.1	1.9	0.1
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	0.1	5.0	4.8	0.7	2.7	2.8	1.9	3.9	0.7	0.5	3.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.3	30.1	31.5	19.4	24.7	24.8	12.6	16.7	10.7	12.3	17.7	13.5
LnGrp LOS	B	C	C	B	C	C	B	B	B	B	B	B
Approach Vol, veh/h	616			431			667			348		
Approach Delay, s/veh	30.7			23.9			14.5			16.7		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.6	30.1	8.0	19.2	10.0	27.8	4.9	22.3				
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	5.0	19.0	5.0	18.0	5.5	18.5	5.0	18.0				
Max Q Clear Time (g_c+1), s	3.2	11.3	3.8	13.1	7.3	9.4	2.1	8.3				
Green Ext Time (p_c), s	0.0	1.5	0.0	1.7	0.0	1.1	0.0	1.5				
Intersection Summary												
HCM 7th Control Delay, s/veh				21.7								
HCM 7th LOS				C								
Notes												
User approved changes to right turn type.												

Timings

2: Market Street & University Avenue

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	48	435	78	318	104	763	146	180	685	49
Future Volume (vph)	48	435	78	318	104	763	146	180	685	49
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	9.5	22.5	9.5	22.5	9.5	23.0	23.0	10.0	23.5	23.5
Total Split (%)	14.6%	34.6%	14.6%	34.6%	14.6%	35.4%	35.4%	15.4%	36.2%	36.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effect Green (s)	5.0	14.6	5.0	16.5	6.9	19.6	19.6	9.7	24.6	24.6
Actuated g/C Ratio	0.08	0.22	0.08	0.25	0.11	0.30	0.30	0.15	0.38	0.38
v/c Ratio	0.36	0.65	0.59	0.46	0.57	0.73	0.25	0.70	0.52	0.07
Control Delay (s/veh)	32.6	31.0	48.9	19.0	44.2	25.9	3.6	49.3	19.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.6	31.0	48.9	19.0	44.2	25.9	3.6	49.3	19.9	0.2
LOS	C	C	D	B	D	C	A	D	B	A
Approach Delay (s/veh)		31.2		23.8		24.5			24.7	
Approach LOS		C		C		C			C	

Intersection Summary

Cycle Length: 65

Actuated Cycle Length: 65

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay (s/veh): 25.7

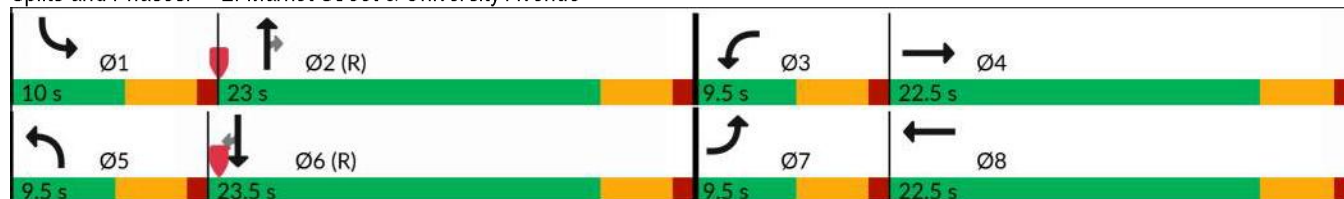
Intersection LOS: C

Intersection Capacity Utilization 64.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Market Street & University Avenue



HCM 7th Signalized Intersection Summary

2: Market Street & University Avenue

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	435	73	78	318	93	104	763	146	180	685	49
Future Volume (veh/h)	48	435	73	78	318	93	104	763	146	180	685	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	49	444	74	80	324	95	106	779	149	184	699	50
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	80	613	102	105	584	168	135	1346	600	151	1377	614
Arrive On Green	0.01	0.07	0.07	0.06	0.21	0.21	0.08	0.38	0.38	0.08	0.39	0.39
Sat Flow, veh/h	1781	3051	505	1781	2721	785	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	49	257	261	80	210	209	106	779	149	184	699	50
Grp Sat Flow(s),veh/h/ln	1781	1777	1779	1781	1777	1729	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	1.8	9.2	9.3	2.9	6.8	7.0	3.8	11.3	4.2	5.5	9.8	1.3
Cycle Q Clear(g_c), s	1.8	9.2	9.3	2.9	6.8	7.0	3.8	11.3	4.2	5.5	9.8	1.3
Prop In Lane	1.00		0.28	1.00		0.45	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	80	357	357	105	381	371	135	1346	600	151	1377	614
V/C Ratio(X)	0.61	0.72	0.73	0.76	0.55	0.56	0.78	0.58	0.25	1.22	0.51	0.08
Avail Cap(c_a), veh/h	137	492	493	137	492	479	137	1346	600	151	1377	614
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)	0.79	0.79	0.79	1.00	1.00	1.00	0.72	0.72	0.72	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.4	28.6	28.6	30.1	22.7	22.8	29.5	16.1	13.8	29.7	15.2	12.6
Incr Delay (d2), s/veh	5.8	2.6	2.7	16.7	1.2	1.3	18.6	1.3	0.7	144.7	1.3	0.3
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	0.9	4.4	4.5	1.7	2.8	2.8	2.3	4.4	1.5	8.3	3.8	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	37.2	31.1	31.3	46.9	24.0	24.2	48.1	17.4	14.6	174.4	16.5	12.9
LnGrp LOS	D	C	C	D	C	C	D	B	B	F	B	B
Approach Vol, veh/h	567				499		1034				933	
Approach Delay, s/veh	31.7				27.7		20.1				47.5	
Approach LOS	C				C		C				D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	29.1	8.3	17.6	9.4	29.7	7.4	18.4				
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	5.5	18.5	5.0	18.0	5.0	19.0	5.0	18.0				
Max Q Clear Time (g_c+I1), s	7.5	13.3	4.9	11.3	5.8	11.8	3.8	9.0				
Green Ext Time (p_c), s	0.0	2.6	0.0	1.7	0.0	2.8	0.0	1.7				
Intersection Summary												
HCM 7th Control Delay, s/veh			32.0									
HCM 7th LOS			C									

Timings

3: Brockton Avenue & 14th Street

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	16	97	216	207	5	407	263	96	502	12
Future Volume (vph)	16	97	216	207	5	407	263	96	502	12
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	3	1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	9.5	9.5	22.5	22.5
Total Split (s)	9.5	22.5	10.0	23.0	9.5	26.5	10.0	11.0	28.0	28.0
Total Split (%)	13.6%	32.1%	14.3%	32.9%	13.6%	37.9%	14.3%	15.7%	40.0%	40.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	None	C-Max	C-Max
Act Effect Green (s)	5.0	10.4	6.5	17.5	5.5	31.0	43.0	8.2	39.7	39.7
Actuated g/C Ratio	0.07	0.15	0.09	0.25	0.08	0.44	0.61	0.12	0.57	0.57
v/c Ratio	0.13	0.43	0.70	0.72	0.04	0.51	0.25	0.48	0.49	0.01
Control Delay (s/veh)	32.9	27.1	45.9	30.3	30.6	20.2	2.3	38.5	14.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.9	27.1	45.9	30.3	30.6	20.2	2.3	38.5	14.9	0.0
LOS	C	C	D	C	C	C	A	D	B	A
Approach Delay (s/veh)		27.8		36.5		13.3			18.4	
Approach LOS		C		D		B			B	

Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay (s/veh): 22.3

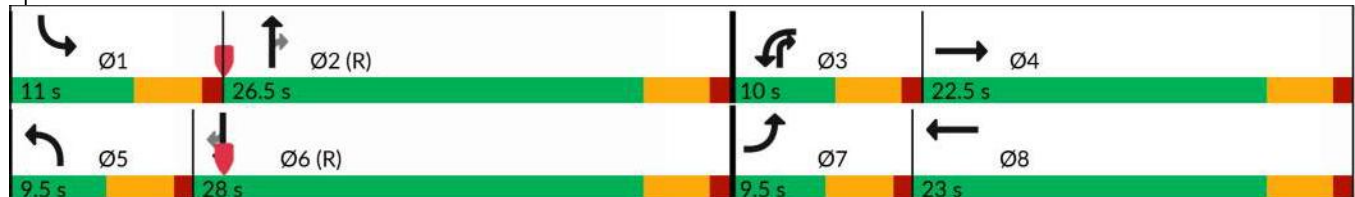
Intersection LOS: C

Intersection Capacity Utilization 60.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Brockton Avenue & 14th Street



HCM 7th Signalized Intersection Summary

3: Brockton Avenue & 14th Street

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	97	19	216	207	123	5	407	263	96	502	12
Future Volume (veh/h)	16	97	19	216	207	123	5	407	263	96	502	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	100	20	223	213	127	5	420	271	99	518	12
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	34	250	50	272	247	147	12	800	803	127	921	781
Arrive On Green	0.02	0.17	0.17	0.08	0.22	0.22	0.01	0.43	0.43	0.07	0.49	0.49
Sat Flow, veh/h	1781	1513	303	3456	1098	655	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	16	0	120	223	0	340	5	420	271	99	518	12
Grp Sat Flow(s),veh/h/ln	1781	0	1816	1728	0	1753	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.6	0.0	4.1	4.4	0.0	13.1	0.2	11.6	7.1	3.8	13.6	0.3
Cycle Q Clear(g_c), s	0.6	0.0	4.1	4.4	0.0	13.1	0.2	11.6	7.1	3.8	13.6	0.3
Prop In Lane	1.00		0.17	1.00		0.37	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	34	0	300	272	0	394	12	800	803	127	921	781
V/C Ratio(X)	0.47	0.00	0.40	0.82	0.00	0.86	0.42	0.52	0.34	0.78	0.56	0.02
Avail Cap(c_a), veh/h	127	0	467	272	0	463	127	800	803	165	921	781
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	1.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	34.0	0.0	26.1	31.8	0.0	26.1	34.6	14.8	10.3	32.0	12.5	9.1
Incr Delay (d2), s/veh	9.8	0.0	0.9	17.9	0.0	13.8	22.4	2.5	1.1	14.9	2.3	0.0
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	0.4	0.0	1.8	2.5	0.0	6.6	0.2	5.0	2.4	2.1	5.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	43.7	0.0	27.0	49.7	0.0	39.9	57.0	17.2	11.4	46.9	14.8	9.1
LnGrp LOS	D		C	D		D	E	B	B	D	B	A
Approach Vol, veh/h	136			563			696			629		
Approach Delay, s/veh	29.0			43.8			15.3			19.7		
Approach LOS	C			D			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.5	34.5	10.0	16.1	5.0	39.0	5.8	20.2				
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	6.5	22.0	5.5	18.0	5.0	23.5	5.0	18.5				
Max Q Clear Time (g_c+1), s	5.8	13.6	6.4	6.1	2.2	15.6	2.6	15.1				
Green Ext Time (p_c), s	0.0	2.4	0.0	0.4	0.0	2.1	0.0	0.7				
Intersection Summary												
HCM 7th Control Delay, s/veh	25.5											
HCM 7th LOS	C											
Notes												
User approved changes to right turn type.												

Timings

4: Market Street & 14th Street

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	60	438	264	473	64	594	243	184	694	56
Future Volume (vph)	60	438	264	473	64	594	243	184	694	56
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	11.4	22.5	19.0	30.1	9.6	23.5	23.5	15.0	28.9	28.9
Total Split (%)	14.3%	28.1%	23.8%	37.6%	12.0%	29.4%	29.4%	18.8%	36.1%	36.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effect Green (s)	6.6	16.0	14.1	25.6	5.8	20.9	20.9	11.0	28.1	28.1
Actuated g/C Ratio	0.08	0.20	0.18	0.32	0.07	0.26	0.26	0.14	0.35	0.35
v/c Ratio	0.42	0.72	0.87	0.50	0.52	0.66	0.41	0.79	0.58	0.08
Control Delay (s/veh)	44.1	34.8	60.8	23.2	52.3	31.2	5.3	57.9	24.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.1	34.8	60.8	23.2	52.3	31.2	5.3	57.9	24.8	0.2
LOS	D	C	E	C	D	C	A	E	C	A
Approach Delay (s/veh)		35.8		35.4		25.7			29.8	
Approach LOS		D		D		C			C	

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay (s/veh): 31.1

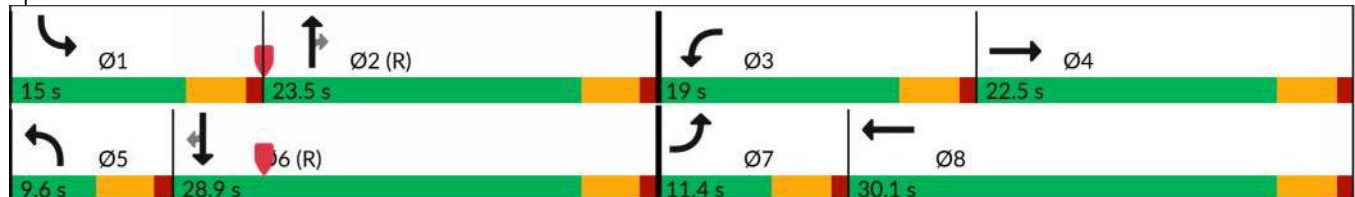
Intersection LOS: C

Intersection Capacity Utilization 70.1%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Market Street & 14th Street



HCM 7th Signalized Intersection Summary

4: Market Street & 14th Street

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	438	55	264	473	74	64	594	243	184	694	56
Future Volume (veh/h)	60	438	55	264	473	74	64	594	243	184	694	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	62	452	57	272	488	76	66	612	251	190	715	58
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	83	569	71	310	945	146	86	1046	467	227	1328	592
Arrive On Green	0.05	0.18	0.18	0.17	0.31	0.31	0.05	0.29	0.29	0.13	0.37	0.37
Sat Flow, veh/h	1781	3177	399	1781	3083	478	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	62	252	257	272	280	284	66	612	251	190	715	58
Grp Sat Flow(s),veh/h/ln	1781	1777	1799	1781	1777	1784	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	2.8	10.8	11.0	11.9	10.4	10.5	2.9	11.7	10.6	8.3	12.6	1.9
Cycle Q Clear(g_c), s	2.8	10.8	11.0	11.9	10.4	10.5	2.9	11.7	10.6	8.3	12.6	1.9
Prop In Lane	1.00		0.22	1.00		0.27	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	83	318	322	310	544	547	86	1046	467	227	1328	592
V/C Ratio(X)	0.74	0.79	0.80	0.88	0.51	0.52	0.77	0.58	0.54	0.84	0.54	0.10
Avail Cap(c_a), veh/h	154	400	405	323	569	571	114	1046	467	234	1328	592
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	0.94	0.94	0.94	0.84	0.84	0.84
Uniform Delay (d), s/veh	37.7	31.4	31.5	32.2	22.8	22.9	37.6	24.1	23.7	34.1	19.6	16.3
Incr Delay (d2), s/veh	12.3	8.3	8.7	22.2	0.8	0.8	19.2	2.3	4.1	19.2	1.3	0.3
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	1.5	5.2	5.4	6.9	4.3	4.3	1.7	5.1	4.3	4.7	5.2	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	50.0	39.7	40.1	54.4	23.6	23.6	56.9	26.3	27.8	53.3	21.0	16.6
LnGrp LOS	D	D	D	D	C	C	E	C	C	D	C	B
Approach Vol, veh/h	571			836			929			963		
Approach Delay, s/veh	41.0			33.6			28.9			27.1		
Approach LOS	D			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.7	28.1	18.4	18.8	8.3	34.4	8.2	29.0				
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	10.5	19.0	14.5	18.0	5.1	24.4	6.9	25.6				
Max Q Clear Time (g_c+I1), s	10.3	13.7	13.9	13.0	4.9	14.6	4.8	12.5				
Green Ext Time (p_c), s	0.0	2.3	0.1	1.4	0.0	3.6	0.0	2.9				
Intersection Summary												
HCM 7th Control Delay, s/veh	31.7											
HCM 7th LOS	C											

Timings

5: Brockton Avenue & Tequesquite Avenue

02/10/2025



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	84	7	81	14	37	406	12	628
Future Volume (vph)	84	7	81	14	37	406	12	628
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	9.5	22.5
Total Split (s)	9.6	22.5	9.6	22.5	9.5	23.4	9.5	23.4
Total Split (%)	14.8%	34.6%	14.8%	34.6%	14.6%	36.0%	14.6%	36.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	10.4	7.4	12.4	7.4	40.2	38.8	38.8	36.4
Actuated g/C Ratio	0.16	0.11	0.19	0.11	0.62	0.60	0.60	0.56
v/c Ratio	0.38	0.21	0.31	0.54	0.09	0.40	0.02	0.39
Control Delay (s/veh)	23.7	12.9	21.0	12.7	6.7	11.0	6.6	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	23.7	12.9	21.0	12.7	6.7	11.0	6.6	11.1
LOS	C	B	C	B	A	B	A	B
Approach Delay (s/veh)		20.0		15.4		10.6		11.0
Approach LOS		B		B		B		B

Intersection Summary

Cycle Length: 65

Actuated Cycle Length: 65

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.54

Intersection Signal Delay (s/veh): 12.3

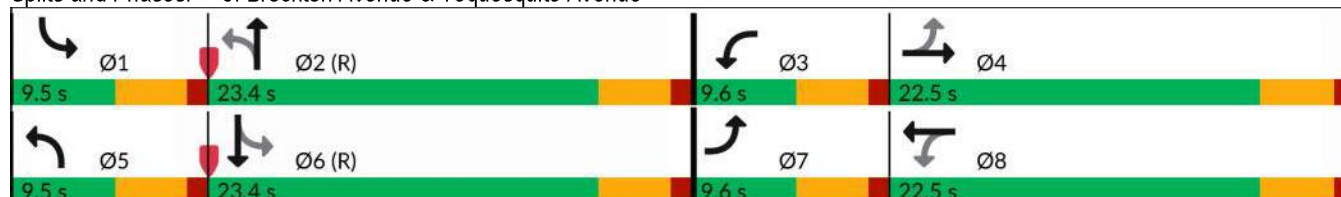
Intersection LOS: B

Intersection Capacity Utilization 56.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 5: Brockton Avenue & Tequesquite Avenue



HCM 7th Signalized Intersection Summary

5: Brockton Avenue & Tequesquite Avenue

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	7	38	81	14	151	37	406	12	12	628	86
Future Volume (veh/h)	84	7	38	81	14	151	37	406	12	12	628	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	7	40	86	15	161	39	432	13	13	668	91
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	268	35	201	382	20	213	418	904	27	464	1501	204
Arrive On Green	0.06	0.15	0.15	0.06	0.15	0.15	0.04	0.50	0.50	0.02	0.48	0.48
Sat Flow, veh/h	1781	242	1380	1781	137	1469	1781	1806	54	1781	3143	428
Grp Volume(v), veh/h	89	0	47	86	0	176	39	0	445	13	377	382
Grp Sat Flow(s),veh/h/ln	1781	0	1622	1781	0	1606	1781	0	1861	1781	1777	1793
Q Serve(g_s), s	2.7	0.0	1.7	2.6	0.0	6.8	0.7	0.0	10.2	0.2	9.2	9.2
Cycle Q Clear(g_c), s	2.7	0.0	1.7	2.6	0.0	6.8	0.7	0.0	10.2	0.2	9.2	9.2
Prop In Lane	1.00		0.85	1.00		0.91	1.00		0.03	1.00		0.24
Lane Grp Cap(c), veh/h	268	0	237	382	0	233	418	0	931	464	849	857
V/C Ratio(X)	0.33	0.00	0.20	0.22	0.00	0.76	0.09	0.00	0.48	0.03	0.44	0.45
Avail Cap(c_a), veh/h	299	0	449	414	0	445	485	0	931	572	849	857
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	0.97	0.00	0.97	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.9	0.0	24.4	21.6	0.0	26.7	8.5	0.0	10.7	9.0	11.3	11.3
Incr Delay (d2), s/veh	0.7	0.0	0.4	0.3	0.0	4.9	0.1	0.0	1.7	0.0	1.7	1.7
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	1.1	0.0	0.6	1.1	0.0	2.8	0.2	0.0	4.0	0.1	3.5	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.6	0.0	24.8	21.9	0.0	31.6	8.5	0.0	12.4	9.0	12.9	12.9
LnGrp LOS	C		C	C		C	A		B	A	B	B
Approach Vol, veh/h	136			262			484			772		
Approach Delay, s/veh	23.4			28.4			12.1			12.9		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.5	37.0	8.4	14.0	7.0	35.5	8.5	13.9				
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	5.0	18.9	5.1	18.0	5.0	18.9	5.1	18.0				
Max Q Clear Time (g_c+I1), s	2.2	12.2	4.6	3.7	2.7	11.2	4.7	8.8				
Green Ext Time (p_c), s	0.0	1.5	0.0	0.1	0.0	2.9	0.0	0.6				
Intersection Summary												
HCM 7th Control Delay, s/veh	16.0											
HCM 7th LOS	B											

Timings

6: Market Street & 15th Street

02/10/2025



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	92	10	62	4	26	757	12	912
Future Volume (vph)	92	10	62	4	26	757	12	912
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5
Total Split (s)	22.6	22.6	22.6	22.6	9.6	27.8	9.6	27.8
Total Split (%)	37.7%	37.7%	37.7%	37.7%	16.0%	46.3%	16.0%	46.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	9.7	9.7	9.7	9.7	6.5	41.9	6.1	39.3
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.11	0.70	0.10	0.66
v/c Ratio	0.46	0.18	0.31	0.17	0.15	0.35	0.07	0.47
Control Delay (s/veh)	28.6	10.2	24.6	8.9	25.4	6.7	25.0	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.6	10.2	24.6	8.9	25.4	6.7	25.0	9.5
LOS	C	B	C	A	C	A	C	A
Approach Delay (s/veh)		22.0		17.8		7.3		9.7
Approach LOS		C		B		A		A

Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.47

Intersection Signal Delay (s/veh): 10.0

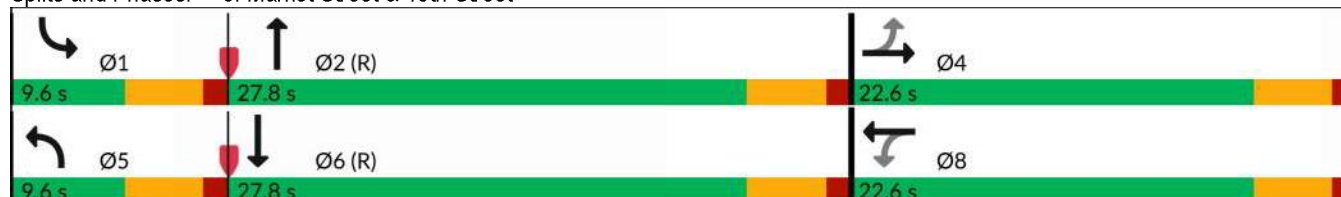
Intersection LOS: B

Intersection Capacity Utilization 47.2%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 6: Market Street & 15th Street



HCM 7th Signalized Intersection Summary

6: Market Street & 15th Street

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	10	41	62	4	44	26	757	33	12	912	85
Future Volume (veh/h)	92	10	41	62	4	44	26	757	33	12	912	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	100	11	45	67	4	48	28	823	36	13	991	92
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	268	44	181	265	17	204	55	2153	94	29	1992	185
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.03	0.62	0.62	0.02	0.61	0.61
Sat Flow, veh/h	1352	321	1313	1348	123	1480	1781	3468	152	1781	3287	305
Grp Volume(v), veh/h	100	0	56	67	0	52	28	422	437	13	536	547
Grp Sat Flow(s),veh/h/ln	1352	0	1634	1348	0	1604	1781	1777	1843	1781	1777	1815
Q Serve(g_s), s	4.3	0.0	1.8	2.8	0.0	1.7	0.9	7.1	7.1	0.4	10.2	10.2
Cycle Q Clear(g_c), s	6.0	0.0	1.8	4.6	0.0	1.7	0.9	7.1	7.1	0.4	10.2	10.2
Prop In Lane	1.00		0.80	1.00		0.92	1.00		0.08	1.00		0.17
Lane Grp Cap(c), veh/h	268	0	226	265	0	221	55	1103	1144	29	1077	1100
V/C Ratio(X)	0.37	0.00	0.25	0.25	0.00	0.23	0.51	0.38	0.38	0.45	0.50	0.50
Avail Cap(c_a), veh/h	489	0	493	485	0	484	151	1103	1144	151	1077	1100
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	0.96	0.96	0.96	0.70	0.70	0.70
Uniform Delay (d), s/veh	25.7	0.0	23.1	25.1	0.0	23.0	28.6	5.7	5.7	29.2	6.7	6.7
Incr Delay (d2), s/veh	0.9	0.0	0.6	0.5	0.0	0.5	6.7	1.0	0.9	7.5	1.2	1.1
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	1.4	0.0	0.7	0.9	0.0	0.6	0.5	2.2	2.3	0.2	3.2	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	26.6	0.0	23.6	25.6	0.0	23.6	35.3	6.6	6.6	36.7	7.8	7.8
LnGrp LOS	C		C	C		C	D	A	A	D	A	A
Approach Vol, veh/h	156			119			887			1096		
Approach Delay, s/veh	25.5			24.7			7.5			8.2		
Approach LOS	C			C			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.5	41.7		12.8	6.4	40.9		12.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	23.3		18.1	5.1	23.3		18.1				
Max Q Clear Time (g_c+I1), s	2.4	9.1		8.0	2.9	12.2		6.6				
Green Ext Time (p_c), s	0.0	4.7		0.4	0.0	5.3		0.3				
Intersection Summary												
HCM 7th Control Delay, s/veh				10.0								
HCM 7th LOS				A								

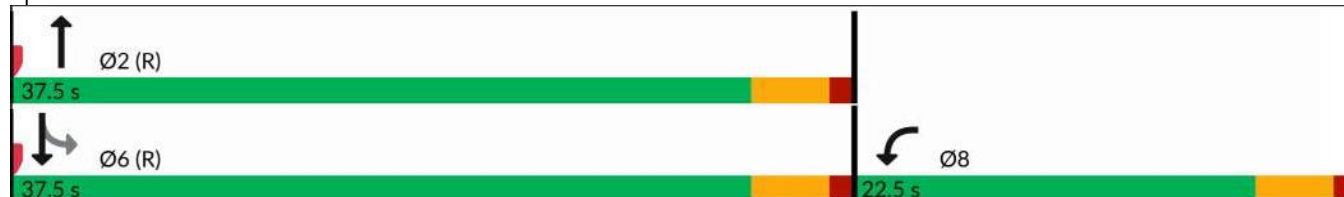
Timings

7: Brockton Avenue & Terracina Drive

02/10/2025

				
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	12	430	12	742
Future Volume (vph)	12	430	12	742
Turn Type	Prot	NA	Perm	NA
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	22.5	37.5	37.5	37.5
Total Split (%)	37.5%	62.5%	62.5%	62.5%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max
Act Effct Green (s)	6.3	53.5	53.5	53.5
Actuated g/C Ratio	0.11	0.89	0.89	0.89
v/c Ratio	0.18	0.28	0.02	0.47
Control Delay (s/veh)	16.6	2.2	2.1	3.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.6	2.2	2.1	3.4
LOS	B	A	A	A
Approach Delay (s/veh)	16.6	2.2		3.4
Approach LOS	B	A		A
Intersection Summary				
Cycle Length: 60				
Actuated Cycle Length: 60				
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green				
Natural Cycle: 60				
Control Type: Actuated-Coordinated				
Maximum v/c Ratio: 0.47				
Intersection Signal Delay (s/veh): 3.3			Intersection LOS: A	
Intersection Capacity Utilization 50.7%			ICU Level of Service A	
Analysis Period (min) 15				

Splits and Phases: 7: Brockton Avenue & Terracina Drive



HCM 7th Signalized Intersection Summary

7: Brockton Avenue & Terracina Drive

02/10/2025



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	12	21	430	4	12	742
Future Volume (veh/h)	12	21	430	4	12	742
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	22	453	4	13	781
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	23	38	1504	13	822	1519
Arrive On Green	0.04	0.04	0.81	0.81	0.81	0.81
Sat Flow, veh/h	599	1013	1851	16	934	1870
Grp Volume(v), veh/h	36	0	0	457	13	781
Grp Sat Flow(s),veh/h/ln	1658	0	0	1867	934	1870
Q Serve(g_s), s	1.3	0.0	0.0	3.6	0.2	8.1
Cycle Q Clear(g_c), s	1.3	0.0	0.0	3.6	3.9	8.1
Prop In Lane	0.36	0.61		0.01	1.00	
Lane Grp Cap(c), veh/h	62	0	0	1517	822	1519
V/C Ratio(X)	0.58	0.00	0.00	0.30	0.02	0.51
Avail Cap(c_a), veh/h	497	0	0	1517	822	1519
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.93	0.93
Uniform Delay (d), s/veh	28.4	0.0	0.0	1.4	1.9	1.8
Incr Delay (d2), s/veh	8.2	0.0	0.0	0.5	0.0	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	0.4	0.0	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	36.6	0.0	0.0	1.9	1.9	3.0
LnGrp LOS	D			A	A	A
Approach Vol, veh/h	36		457			794
Approach Delay, s/veh	36.6		1.9			3.0
Approach LOS	D		A			A
Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	53.2				53.2	6.8
Change Period (Y+Rc), s	4.5				4.5	4.5
Max Green Setting (Gmax), s	33.0				33.0	18.0
Max Q Clear Time (g_c+I1), s	5.6				10.1	3.3
Green Ext Time (p_c), s	3.1				6.2	0.0
Intersection Summary						
HCM 7th Control Delay, s/veh			3.5			
HCM 7th LOS			A			

Timings

8: Market Street & Terracina Drive

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	7	8	118	11	104	12	621	34	45	962
Future Volume (vph)	7	8	118	11	104	12	621	34	45	962
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5
Total Split (s)	9.5	22.5	11.0	24.0	24.0	9.5	26.1	26.1	10.4	27.0
Total Split (%)	13.6%	32.1%	15.7%	34.3%	34.3%	13.6%	37.3%	37.3%	14.9%	38.6%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max
Act Effect Green (s)	5.0	6.1	6.5	7.0	7.0	6.1	44.4	44.4	7.3	49.8
Actuated g/C Ratio	0.07	0.09	0.09	0.10	0.10	0.09	0.63	0.63	0.10	0.71
v/c Ratio	0.06	0.13	0.76	0.06	0.36	0.08	0.29	0.03	0.25	0.41
Control Delay (s/veh)	31.4	21.3	61.4	28.8	5.3	30.2	8.3	0.1	31.6	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	31.4	21.3	61.4	28.8	5.3	30.2	8.3	0.1	31.6	6.7
LOS	C	C	E	C	A	C	A	A	C	A
Approach Delay (s/veh)		23.9		34.9			8.3			7.8
Approach LOS		C		C			A			A

Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay (s/veh): 11.4

Intersection LOS: B

Intersection Capacity Utilization 55.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 8: Market Street & Terracina Drive



HCM 7th Signalized Intersection Summary

8: Market Street & Terracina Drive

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	8	11	118	11	104	12	621	34	45	962	13
Future Volume (veh/h)	7	8	11	118	11	104	12	621	34	45	962	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	7	8	12	124	12	109	13	654	36	47	1013	14
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	16	46	68	157	274	232	28	1935	863	76	2050	28
Arrive On Green	0.01	0.07	0.07	0.09	0.15	0.15	0.02	0.54	0.54	0.04	0.57	0.57
Sat Flow, veh/h	1781	675	1013	1781	1870	1585	1781	3554	1585	1781	3589	50
Grp Volume(v), veh/h	7	0	20	124	12	109	13	654	36	47	502	525
Grp Sat Flow(s),veh/h/ln	1781	0	1688	1781	1870	1585	1781	1777	1585	1781	1777	1861
Q Serve(g_s), s	0.3	0.0	0.8	4.8	0.4	4.4	0.5	7.2	0.7	1.8	11.8	11.8
Cycle Q Clear(g_c), s	0.3	0.0	0.8	4.8	0.4	4.4	0.5	7.2	0.7	1.8	11.8	11.8
Prop In Lane	1.00		0.60	1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	16	0	114	157	274	232	28	1935	863	76	1015	1064
V/C Ratio(X)	0.43	0.00	0.18	0.79	0.04	0.47	0.46	0.34	0.04	0.62	0.49	0.49
Avail Cap(c_a), veh/h	127	0	434	165	521	442	127	1935	863	150	1015	1064
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	1.00	1.00	1.00	1.00	1.00	0.88	0.88	0.88
Uniform Delay (d), s/veh	34.5	0.0	30.8	31.3	25.7	27.4	34.1	8.9	7.4	32.9	9.0	9.0
Incr Delay (d2), s/veh	17.1	0.0	0.7	21.4	0.1	1.5	11.0	0.5	0.1	6.9	1.5	1.4
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	0.2	0.0	0.3	2.9	0.2	1.7	0.3	2.5	0.2	0.9	4.2	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	51.6	0.0	31.5	52.7	25.7	28.9	45.2	9.4	7.5	39.9	10.5	10.4
LnGrp LOS	D		C	D	C	C	D	A	A	D	B	B
Approach Vol, veh/h	27			245			703			1074		
Approach Delay, s/veh	36.7			40.7			9.9			11.7		
Approach LOS	D			D			A			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.5	42.6	10.7	9.2	5.6	44.5	5.1	14.8				
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	5.9	21.6	6.5	18.0	5.0	22.5	5.0	19.5				
Max Q Clear Time (g_c+I1), s	3.8	9.2	6.8	2.8	2.5	13.8	2.3	6.4				
Green Ext Time (p_c), s	0.0	3.7	0.0	0.0	0.0	4.3	0.0	0.3				
Intersection Summary												
HCM 7th Control Delay, s/veh	14.9											
HCM 7th LOS	B											

HCM 7th TWSC
101: Brockton Avenue & EX South RCH Driveway

02/10/2025

Intersection

Int Delay, s/veh 0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↗↗			↗↗
Traffic Vol, veh/h	0	31	683	12	0	792
Future Vol, veh/h	0	31	683	12	0	792
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	25	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	33	727	13	0	843

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	370	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	*911	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	0	-
Mov Cap-1 Maneuver	-	*911	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.1	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	911
HCM Lane V/C Ratio	-	-	0.036
HCM Control Delay (s/veh)	-	-	9.1
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.1

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 7th TWSC
104: RCH Driveway & 14th Street

02/10/2025

Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑		↑
Traffic Vol, veh/h	519	16	42	508	0	77
Future Vol, veh/h	519	16	42	508	0	77
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	120	-	-	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	570	18	46	558	0	85
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	588	0	-	294
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.14	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.22	-	-	3.32
Pot Cap-1 Maneuver	-	-	1125	-	0	*968
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-	0	-	-	0
Mov Cap-1 Maneuver	-	-	1125	-	-	*968
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		0.64		9.08	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	968	-	-	1125	-	
HCM Lane V/C Ratio	0.087	-	-	0.041	-	
HCM Control Delay (s/veh)	9.1	-	-	8.3	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-	
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

Queuing and Blocking Report

Baseline

02/11/2025

Intersection: 1: Brockton Avenue & University Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	26	174	204	93	83	116	75	211	124	74	193	29
Average Queue (ft)	4	91	105	34	37	53	49	92	32	21	90	3
95th Queue (ft)	18	152	189	74	69	92	85	182	95	59	161	17
Link Distance (ft)		823	823		1114	1114		2322			397	397
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	95			100			50		100	50		
Storage Blk Time (%)		8		0	0		8	15	0	1	22	
Queuing Penalty (veh)		1		0	0		24	30	0	2	6	

Intersection: 2: Market Street & University Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	R	L	T
Maximum Queue (ft)	84	169	194	80	159	134	74	166	174	63	74	340
Average Queue (ft)	46	89	114	37	81	58	37	69	82	21	42	200
95th Queue (ft)	91	143	175	72	136	113	76	129	140	52	77	302
Link Distance (ft)		1114	1114		869	869		2312	2312	2312		404
Upstream Blk Time (%)												0
Queuing Penalty (veh)												0
Storage Bay Dist (ft)	60			195			50				50	
Storage Blk Time (%)	3	17			0		9	14			16	42
Queuing Penalty (veh)	4	8			0		21	6			75	25

Intersection: 2: Market Street & University Avenue

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	270	58
Average Queue (ft)	152	18
95th Queue (ft)	259	48
Link Distance (ft)	404	404
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report

Baseline

02/11/2025

Intersection: 3: Brockton Avenue & 14th Street

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	L	TR	L	T	R	L	T	R
Maximum Queue (ft)	94	169	123	130	141	52	197	108	75	450	104
Average Queue (ft)	17	88	71	77	99	8	125	42	51	160	10
95th Queue (ft)	53	154	110	121	147	34	206	81	88	348	58
Link Distance (ft)		353	132	132	132		180	180		2322	
Upstream Blk Time (%)			0	1	4		2				
Queuing Penalty (veh)			1	1	6		8				
Storage Bay Dist (ft)	70					50			50		100
Storage Blk Time (%)	0	17				1	30		24	22	0
Queuing Penalty (veh)	0	3				3	2		107	20	0

Intersection: 4: Market Street & 14th Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	R	L	T
Maximum Queue (ft)	115	177	188	160	335	325	102	185	189	132	125	220
Average Queue (ft)	56	100	120	126	159	161	42	91	102	57	63	102
95th Queue (ft)	103	157	175	175	291	273	87	145	162	103	120	172
Link Distance (ft)		924	924		364	364		646	646	646		2312
Upstream Blk Time (%)					0	0						
Queuing Penalty (veh)					0	0						
Storage Bay Dist (ft)	90			135			150				100	
Storage Blk Time (%)	1	11		15	4		0	1			3	10
Queuing Penalty (veh)	3	8		46	10		0	0			9	7

Intersection: 4: Market Street & 14th Street

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	196	88
Average Queue (ft)	111	34
95th Queue (ft)	174	71
Link Distance (ft)	2312	2312
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report

Baseline

02/11/2025

Intersection: 5: Brockton Avenue & Tequesquite Avenue

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	T	TR
Maximum Queue (ft)	124	213	65	105	79	410	68	111	127
Average Queue (ft)	79	48	21	39	30	128	25	34	39
95th Queue (ft)	128	141	55	74	67	307	54	85	94
Link Distance (ft)		559		432		917		272	272
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	100		100		55		100		
Storage Blk Time (%)	12	0		0	1	12	0	0	
Queuing Penalty (veh)	7	0		0	7	8	0	0	

Intersection: 6: Market Street & 15th Street

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	80	61	68	46	64	165	200	102	154	184
Average Queue (ft)	41	21	27	16	16	62	85	37	53	66
95th Queue (ft)	75	52	58	43	46	132	167	73	122	141
Link Distance (ft)		222		358		1220	1220		646	646
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	90		95		105			80		
Storage Blk Time (%)	0	0				1		1	2	
Queuing Penalty (veh)	0	0				0		2	1	

Intersection: 7: Brockton Avenue & Terracina Drive

Movement	WB	NB	SB	SB
Directions Served	LR	TR	L	T
Maximum Queue (ft)	88	194	61	198
Average Queue (ft)	43	35	33	40
95th Queue (ft)	77	120	61	134
Link Distance (ft)	1280	543		917
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			30	
Storage Blk Time (%)			13	4
Queuing Penalty (veh)			56	3

Queuing and Blocking Report

Baseline

02/11/2025

Intersection: 8: Market Street & Terracina Drive

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	75	152	22	29	49	73	211	189	80	148	158	132
Average Queue (ft)	43	47	1	4	19	10	74	55	20	77	34	38
95th Queue (ft)	79	111	9	20	46	43	162	150	69	134	103	97
Link Distance (ft)		1280		391			567	567			1220	1220
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	50		175		100	100			55	125		
Storage Blk Time (%)	12	8					3	5	0	3	0	
Queuing Penalty (veh)	10	7					1	12	1	8	0	

Intersection: 101: Brockton Avenue & EX South RCH Driveway

Movement	WB
Directions Served	R
Maximum Queue (ft)	45
Average Queue (ft)	14
95th Queue (ft)	41
Link Distance (ft)	121
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 102: Brockton Avenue & New North RCH Driveway

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Queuing and Blocking Report

Baseline

02/11/2025

Intersection: 103: Brockton Avenue & New Garage Egress

Movement	NB
Directions Served	T
Maximum Queue (ft)	127
Average Queue (ft)	12
95th Queue (ft)	63
Link Distance (ft)	170
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 104: RCH Driveway & 14th Street

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	R
Maximum Queue (ft)	6	27	100	26	85	69
Average Queue (ft)	0	2	46	1	8	34
95th Queue (ft)	6	14	86	14	45	58
Link Distance (ft)	132	132		924	924	99
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			120			
Storage Blk Time (%)			0			
Queuing Penalty (veh)			0			

Network Summary

Network wide Queuing Penalty: 560

Queuing and Blocking Report

Baseline

02/11/2025

Intersection: 1: Brockton Avenue & University Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	30	188	184	86	124	146	74	377	125	74	268	35
Average Queue (ft)	4	99	92	32	65	86	64	158	43	33	105	5
95th Queue (ft)	19	156	160	67	108	137	88	299	123	73	197	23
Link Distance (ft)		823	823		1114	1114		2322			397	397
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	95			100			50		100	50		
Storage Blk Time (%)		9		0	1		17	24	0	2	27	
Queuing Penalty (veh)		0		0	0		72	71	0	5	14	

Intersection: 2: Market Street & University Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	R	L	T
Maximum Queue (ft)	85	192	208	102	138	138	74	378	364	198	75	423
Average Queue (ft)	49	116	132	46	74	61	62	179	181	58	72	269
95th Queue (ft)	99	175	192	90	120	111	86	308	312	131	83	407
Link Distance (ft)		1114	1114		869	869		2312	2312	2312		404
Upstream Blk Time (%)												1
Queuing Penalty (veh)												0
Storage Bay Dist (ft)	60			195			50				50	
Storage Blk Time (%)	4	28					34	37			62	27
Queuing Penalty (veh)	9	13					129	38			213	48

Intersection: 2: Market Street & University Avenue

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	352	59
Average Queue (ft)	199	21
95th Queue (ft)	334	50
Link Distance (ft)	404	404
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report

Baseline

02/11/2025

Intersection: 3: Brockton Avenue & 14th Street

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	L	TR	L	T	R	L	T	R
Maximum Queue (ft)	77	164	113	125	145	64	194	87	75	369	86
Average Queue (ft)	13	66	61	66	113	7	118	38	55	163	9
95th Queue (ft)	45	114	100	111	165	31	193	69	88	302	54
Link Distance (ft)		353	132	132	132		180	180		2322	
Upstream Blk Time (%)			0	0	9		1				
Queuing Penalty (veh)			0	1	15		5				
Storage Bay Dist (ft)	70					50			50		100
Storage Blk Time (%)	0	9					29		28	24	0
Queuing Penalty (veh)	0	1					1		145	26	0

Intersection: 4: Market Street & 14th Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	R	L	T
Maximum Queue (ft)	112	204	201	160	336	284	130	228	238	180	125	288
Average Queue (ft)	49	107	124	134	134	148	52	128	144	67	109	168
95th Queue (ft)	103	174	184	181	287	248	107	193	205	127	146	267
Link Distance (ft)		924	924		364	364		646	646	646		2312
Upstream Blk Time (%)					0	0						
Queuing Penalty (veh)					0	0						
Storage Bay Dist (ft)	90			135			150				100	
Storage Blk Time (%)	2	15		20	1		0	4			27	16
Queuing Penalty (veh)	4	9		47	3		0	3			93	30

Intersection: 4: Market Street & 14th Street

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	294	97
Average Queue (ft)	158	26
95th Queue (ft)	249	67
Link Distance (ft)	2312	2312
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report

Baseline

02/11/2025

Intersection: 5: Brockton Avenue & Tequesquite Avenue

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	T	TR
Maximum Queue (ft)	107	103	112	156	75	172	24	176	176
Average Queue (ft)	53	29	45	58	23	71	5	61	69
95th Queue (ft)	99	70	92	113	54	140	19	137	147
Link Distance (ft)		559		432		917		272	272
Upstream Blk Time (%)								0	
Queuing Penalty (veh)								0	
Storage Bay Dist (ft)	100		100		55		100		
Storage Blk Time (%)	2	0	1	1	1	8		3	
Queuing Penalty (veh)	1	0	2	1	3	3		0	

Intersection: 6: Market Street & 15th Street

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	104	65	99	61	70	148	162	79	201	236
Average Queue (ft)	49	28	39	26	21	47	68	12	89	113
95th Queue (ft)	90	58	80	53	54	104	135	44	178	208
Link Distance (ft)		222		358		1220	1220		646	646
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	90		95		105			80		
Storage Blk Time (%)	1	0	1		0	0			5	
Queuing Penalty (veh)	1	0	1		0	0			1	

Intersection: 7: Brockton Avenue & Terracina Drive

Movement	WB	NB	SB	SB
Directions Served	LR	TR	L	T
Maximum Queue (ft)	58	100	35	173
Average Queue (ft)	24	17	5	29
95th Queue (ft)	55	65	25	110
Link Distance (ft)	1280	543		917
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			30	
Storage Blk Time (%)			1	3
Queuing Penalty (veh)			6	0

Queuing and Blocking Report

Baseline

02/11/2025

Intersection: 8: Market Street & Terracina Drive

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	20	61	139	42	68	27	125	115	32	84	166	181
Average Queue (ft)	4	17	63	10	36	4	46	23	1	26	59	70
95th Queue (ft)	15	46	112	34	62	16	101	74	17	66	139	154
Link Distance (ft)	1280		391		567		567			1220	1220	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	50	175		100		100	55		125			
Storage Blk Time (%)	0	1	0	0		1		1	0	1		
Queuing Penalty (veh)	0	0	0	0		0		0	0	0		

Intersection: 101: Brockton Avenue & EX South RCH Driveway

Movement	WB	SB
Directions Served	R	T
Maximum Queue (ft)	55	10
Average Queue (ft)	21	0
95th Queue (ft)	49	7
Link Distance (ft)	121	211
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 102: Brockton Avenue & New North RCH Driveway

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Queuing and Blocking Report

Baseline

02/11/2025

Intersection: 103: Brockton Avenue & New Garage Egress

Movement	NB
Directions Served	T
Maximum Queue (ft)	89
Average Queue (ft)	7
95th Queue (ft)	44
Link Distance (ft)	170
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 104: RCH Driveway & 14th Street

Movement	EB	WB	WB	WB	NB
Directions Served	T	L	T	T	R
Maximum Queue (ft)	6	61	21	140	68
Average Queue (ft)	0	16	1	29	31
95th Queue (ft)	4	47	15	97	58
Link Distance (ft)	132		924	924	99
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		120			
Storage Blk Time (%)			0		
Queuing Penalty (veh)			0		

Network Summary

Network wide Queuing Penalty: 1016

APPENDIX C-3

INTERSECTION ANALYSIS WORKSHEETS – OPENING YEAR 2026 PLUS PROJECT

Timings

1: Brockton Avenue & University Avenue

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	6	314	50	163	113	239	82	29	307	5
Future Volume (vph)	6	314	50	163	113	239	82	29	307	5
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4	3	8	5	2	3	1	6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	7	4	3	8	5	2	3	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	9.5	9.5	22.5	22.5
Total Split (s)	9.5	22.5	9.5	22.5	9.5	23.5	9.5	9.5	23.5	23.5
Total Split (%)	14.6%	34.6%	14.6%	34.6%	14.6%	36.2%	14.6%	14.6%	36.2%	36.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	None	C-Max	C-Max
Act Effect Green (s)	18.1	14.1	20.8	19.8	32.5	30.3	39.8	30.1	25.5	25.5
Actuated g/C Ratio	0.28	0.22	0.32	0.30	0.50	0.47	0.61	0.46	0.39	0.39
v/c Ratio	0.02	0.70	0.26	0.21	0.33	0.33	0.10	0.06	0.51	0.01
Control Delay (s/veh)	11.7	17.1	23.1	23.6	12.8	16.2	3.0	10.4	21.6	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	11.7	17.1	23.1	23.6	12.8	16.2	3.0	10.4	21.6	0.0
LOS	B	B	C	C	B	B	A	B	C	A
Approach Delay (s/veh)		17.0		23.5		12.8			20.3	
Approach LOS		B		C		B			C	

Intersection Summary

Cycle Length: 65

Actuated Cycle Length: 65

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay (s/veh): 17.5

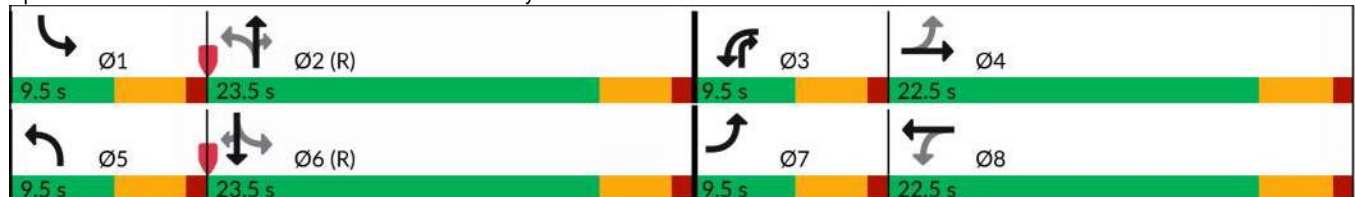
Intersection LOS: B

Intersection Capacity Utilization 57.8%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Brockton Avenue & University Avenue



HCM 7th Signalized Intersection Summary

1: Brockton Avenue & University Avenue

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	314	234	50	163	23	113	239	82	29	307	5
Future Volume (veh/h)	6	314	234	50	163	23	113	239	82	29	307	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	7	378	282	60	196	28	136	288	99	35	370	6
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	396	468	345	243	881	124	442	741	709	460	676	573
Arrive On Green	0.01	0.24	0.24	0.05	0.28	0.28	0.07	0.40	0.40	0.04	0.36	0.36
Sat Flow, veh/h	1781	1952	1437	1781	3128	440	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	7	344	316	60	110	114	136	288	99	35	370	6
Grp Sat Flow(s),veh/h/ln	1781	1777	1612	1781	1777	1791	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.2	11.8	12.1	1.6	3.1	3.2	3.1	7.1	2.4	0.8	10.2	0.2
Cycle Q Clear(g_c), s	0.2	11.8	12.1	1.6	3.1	3.2	3.1	7.1	2.4	0.8	10.2	0.2
Prop In Lane	1.00		0.89	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	396	426	387	243	500	504	442	741	709	460	676	573
V/C Ratio(X)	0.02	0.81	0.82	0.25	0.22	0.23	0.31	0.39	0.14	0.08	0.55	0.01
Avail Cap(c_a), veh/h	517	492	446	290	500	504	453	741	709	533	676	573
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	0.90	0.90	0.90	0.52	0.52	0.52	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.4	23.3	23.4	18.0	17.9	17.9	12.3	14.0	10.6	12.2	16.5	13.3
Incr Delay (d2), s/veh	0.0	8.4	10.1	0.5	0.2	0.2	0.2	0.8	0.2	0.1	3.2	0.0
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	0.1	5.6	5.4	0.6	1.2	1.3	1.1	2.9	0.8	0.3	4.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.4	31.7	33.5	18.5	18.1	18.1	12.5	14.8	10.8	12.3	19.7	13.3
LnGrp LOS	B	C	C	B	B	B	B	B	B	B	B	B
Approach Vol, veh/h	667			284			523			411		
Approach Delay, s/veh	32.4			18.2			13.4			19.0		
Approach LOS	C			B			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.8	30.3	7.8	20.1	9.1	28.0	5.1	22.8				
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	5.0	19.0	5.0	18.0	5.0	19.0	5.0	18.0				
Max Q Clear Time (g_c+I1), s	2.8	9.1	3.6	14.1	5.1	12.2	2.2	5.2				
Green Ext Time (p_c), s	0.0	1.4	0.0	1.5	0.0	1.2	0.0	0.9				
Intersection Summary												
HCM 7th Control Delay, s/veh	22.1											
HCM 7th LOS	C											
Notes												
User approved changes to right turn type.												

Timings

2: Market Street & University Avenue

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	46	308	75	295	43	467	63	59	960	57
Future Volume (vph)	46	308	75	295	43	467	63	59	960	57
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	9.5	22.5	9.5	22.5	9.5	23.5	23.5	9.5	23.5	23.5
Total Split (%)	14.6%	34.6%	14.6%	34.6%	14.6%	36.2%	36.2%	14.6%	36.2%	36.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effect Green (s)	5.0	13.4	5.0	15.3	6.3	28.2	28.2	6.5	28.3	28.3
Actuated g/C Ratio	0.08	0.21	0.08	0.24	0.10	0.43	0.43	0.10	0.44	0.44
v/c Ratio	0.38	0.62	0.61	0.51	0.28	0.34	0.09	0.37	0.69	0.08
Control Delay (s/veh)	33.7	26.9	50.7	20.0	31.9	16.2	0.2	34.5	23.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.7	26.9	50.7	20.0	31.9	16.2	0.2	34.5	23.5	0.2
LOS	C	C	D	B	C	B	A	C	C	A
Approach Delay (s/veh)		27.6		24.9		15.6			22.8	
Approach LOS		C		C		B			C	

Intersection Summary

Cycle Length: 65

Actuated Cycle Length: 65

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay (s/veh): 22.5

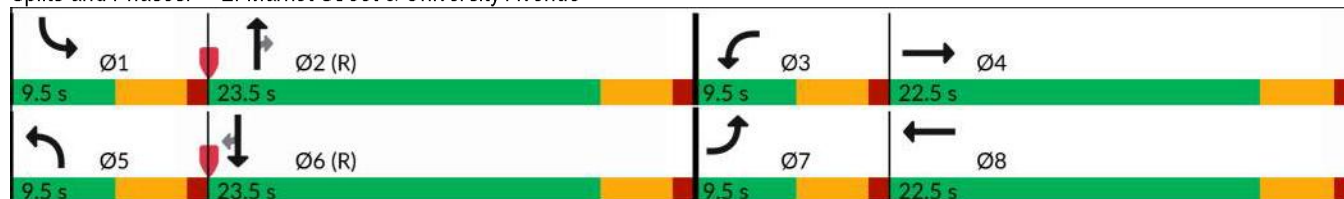
Intersection LOS: C

Intersection Capacity Utilization 62.1%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2: Market Street & University Avenue



HCM 7th Signalized Intersection Summary

2: Market Street & University Avenue

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	308	117	75	295	97	43	467	63	59	960	57
Future Volume (veh/h)	46	308	117	75	295	97	43	467	63	59	960	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	51	342	130	83	328	108	48	519	70	66	1067	63
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	82	484	181	106	540	175	79	1488	664	95	1520	678
Arrive On Green	0.02	0.06	0.06	0.06	0.20	0.20	0.04	0.42	0.42	0.05	0.43	0.43
Sat Flow, veh/h	1781	2531	946	1781	2639	854	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	51	238	234	83	219	217	48	519	70	66	1067	63
Grp Sat Flow(s),veh/h/ln	1781	1777	1700	1781	1777	1717	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	1.9	8.5	8.8	3.0	7.3	7.5	1.7	6.5	1.7	2.4	16.0	1.5
Cycle Q Clear(g_c), s	1.9	8.5	8.8	3.0	7.3	7.5	1.7	6.5	1.7	2.4	16.0	1.5
Prop In Lane	1.00		0.56	1.00		0.50	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	82	340	325	106	364	351	79	1488	664	95	1520	678
V/C Ratio(X)	0.62	0.70	0.72	0.78	0.60	0.62	0.60	0.35	0.11	0.69	0.70	0.09
Avail Cap(c_a), veh/h	137	492	471	137	492	475	137	1488	664	137	1520	678
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)	0.77	0.77	0.77	1.00	1.00	1.00	0.83	0.83	0.83	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.4	28.6	28.7	30.1	23.5	23.5	30.5	12.9	11.5	30.2	15.2	11.1
Incr Delay (d2), s/veh	5.7	2.0	2.3	19.2	1.6	1.8	6.0	0.5	0.3	8.6	2.7	0.3
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	0.9	4.0	4.0	1.8	3.0	3.0	0.8	2.4	0.6	1.2	6.3	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	37.1	30.7	31.1	49.3	25.1	25.3	36.5	13.4	11.8	38.8	18.0	11.4
LnGrp LOS	D	C	C	D	C	C	D	B	B	D	B	B
Approach Vol, veh/h	523			519			637			1196		
Approach Delay, s/veh	31.5			29.0			15.0			18.8		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	31.7	8.4	16.9	7.4	32.3	7.5	17.8				
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	5.0	19.0	5.0	18.0	5.0	19.0	5.0	18.0				
Max Q Clear Time (g_c+I1), s	4.4	8.5	5.0	10.8	3.7	18.0	3.9	9.5				
Green Ext Time (p_c), s	0.0	2.7	0.0	1.7	0.0	0.7	0.0	1.7				
Intersection Summary												
HCM 7th Control Delay, s/veh	22.1											
HCM 7th LOS	C											

Timings

3: Brockton Avenue & 14th Street

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	18	142	296	97	9	425	313	107	421	12
Future Volume (vph)	18	142	296	97	9	425	313	107	421	12
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	3	1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	9.5	9.5	22.5	22.5
Total Split (s)	9.5	22.5	11.4	24.4	9.5	26.6	11.4	9.5	26.6	26.6
Total Split (%)	13.6%	32.1%	16.3%	34.9%	13.6%	38.0%	16.3%	13.6%	38.0%	38.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	None	C-Max	C-Max
Act Effect Green (s)	5.0	12.2	6.9	19.8	5.8	23.3	34.7	9.5	35.3	35.3
Actuated g/C Ratio	0.07	0.17	0.10	0.28	0.08	0.33	0.50	0.14	0.50	0.50
v/c Ratio	0.17	0.58	1.04	0.49	0.08	0.82	0.38	0.53	0.53	0.02
Control Delay (s/veh)	33.8	31.8	89.8	27.6	30.8	35.1	2.6	41.0	17.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.8	31.8	89.8	27.6	30.8	35.1	2.6	41.0	17.8	0.0
LOS	C	C	F	C	C	D	A	D	B	A
Approach Delay (s/veh)		32.0		62.7		21.5			22.0	
Approach LOS		C		E		C			C	

Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.04

Intersection Signal Delay (s/veh): 33.4

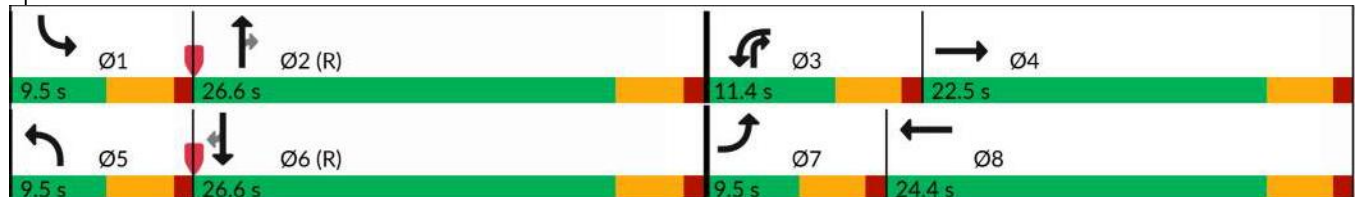
Intersection LOS: C

Intersection Capacity Utilization 60.7%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Brockton Avenue & 14th Street



HCM 7th Signalized Intersection Summary

3: Brockton Avenue & 14th Street

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	142	17	296	97	132	9	425	313	107	421	12
Future Volume (veh/h)	18	142	17	296	97	132	9	425	313	107	421	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	169	20	352	115	157	11	506	373	127	501	14
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	43	224	27	341	151	207	25	816	848	127	924	783
Arrive On Green	0.02	0.14	0.14	0.03	0.07	0.07	0.01	0.44	0.44	0.07	0.49	0.49
Sat Flow, veh/h	1781	1641	194	3456	716	978	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	21	0	189	352	0	272	11	506	373	127	501	14
Grp Sat Flow(s),veh/h/ln	1781	0	1835	1728	0	1694	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.8	0.0	6.9	6.9	0.0	11.0	0.4	14.6	10.0	5.0	13.0	0.3
Cycle Q Clear(g_c), s	0.8	0.0	6.9	6.9	0.0	11.0	0.4	14.6	10.0	5.0	13.0	0.3
Prop In Lane	1.00		0.11	1.00		0.58	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	43	0	251	341	0	358	25	816	848	127	924	783
V/C Ratio(X)	0.49	0.00	0.75	1.03	0.00	0.76	0.45	0.62	0.44	1.00	0.54	0.02
Avail Cap(c_a), veh/h	127	0	472	341	0	482	127	816	848	127	924	783
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	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	1.00	1.00	0.88	0.88	0.88
Uniform Delay (d), s/veh	33.7	0.0	29.1	33.9	0.0	30.8	34.3	15.2	9.9	32.5	12.2	9.0
Incr Delay (d2), s/veh	8.5	0.0	4.6	57.6	0.0	4.8	12.3	3.5	1.7	74.3	2.0	0.0
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	0.4	0.0	3.2	5.7	0.0	5.4	0.3	6.4	3.4	4.7	5.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	42.3	0.0	33.7	91.5	0.0	35.7	46.6	18.8	11.6	106.8	14.3	9.1
LnGrp LOS	D		C	F		D	D	B	B	F	B	A
Approach Vol, veh/h	210		624				890			642		
Approach Delay, s/veh	34.5		67.2				16.1			32.4		
Approach LOS	C		E				B			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.5	35.0	11.4	14.1	5.5	39.1	6.2	19.3				
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	5.0	22.1	6.9	18.0	5.0	22.1	5.0	19.9				
Max Q Clear Time (g_c+1), s	7.0	16.6	8.9	8.9	2.4	15.0	2.8	13.0				
Green Ext Time (p_c), s	0.0	2.3	0.0	0.6	0.0	1.9	0.0	0.9				
Intersection Summary												
HCM 7th Control Delay, s/veh			35.6									
HCM 7th LOS			D									
Notes												
User approved changes to right turn type.												

Timings

4: Market Street & 14th Street

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	83	477	236	643	55	500	200	75	551	118
Future Volume (vph)	83	477	236	643	55	500	200	75	551	118
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	9.9	22.5	15.2	27.8	9.5	22.8	22.8	9.5	22.8	22.8
Total Split (%)	14.1%	32.1%	21.7%	39.7%	13.6%	32.6%	32.6%	13.6%	32.6%	32.6%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effect Green (s)	5.4	16.5	10.7	23.7	5.4	21.4	21.4	5.6	23.6	23.6
Actuated g/C Ratio	0.08	0.24	0.15	0.34	0.08	0.31	0.31	0.08	0.34	0.34
v/c Ratio	0.68	0.70	0.97	0.73	0.45	0.51	0.34	0.59	0.51	0.19
Control Delay (s/veh)	54.2	32.3	81.3	23.9	42.4	23.5	4.6	51.6	22.2	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	54.2	32.3	81.3	23.9	42.4	23.5	4.6	51.6	22.2	0.7
LOS	D	C	F	C	D	C	A	D	C	A
Approach Delay (s/veh)		35.3		37.2		19.8			21.7	
Approach LOS		D		D		B			C	

Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay (s/veh): 28.9

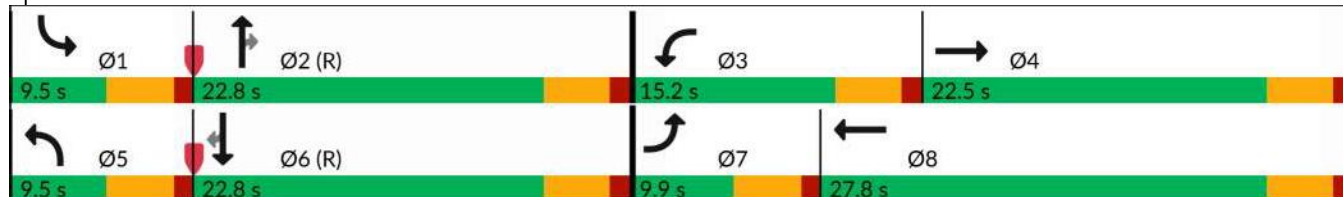
Intersection LOS: C

Intersection Capacity Utilization 62.1%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 4: Market Street & 14th Street



HCM 7th Signalized Intersection Summary

4: Market Street & 14th Street

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	477	45	236	643	143	55	500	200	75	551	118
Future Volume (veh/h)	83	477	45	236	643	143	55	500	200	75	551	118
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	92	530	50	262	714	159	61	556	222	83	612	131
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	119	688	65	272	855	190	88	1140	508	106	1175	524
Arrive On Green	0.02	0.07	0.07	0.15	0.30	0.30	0.05	0.32	0.32	0.06	0.33	0.33
Sat Flow, veh/h	1781	3283	309	1781	2888	643	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	92	286	294	262	439	434	61	556	222	83	612	131
Grp Sat Flow(s),veh/h/ln	1781	1777	1815	1781	1777	1755	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	3.6	11.1	11.1	10.2	16.2	16.2	2.4	8.8	7.7	3.2	9.7	4.2
Cycle Q Clear(g_c), s	3.6	11.1	11.1	10.2	16.2	16.2	2.4	8.8	7.7	3.2	9.7	4.2
Prop In Lane	1.00		0.17	1.00		0.37	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	119	372	380	272	526	519	88	1140	508	106	1175	524
V/C Ratio(X)	0.78	0.77	0.77	0.96	0.84	0.84	0.69	0.49	0.44	0.78	0.52	0.25
Avail Cap(c_a), veh/h	137	457	467	272	591	584	127	1140	508	127	1175	524
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)	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.67	0.67	0.67
Uniform Delay (d), s/veh	33.7	30.9	30.9	29.4	23.0	23.1	32.7	19.1	18.8	32.5	18.9	17.1
Incr Delay (d2), s/veh	20.9	6.3	6.3	44.1	9.2	9.3	8.4	1.4	2.5	15.8	1.1	0.8
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	2.2	5.8	6.0	7.5	7.6	7.6	1.2	3.6	3.0	1.8	3.9	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	54.6	37.2	37.3	73.5	32.2	32.4	41.1	20.5	21.3	48.3	20.0	17.9
LnGrp LOS	D	D	D	E	C	C	D	C	C	D	C	B
Approach Vol, veh/h	672			1135			839			826		
Approach Delay, s/veh	39.6			41.8			22.2			22.5		
Approach LOS	D			D			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.7	26.9	15.2	19.2	8.0	27.7	9.2	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	5.0	18.3	10.7	18.0	5.0	18.3	5.4	23.3				
Max Q Clear Time (g_c+I1), s	5.2	10.8	12.2	13.1	4.4	11.7	5.6	18.2				
Green Ext Time (p_c), s	0.0	2.7	0.0	1.5	0.0	2.5	0.0	2.5				
Intersection Summary												
HCM 7th Control Delay, s/veh	32.1											
HCM 7th LOS	C											

Timings

5: Brockton Avenue & Tequesquite Avenue

02/10/2025



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	144	18	34	4	61	530	120	448
Future Volume (vph)	144	18	34	4	61	530	120	448
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	9.5	22.5
Total Split (s)	9.8	22.8	9.5	22.5	9.8	38.1	9.6	37.9
Total Split (%)	12.3%	28.5%	11.9%	28.1%	12.3%	47.6%	12.0%	47.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	12.5	9.3	11.1	7.2	49.3	42.5	54.4	46.8
Actuated g/C Ratio	0.16	0.12	0.14	0.09	0.62	0.53	0.68	0.59
v/c Ratio	0.95	0.28	0.20	0.50	0.15	0.78	0.43	0.34
Control Delay (s/veh)	86.3	19.5	27.0	14.7	6.0	24.6	8.8	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	86.3	19.5	27.0	14.7	6.0	24.6	8.8	10.3
LOS	F	B	C	B	A	C	A	B
Approach Delay (s/veh)		68.8		17.8		22.9		10.1
Approach LOS		E		B		C		B

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay (s/veh): 22.7

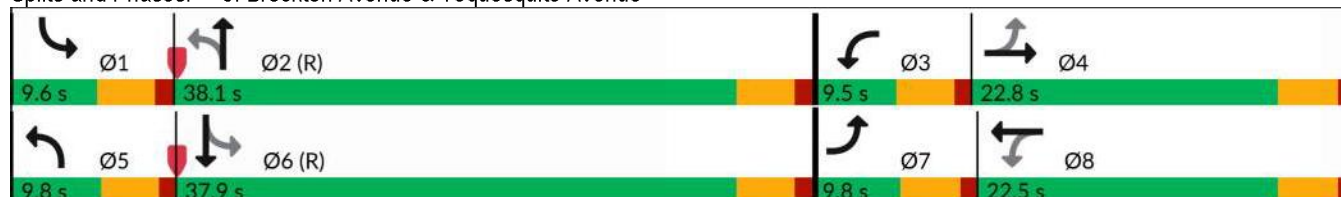
Intersection LOS: C

Intersection Capacity Utilization 65.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: Brockton Avenue & Tequesquite Avenue



HCM 7th Signalized Intersection Summary

5: Brockton Avenue & Tequesquite Avenue

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	18	33	34	4	99	61	530	76	120	448	105
Future Volume (veh/h)	144	18	33	34	4	99	61	530	76	120	448	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	180	22	41	42	5	124	76	662	95	150	560	131
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	246	80	149	295	7	166	511	864	124	350	1572	366
Arrive On Green	0.07	0.14	0.14	0.04	0.11	0.11	0.05	0.54	0.54	0.06	0.55	0.55
Sat Flow, veh/h	1781	585	1090	1781	62	1533	1781	1600	230	1781	2860	667
Grp Volume(v), veh/h	180	0	63	42	0	129	76	0	757	150	347	344
Grp Sat Flow(s),veh/h/ln	1781	0	1674	1781	0	1594	1781	0	1829	1781	1777	1750
Q Serve(g_s), s	5.3	0.0	2.7	1.6	0.0	6.3	1.5	0.0	26.0	2.9	8.8	8.8
Cycle Q Clear(g_c), s	5.3	0.0	2.7	1.6	0.0	6.3	1.5	0.0	26.0	2.9	8.8	8.8
Prop In Lane	1.00		0.65	1.00		0.96	1.00		0.13	1.00		0.38
Lane Grp Cap(c), veh/h	246	0	229	295	0	173	511	0	988	350	976	962
V/C Ratio(X)	0.73	0.00	0.28	0.14	0.00	0.75	0.15	0.00	0.77	0.43	0.36	0.36
Avail Cap(c_a), veh/h	246	0	383	339	0	359	539	0	988	356	976	962
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	0.80	0.00	0.80	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.3	0.0	31.0	29.9	0.0	34.6	7.4	0.0	14.4	12.3	10.1	10.1
Incr Delay (d2), s/veh	10.7	0.0	0.6	0.2	0.0	6.3	0.1	0.0	4.6	0.8	1.0	1.0
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	1.6	0.0	1.1	0.7	0.0	2.7	0.5	0.0	10.7	1.1	3.4	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	43.1	0.0	31.6	30.1	0.0	40.9	7.5	0.0	19.0	13.2	11.1	11.1
LnGrp LOS	D		C	C		D	A		B	B	B	B
Approach Vol, veh/h	243		171			833			841			
Approach Delay, s/veh	40.1		38.3			18.0			11.5			
Approach LOS	D		D			B			B			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.3	47.7	7.5	15.4	8.6	48.5	9.8	13.2				
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	33.6	5.0	18.3	5.3	33.4	5.3	18.0				
Max Q Clear Time (g_c+I1), s	4.9	28.0	3.6	4.7	3.5	10.8	7.3	8.3				
Green Ext Time (p_c), s	0.0	2.5	0.0	0.2	0.0	4.5	0.0	0.4				
Intersection Summary												
HCM 7th Control Delay, s/veh			19.6									
HCM 7th LOS			B									

Timings

6: Market Street & 15th Street

02/10/2025



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	78	7	46	13	51	671	58	656
Future Volume (vph)	78	7	46	13	51	671	58	656
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	9.5	22.9	9.6	23.0
Total Split (%)	40.9%	40.9%	40.9%	40.9%	17.3%	41.6%	17.5%	41.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	9.1	9.1	9.1	9.1	7.3	32.0	7.5	32.1
Actuated g/C Ratio	0.17	0.17	0.17	0.17	0.13	0.58	0.14	0.58
v/c Ratio	0.41	0.17	0.24	0.12	0.26	0.42	0.28	0.42
Control Delay (s/veh)	25.1	9.3	21.4	12.1	23.5	11.0	23.7	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.1	9.3	21.4	12.1	23.5	11.0	23.7	10.8
LOS	C	A	C	B	C	B	C	B
Approach Delay (s/veh)		19.5		17.7		11.8		11.7
Approach LOS		B		B		B		B

Intersection Summary

Cycle Length: 55

Actuated Cycle Length: 55

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.42

Intersection Signal Delay (s/veh): 12.6

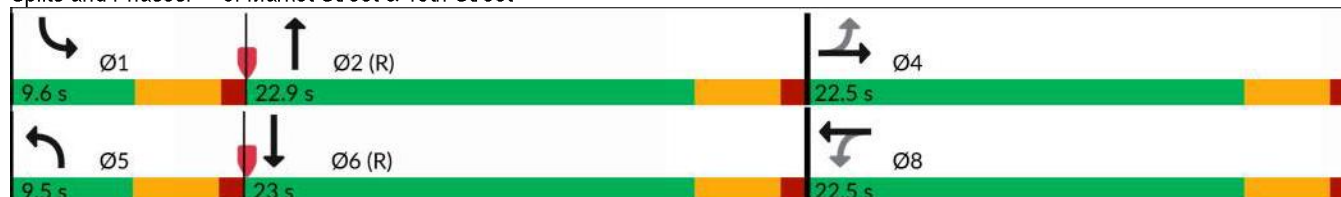
Intersection LOS: B

Intersection Capacity Utilization 47.2%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 6: Market Street & 15th Street



HCM 7th Signalized Intersection Summary

6: Market Street & 15th Street

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	7	36	46	13	18	51	671	65	58	656	82
Future Volume (veh/h)	78	7	36	46	13	18	51	671	65	58	656	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	92	8	42	54	15	21	60	789	76	68	772	96
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	273	32	167	259	86	121	97	1878	181	105	1837	228
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.05	0.57	0.57	0.06	0.58	0.58
Sat Flow, veh/h	1372	260	1365	1355	705	987	1781	3275	315	1781	3181	395
Grp Volume(v), veh/h	92	0	50	54	0	36	60	428	437	68	431	437
Grp Sat Flow(s),veh/h/ln	1372	0	1625	1355	0	1693	1781	1777	1814	1781	1777	1799
Q Serve(g_s), s	3.5	0.0	1.5	2.1	0.0	1.0	1.8	7.4	7.5	2.1	7.4	7.5
Cycle Q Clear(g_c), s	4.6	0.0	1.5	3.6	0.0	1.0	1.8	7.4	7.5	2.1	7.4	7.5
Prop In Lane	1.00		0.84	1.00		0.58	1.00		0.17	1.00		0.22
Lane Grp Cap(c), veh/h	273	0	199	259	0	207	97	1019	1040	105	1026	1039
V/C Ratio(X)	0.34	0.00	0.25	0.21	0.00	0.17	0.62	0.42	0.42	0.65	0.42	0.42
Avail Cap(c_a), veh/h	554	0	532	537	0	554	162	1019	1040	165	1026	1039
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	0.75	0.75	0.75	0.71	0.71	0.71
Uniform Delay (d), s/veh	23.7	0.0	21.8	23.5	0.0	21.6	25.4	6.6	6.6	25.3	6.5	6.5
Incr Delay (d2), s/veh	0.7	0.0	0.7	0.4	0.0	0.4	4.7	1.0	0.9	4.8	0.9	0.9
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	1.1	0.0	0.6	0.6	0.0	0.4	0.8	2.3	2.4	1.0	2.3	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.4	0.0	22.5	23.9	0.0	22.0	30.2	7.6	7.5	30.1	7.4	7.4
LnGrp LOS	C		C	C		C	C	A	A	C	A	A
Approach Vol, veh/h	142			90			925			936		
Approach Delay, s/veh	23.7			23.1			9.0			9.0		
Approach LOS	C			C			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	36.0		11.2	7.5	36.3		11.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	18.4		18.0	5.0	18.5		18.0				
Max Q Clear Time (g_c+1), s	4.1	9.5		6.6	3.8	9.5		5.6				
Green Ext Time (p_c), s	0.0	3.7		0.3	0.0	3.7		0.2				
Intersection Summary												
HCM 7th Control Delay, s/veh				10.6								
HCM 7th LOS				B								

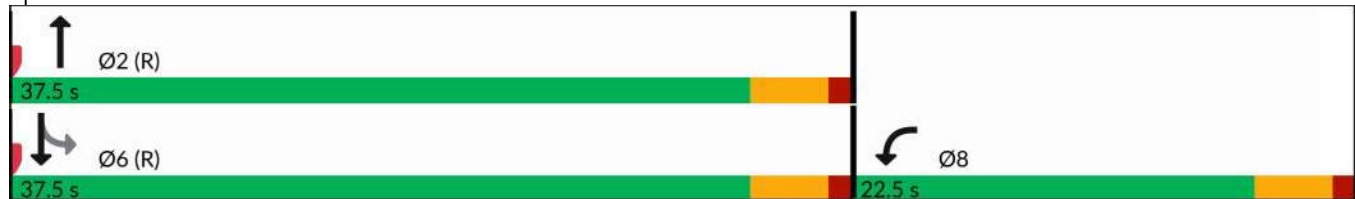
Timings

7: Brockton Avenue & Terracina Drive

02/10/2025

				
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	20	574	87	408
Future Volume (vph)	20	574	87	408
Turn Type	Prot	NA	Perm	NA
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	22.5	37.5	37.5	37.5
Total Split (%)	37.5%	62.5%	62.5%	62.5%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max
Act Effct Green (s)	7.3	46.6	46.6	46.6
Actuated g/C Ratio	0.12	0.78	0.78	0.78
v/c Ratio	0.46	0.57	0.27	0.36
Control Delay (s/veh)	13.1	6.1	5.4	4.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	13.1	6.1	5.4	4.1
LOS	B	A	A	A
Approach Delay (s/veh)	13.1	6.1		4.3
Approach LOS	B	A		A
Intersection Summary				
Cycle Length: 60				
Actuated Cycle Length: 60				
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green				
Natural Cycle: 60				
Control Type: Actuated-Coordinated				
Maximum v/c Ratio: 0.57				
Intersection Signal Delay (s/veh): 6.0			Intersection LOS: A	
Intersection Capacity Utilization 56.8%			ICU Level of Service B	
Analysis Period (min) 15				

Splits and Phases: 7: Brockton Avenue & Terracina Drive



HCM 7th Signalized Intersection Summary

7: Brockton Avenue & Terracina Drive

02/10/2025



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	20	88	574	65	87	408
Future Volume (veh/h)	20	88	574	65	87	408
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	113	736	83	112	523
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	33	144	1221	138	474	1384
Arrive On Green	0.11	0.11	0.74	0.74	0.74	0.74
Sat Flow, veh/h	301	1308	1651	186	668	1870
Grp Volume(v), veh/h	140	0	0	819	112	523
Grp Sat Flow(s),veh/h/ln	1620	0	0	1837	668	1870
Q Serve(g_s), s	5.1	0.0	0.0	12.6	5.7	6.1
Cycle Q Clear(g_c), s	5.1	0.0	0.0	12.6	18.2	6.1
Prop In Lane	0.19	0.81		0.10	1.00	
Lane Grp Cap(c), veh/h	179	0	0	1359	474	1384
V/C Ratio(X)	0.78	0.00	0.00	0.60	0.24	0.38
Avail Cap(c_a), veh/h	486	0	0	1359	474	1384
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.00	0.00	1.00	0.95	0.95
Uniform Delay (d), s/veh	26.0	0.0	0.0	3.7	8.0	2.8
Incr Delay (d2), s/veh	7.3	0.0	0.0	2.0	1.1	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	0.0	2.9	0.8	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	33.3	0.0	0.0	5.7	9.1	3.6
LnGrp LOS	C			A	A	A
Approach Vol, veh/h	140		819			635
Approach Delay, s/veh	33.3		5.7			4.5
Approach LOS	C		A			A
Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	48.9				48.9	11.1
Change Period (Y+Rc), s	4.5				4.5	4.5
Max Green Setting (Gmax), s	33.0				33.0	18.0
Max Q Clear Time (g_c+I1), s	14.6				20.2	7.1
Green Ext Time (p_c), s	6.0				3.6	0.3
Intersection Summary						
HCM 7th Control Delay, s/veh			7.6			
HCM 7th LOS			A			

Timings

8: Market Street & Terracina Drive

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	109	25	2	14	29	21	676	202	150	510
Future Volume (vph)	109	25	2	14	29	21	676	202	150	510
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5
Total Split (s)	11.0	24.0	9.5	22.5	22.5	9.9	26.5	26.5	15.0	31.6
Total Split (%)	14.7%	32.0%	12.7%	30.0%	30.0%	13.2%	35.3%	35.3%	20.0%	42.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max
Act Effect Green (s)	6.5	11.9	5.0	6.8	6.8	6.8	33.2	33.2	14.5	47.2
Actuated g/C Ratio	0.09	0.16	0.07	0.09	0.09	0.09	0.44	0.44	0.19	0.63
v/c Ratio	0.96	0.35	0.03	0.11	0.11	0.18	0.58	0.33	0.59	0.37
Control Delay (s/veh)	101.9	13.7	33.5	31.8	0.7	33.6	20.7	6.3	34.3	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	101.9	13.7	33.5	31.8	0.7	33.6	20.7	6.3	34.3	9.6
LOS	F	B	C	C	A	C	C	A	C	A
Approach Delay (s/veh)		63.0		12.0			17.8			14.6
Approach LOS		E		B			B			B

Intersection Summary

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay (s/veh): 21.0

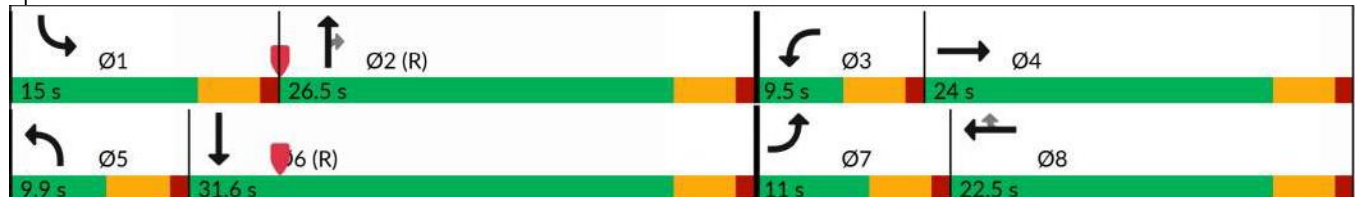
Intersection LOS: C

Intersection Capacity Utilization 51.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 8: Market Street & Terracina Drive



HCM 7th Signalized Intersection Summary

8: Market Street & Terracina Drive

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	25	61	2	14	29	21	676	202	150	510	87
Future Volume (veh/h)	109	25	61	2	14	29	21	676	202	150	510	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	147	34	82	3	19	39	28	914	273	203	689	118
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	154	72	173	7	122	103	52	1679	749	242	1757	301
Arrive On Green	0.09	0.15	0.15	0.00	0.06	0.06	0.03	0.47	0.47	0.14	0.58	0.58
Sat Flow, veh/h	1781	486	1173	1781	1870	1585	1781	3554	1585	1781	3034	519
Grp Volume(v), veh/h	147	0	116	3	19	39	28	914	273	203	403	404
Grp Sat Flow(s),veh/h/ln	1781	0	1659	1781	1870	1585	1781	1777	1585	1781	1777	1777
Q Serve(g_s), s	6.2	0.0	4.8	0.1	0.7	1.8	1.2	13.7	8.2	8.3	9.3	9.3
Cycle Q Clear(g_c), s	6.2	0.0	4.8	0.1	0.7	1.8	1.2	13.7	8.2	8.3	9.3	9.3
Prop In Lane	1.00		0.71	1.00		1.00	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	154	0	245	7	122	103	52	1679	749	242	1029	1029
V/C Ratio(X)	0.95	0.00	0.47	0.42	0.16	0.38	0.53	0.54	0.36	0.84	0.39	0.39
Avail Cap(c_a), veh/h	154	0	431	119	449	380	128	1679	749	249	1029	1029
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)	0.97	0.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.91
Uniform Delay (d), s/veh	34.1	0.0	29.3	37.3	33.1	33.6	35.9	14.1	12.6	31.6	8.6	8.6
Incr Delay (d2), s/veh	57.1	0.0	1.4	34.2	0.6	2.3	8.2	1.3	1.4	19.6	1.0	1.0
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	5.0	0.0	1.9	0.1	0.3	0.7	0.6	5.3	3.0	4.8	3.4	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	91.2	0.0	30.7	71.5	33.7	35.9	44.0	15.3	14.0	51.2	9.6	9.6
LnGrp LOS	F		C	E	C	D	D	B	B	D	A	A
Approach Vol, veh/h	263					61		1215		1010		
Approach Delay, s/veh	64.5					37.0		15.7		18.0		
Approach LOS	E					D		B		B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.7	39.9	4.8	15.6	6.7	47.9	11.0	9.4				
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	10.5	22.0	5.0	19.5	5.4	27.1	6.5	18.0				
Max Q Clear Time (g_c+I1), s	10.3	15.7	2.1	6.8	3.2	11.3	8.2	3.8				
Green Ext Time (p_c), s	0.0	3.6	0.0	0.4	0.0	4.7	0.0	0.1				
Intersection Summary												
HCM 7th Control Delay, s/veh			22.1									
HCM 7th LOS			C									

HCM 7th TWSC
101: Brockton Avenue & EX South RCH Driveway

02/10/2025

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						 
Traffic Vol, veh/h	0	23	726	30	0	672
Future Vol, veh/h	0	23	726	30	0	672
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	25	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	27	844	35	0	781
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	440	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	*890	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		0	-	-	-	-
Mov Cap-1 Maneuver	-	*890	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s/v	9.17	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBT		
Capacity (veh/h)	-	- 890		-		
HCM Lane V/C Ratio	-	- 0.03		-		
HCM Control Delay (s/veh)	-	- 9.2		-		
HCM Lane LOS	-	- A		-		
HCM 95th %tile Q(veh)	-	- 0.1		-		
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

HCM 7th TWSC
102: Brockton Avenue & New North RCH Driveway

02/10/2025

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	11	731	19	29	707
Future Vol, veh/h	7	11	731	19	29	707
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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	12	769	20	31	744
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1213	395	0	0	789	0
Stage 1	779	-	-	-	-	-
Stage 2	433	-	-	-	-	-
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	*174	*890	-	-	1027	-
Stage 1	*599	-	-	-	-	-
Stage 2	*842	-	-	-	-	-
Platoon blocked, %		0	-	-	0	-
Mov Cap-1 Maneuver	*168	*890	-	-	1027	-
Mov Cap-2 Maneuver	*168	-	-	-	-	-
Stage 1	*599	-	-	-	-	-
Stage 2	*810	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s/v	16.47	0		0.63		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	333	142	-	
HCM Lane V/C Ratio	-	-	0.057	0.03	-	
HCM Control Delay (s/veh)	-	-	16.5	8.6	0.3	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

HCM 7th TWSC
103: Brockton Avenue & New Garage Egress

02/10/2025

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	4	742	0	0	732
Future Vol, veh/h	4	4	742	0	0	732
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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	4	781	0	0	771
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1166	391	0	-	-	-
Stage 1	781	-	-	-	-	-
Stage 2	385	-	-	-	-	-
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	*187	*890	-	0	0	-
Stage 1	*598	-	-	0	0	-
Stage 2	*843	-	-	0	0	-
Platoon blocked, %		0	-			-
Mov Cap-1 Maneuver	*187	*890	-	-	-	-
Mov Cap-2 Maneuver	*187	-	-	-	-	-
Stage 1	*598	-	-	-	-	-
Stage 2	*843	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s/v16.98			0		0	
HCM LOS	C					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	- 309		-			
HCM Lane V/C Ratio	- 0.027		-			
HCM Control Delay (s/veh)	- 17		-			
HCM Lane LOS	- C		-			
HCM 95th %tile Q(veh)	- 0.1		-			
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

HCM 7th TWSC
104: RCH Driveway & 14th Street

02/10/2025

Intersection						
Int Delay, s/veh	1.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑		↗
Traffic Vol, veh/h	499	62	178	503	0	103
Future Vol, veh/h	499	62	178	503	0	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	120	-	-	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	542	67	193	547	0	112
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	610	0	-	305
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.14	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.22	-	-	3.32
Pot Cap-1 Maneuver	-	-	1102	-	0	*968
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-	0	-	-	0
Mov Cap-1 Maneuver	-	-	1102	-	-	*968
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		2.34		9.21	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	968	-	-	1102	-	
HCM Lane V/C Ratio	0.116	-	-	0.176	-	
HCM Control Delay (s/veh)	9.2	-	-	9	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.4	-	-	0.6	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Timings

1: Brockton Avenue & University Avenue

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	5	360	62	295	226	359	77	52	275	10
Future Volume (vph)	5	360	62	295	226	359	77	52	275	10
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4	3	8	5	2	3	1	6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	7	4	3	8	5	2	3	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	9.5	9.5	22.5	22.5
Total Split (s)	9.5	22.5	9.5	22.5	10.0	23.5	9.5	9.5	23.0	23.0
Total Split (%)	14.6%	34.6%	14.6%	34.6%	15.4%	36.2%	14.6%	14.6%	35.4%	35.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	None	C-Max	C-Max
Act Effect Green (s)	18.4	14.4	21.1	20.1	32.0	27.9	37.4	28.0	22.3	22.3
Actuated g/C Ratio	0.28	0.22	0.32	0.31	0.49	0.43	0.58	0.43	0.34	0.34
v/c Ratio	0.01	0.69	0.27	0.33	0.53	0.48	0.09	0.13	0.46	0.02
Control Delay (s/veh)	11.6	19.5	21.1	23.9	17.6	20.0	2.3	10.9	21.5	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	11.6	19.5	21.1	23.9	17.6	20.0	2.3	10.9	21.5	0.0
LOS	B	B	C	C	B	C	A	B	C	A
Approach Delay (s/veh)		19.4		23.5		17.1			19.3	
Approach LOS		B		C		B			B	

Intersection Summary

Cycle Length: 65

Actuated Cycle Length: 65

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay (s/veh): 19.5

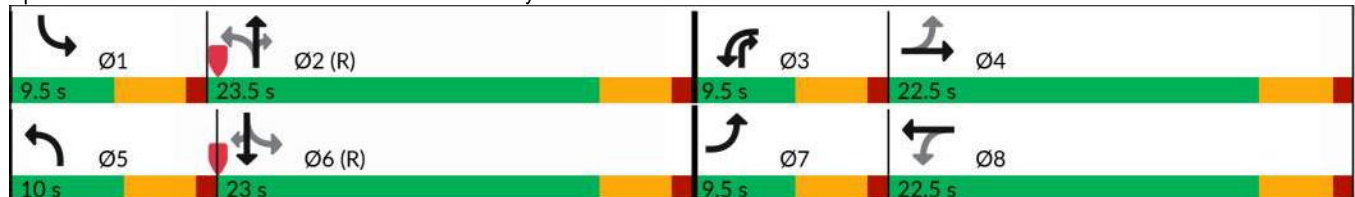
Intersection LOS: B

Intersection Capacity Utilization 63.1%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Brockton Avenue & University Avenue



HCM 7th Signalized Intersection Summary

1: Brockton Avenue & University Avenue

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	360	219	62	295	48	226	359	77	52	275	10
Future Volume (veh/h)	5	360	219	62	295	48	226	359	77	52	275	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	383	233	66	314	51	240	382	82	55	293	11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	303	487	292	252	843	136	517	735	708	417	667	565
Arrive On Green	0.01	0.23	0.23	0.02	0.09	0.09	0.08	0.39	0.39	0.05	0.36	0.36
Sat Flow, veh/h	1781	2135	1281	1781	3066	493	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	5	318	298	66	181	184	240	382	82	55	293	11
Grp Sat Flow(s),veh/h/ln	1781	1777	1640	1781	1777	1782	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.1	10.9	11.2	1.8	6.2	6.3	5.5	10.1	2.0	1.2	7.8	0.3
Cycle Q Clear(g_c), s	0.1	10.9	11.2	1.8	6.2	6.3	5.5	10.1	2.0	1.2	7.8	0.3
Prop In Lane	1.00		0.78	1.00		0.28	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	303	405	374	252	489	490	517	735	708	417	667	565
V/C Ratio(X)	0.02	0.78	0.80	0.26	0.37	0.38	0.46	0.52	0.12	0.13	0.44	0.02
Avail Cap(c_a), veh/h	428	492	454	293	492	493	517	735	708	468	667	565
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.89	0.89	0.89	0.82	0.82	0.82	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.2	23.6	23.7	18.9	24.2	24.3	12.5	15.1	10.5	12.4	15.9	13.5
Incr Delay (d2), s/veh	0.0	6.7	8.0	0.5	0.4	0.4	0.5	2.2	0.3	0.1	2.1	0.1
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	0.1	5.0	4.9	0.7	2.7	2.8	2.1	4.3	0.7	0.5	3.4	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.2	30.3	31.7	19.3	24.7	24.7	13.0	17.2	10.8	12.5	18.0	13.6
LnGrp LOS	B	C	C	B	C	C	B	B	B	B	B	B
Approach Vol, veh/h	621				431		704				359	
Approach Delay, s/veh	30.9				23.9		15.0				17.1	
Approach LOS	C				C		B				B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.6	30.0	8.0	19.3	10.0	27.7	4.9	22.4				
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	5.0	19.0	5.0	18.0	5.5	18.5	5.0	18.0				
Max Q Clear Time (g_c+1), s	3.2	12.1	3.8	13.2	7.5	9.8	2.1	8.3				
Green Ext Time (p_c), s	0.0	1.5	0.0	1.7	0.0	1.1	0.0	1.5				
Intersection Summary												
HCM 7th Control Delay, s/veh				21.8								
HCM 7th LOS				C								
Notes												
User approved changes to right turn type.												

Timings

2: Market Street & University Avenue

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	48	435	83	318	115	774	157	180	690	49
Future Volume (vph)	48	435	83	318	115	774	157	180	690	49
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	9.5	22.5	9.5	22.5	9.5	23.0	23.0	10.0	23.5	23.5
Total Split (%)	14.6%	34.6%	14.6%	34.6%	14.6%	35.4%	35.4%	15.4%	36.2%	36.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effect Green (s)	5.0	14.7	5.0	16.6	7.2	19.6	19.6	9.6	22.0	22.0
Actuated g/C Ratio	0.08	0.23	0.08	0.26	0.11	0.30	0.30	0.15	0.34	0.34
v/c Ratio	0.36	0.65	0.63	0.46	0.60	0.74	0.27	0.70	0.59	0.08
Control Delay (s/veh)	32.6	30.7	51.9	19.0	45.4	26.3	4.2	49.8	21.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.6	30.7	51.9	19.0	45.4	26.3	4.2	49.8	21.5	0.2
LOS	C	C	D	B	D	C	A	D	C	A
Approach Delay (s/veh)		30.9		24.5		25.1			25.9	
Approach LOS		C		C		C			C	

Intersection Summary

Cycle Length: 65

Actuated Cycle Length: 65

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay (s/veh): 26.3

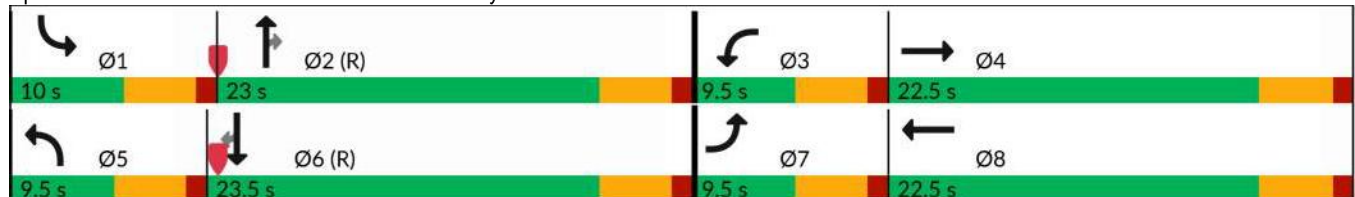
Intersection LOS: C

Intersection Capacity Utilization 65.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Market Street & University Avenue



HCM 7th Signalized Intersection Summary

2: Market Street & University Avenue

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	435	78	83	318	93	115	774	157	180	690	49
Future Volume (veh/h)	48	435	78	83	318	93	115	774	157	180	690	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	49	444	80	85	324	95	117	790	160	184	704	50
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	80	611	109	109	595	172	137	1331	594	151	1359	606
Arrive On Green	0.01	0.07	0.07	0.06	0.22	0.22	0.08	0.37	0.37	0.08	0.38	0.38
Sat Flow, veh/h	1781	3011	539	1781	2721	785	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	49	261	263	85	210	209	117	790	160	184	704	50
Grp Sat Flow(s),veh/h/ln	1781	1777	1773	1781	1777	1729	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	1.8	9.4	9.5	3.1	6.8	7.0	4.2	11.6	4.6	5.5	9.9	1.3
Cycle Q Clear(g_c), s	1.8	9.4	9.5	3.1	6.8	7.0	4.2	11.6	4.6	5.5	9.9	1.3
Prop In Lane	1.00		0.30	1.00		0.45	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	80	360	360	109	389	378	137	1331	594	151	1359	606
V/C Ratio(X)	0.61	0.72	0.73	0.78	0.54	0.55	0.85	0.59	0.27	1.22	0.52	0.08
Avail Cap(c_a), veh/h	137	492	491	137	492	479	137	1331	594	151	1359	606
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)	0.78	0.78	0.78	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.4	28.5	28.6	30.1	22.5	22.6	29.6	16.3	14.1	29.7	15.5	12.8
Incr Delay (d2), s/veh	5.7	2.6	2.8	19.9	1.2	1.3	27.9	1.3	0.7	144.7	1.4	0.3
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	0.9	4.5	4.6	1.9	2.8	2.8	2.8	4.5	1.6	8.3	3.9	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	37.1	31.2	31.4	50.0	23.7	23.8	57.5	17.7	14.9	174.4	16.9	13.1
LnGrp LOS	D	C	C	D	C	C	E	B	B	F	B	B
Approach Vol, veh/h	573				504		1067				938	
Approach Delay, s/veh	31.8				28.2		21.6				47.6	
Approach LOS	C				C		C				D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	28.8	8.5	17.7	9.5	29.3	7.4	18.7				
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	5.5	18.5	5.0	18.0	5.0	19.0	5.0	18.0				
Max Q Clear Time (g_c+1), s	7.5	13.6	5.1	11.5	6.2	11.9	3.8	9.0				
Green Ext Time (p_c), s	0.0	2.5	0.0	1.7	0.0	2.8	0.0	1.7				
Intersection Summary												
HCM 7th Control Delay, s/veh			32.5									
HCM 7th LOS			C									

Timings

3: Brockton Avenue & 14th Street

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	16	97	244	207	12	442	325	112	502	12
Future Volume (vph)	16	97	244	207	12	442	325	112	502	12
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	3	1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	9.5	9.5	22.5	22.5
Total Split (s)	9.5	22.5	10.0	23.0	9.5	26.5	10.0	11.0	28.0	28.0
Total Split (%)	13.6%	32.1%	14.3%	32.9%	13.6%	37.9%	14.3%	15.7%	40.0%	40.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	None	C-Max	C-Max
Act Effect Green (s)	5.0	10.4	6.6	17.6	5.7	30.4	42.4	8.8	39.6	39.6
Actuated g/C Ratio	0.07	0.15	0.09	0.25	0.08	0.43	0.61	0.13	0.57	0.57
v/c Ratio	0.13	0.44	0.78	0.74	0.08	0.56	0.31	0.52	0.49	0.01
Control Delay (s/veh)	32.9	26.9	52.2	31.2	31.4	22.1	2.3	39.7	15.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.9	26.9	52.2	31.2	31.4	22.1	2.3	39.7	15.0	0.0
LOS	C	C	D	C	C	C	A	D	B	A
Approach Delay (s/veh)		27.6		40.0		14.0			19.1	
Approach LOS		C		D		B			B	

Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay (s/veh): 23.5

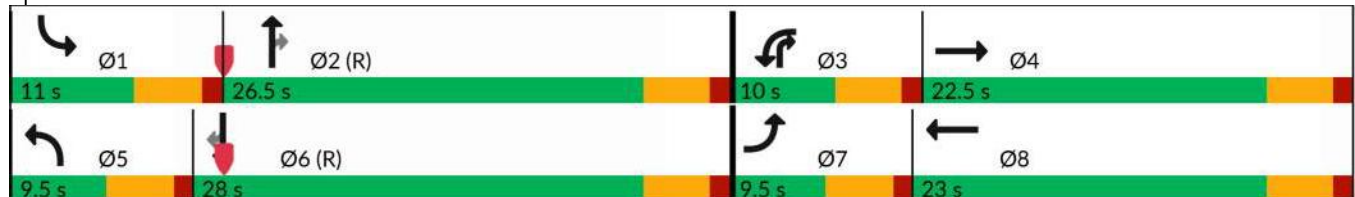
Intersection LOS: C

Intersection Capacity Utilization 60.9%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Brockton Avenue & 14th Street



HCM 7th Signalized Intersection Summary

3: Brockton Avenue & 14th Street

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	97	22	244	207	134	12	442	325	112	502	12
Future Volume (veh/h)	16	97	22	244	207	134	12	442	325	112	502	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	100	23	252	213	138	12	456	335	115	518	12
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	34	252	58	272	245	158	26	769	776	146	894	758
Arrive On Green	0.02	0.17	0.17	0.08	0.23	0.23	0.01	0.41	0.41	0.08	0.48	0.48
Sat Flow, veh/h	1781	1471	338	3456	1060	687	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	16	0	123	252	0	351	12	456	335	115	518	12
Grp Sat Flow(s),veh/h/ln	1781	0	1809	1728	0	1747	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.6	0.0	4.2	5.1	0.0	13.5	0.5	13.3	9.6	4.4	14.0	0.3
Cycle Q Clear(g_c), s	0.6	0.0	4.2	5.1	0.0	13.5	0.5	13.3	9.6	4.4	14.0	0.3
Prop In Lane	1.00		0.19	1.00		0.39	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	34	0	310	272	0	403	26	769	776	146	894	758
V/C Ratio(X)	0.47	0.00	0.40	0.93	0.00	0.87	0.45	0.59	0.43	0.79	0.58	0.02
Avail Cap(c_a), veh/h	127	0	465	272	0	462	127	769	776	165	894	758
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	1.00	1.00	0.91	0.91	0.91
Uniform Delay (d), s/veh	34.0	0.0	25.8	32.1	0.0	25.9	34.2	16.1	11.6	31.5	13.2	9.6
Incr Delay (d2), s/veh	9.8	0.0	0.8	36.0	0.0	15.0	11.6	3.4	1.8	18.1	2.5	0.0
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	0.4	0.0	1.8	3.4	0.0	7.0	0.3	5.9	3.4	2.6	5.8	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	43.7	0.0	26.6	68.0	0.0	40.9	45.8	19.4	13.3	49.6	15.7	9.6
LnGrp LOS	D		C	E		D	D	B	B	D	B	A
Approach Vol, veh/h	139			603			803			645		
Approach Delay, s/veh	28.6			52.2			17.3			21.6		
Approach LOS	C			D			B			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.2	33.3	10.0	16.5	5.5	38.0	5.8	20.6				
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	6.5	22.0	5.5	18.0	5.0	23.5	5.0	18.5				
Max Q Clear Time (g_c+I1), s	6.4	15.3	7.1	6.2	2.5	16.0	2.6	15.5				
Green Ext Time (p_c), s	0.0	2.3	0.0	0.4	0.0	2.0	0.0	0.6				
Intersection Summary												
HCM 7th Control Delay, s/veh	28.9											
HCM 7th LOS	C											
Notes												
User approved changes to right turn type.												

Timings

4: Market Street & 14th Street

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	94	488	267	496	64	605	250	184	699	72
Future Volume (vph)	94	488	267	496	64	605	250	184	699	72
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	11.4	22.5	19.0	30.1	9.6	23.5	23.5	15.0	28.9	28.9
Total Split (%)	14.3%	28.1%	23.8%	37.6%	12.0%	29.4%	29.4%	18.8%	36.1%	36.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effect Green (s)	6.8	16.7	14.2	26.3	5.5	20.4	20.4	10.6	27.6	27.6
Actuated g/C Ratio	0.09	0.21	0.18	0.33	0.07	0.26	0.26	0.13	0.35	0.35
v/c Ratio	0.65	0.76	0.88	0.51	0.55	0.69	0.43	0.81	0.59	0.11
Control Delay (s/veh)	57.1	36.0	61.8	22.9	54.9	32.2	5.7	61.1	25.2	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	57.1	36.0	61.8	22.9	54.9	32.2	5.7	61.1	25.2	0.3
LOS	E	D	E	C	D	C	A	E	C	A
Approach Delay (s/veh)		39.1		35.3		26.6			30.3	
Approach LOS		D		D		C			C	

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay (s/veh): 32.2

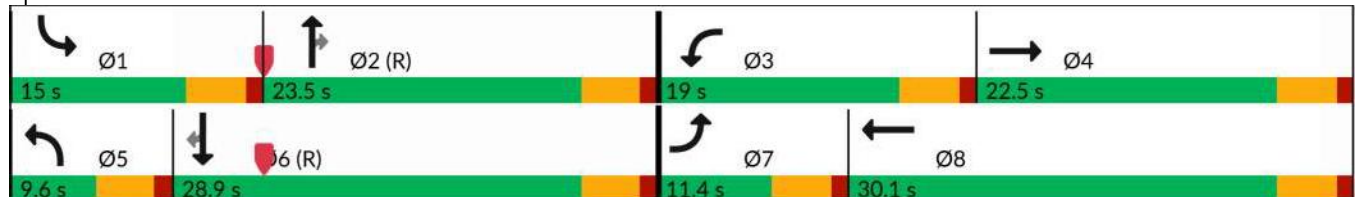
Intersection LOS: C

Intersection Capacity Utilization 72.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Market Street & 14th Street



HCM 7th Signalized Intersection Summary

4: Market Street & 14th Street

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	488	55	267	496	74	64	605	250	184	699	72
Future Volume (veh/h)	94	488	55	267	496	74	64	605	250	184	699	72
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	97	503	57	275	511	76	66	624	258	190	721	74
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	124	615	69	313	923	137	86	998	445	227	1280	571
Arrive On Green	0.07	0.19	0.19	0.18	0.30	0.30	0.05	0.28	0.28	0.13	0.36	0.36
Sat Flow, veh/h	1781	3218	363	1781	3105	460	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	97	277	283	275	292	295	66	624	258	190	721	74
Grp Sat Flow(s),veh/h/ln	1781	1777	1805	1781	1777	1788	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	4.3	11.9	12.0	12.0	11.0	11.1	2.9	12.3	11.2	8.3	13.0	2.5
Cycle Q Clear(g_c), s	4.3	11.9	12.0	12.0	11.0	11.1	2.9	12.3	11.2	8.3	13.0	2.5
Prop In Lane	1.00		0.20	1.00		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	124	340	345	313	528	531	86	998	445	227	1280	571
V/C Ratio(X)	0.78	0.82	0.82	0.88	0.55	0.56	0.77	0.63	0.58	0.84	0.56	0.13
Avail Cap(c_a), veh/h	154	400	406	323	569	572	114	998	445	234	1280	571
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	0.93	0.93	0.93	0.78	0.78	0.78
Uniform Delay (d), s/veh	36.6	31.0	31.0	32.1	23.6	23.7	37.6	25.1	24.7	34.1	20.5	17.2
Incr Delay (d2), s/veh	18.5	10.7	11.0	22.6	1.0	1.0	19.0	2.8	5.1	18.0	1.4	0.4
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	2.5	6.0	6.1	7.0	4.6	4.7	1.7	5.3	4.7	4.7	5.4	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	55.1	41.7	42.1	54.8	24.6	24.7	56.7	27.9	29.8	52.1	22.0	17.5
LnGrp LOS	E	D	D	D	C	C	E	C	C	D	C	B
Approach Vol, veh/h	657			862			948			985		
Approach Delay, s/veh	43.9			34.3			30.4			27.4		
Approach LOS	D			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.7	27.0	18.6	19.8	8.3	33.3	10.1	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	10.5	19.0	14.5	18.0	5.1	24.4	6.9	25.6				
Max Q Clear Time (g_c+1), s	10.3	14.3	14.0	14.0	4.9	15.0	6.3	13.1				
Green Ext Time (p_c), s	0.0	2.2	0.0	1.3	0.0	3.5	0.0	2.9				
Intersection Summary												
HCM 7th Control Delay, s/veh	33.1											
HCM 7th LOS	C											

Timings

5: Brockton Avenue & Tequesquite Avenue

02/10/2025



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	89	7	92	14	37	416	28	650
Future Volume (vph)	89	7	92	14	37	416	28	650
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	9.5	22.5
Total Split (s)	9.6	22.5	9.6	22.5	9.5	23.4	9.5	23.4
Total Split (%)	14.8%	34.6%	14.8%	34.6%	14.6%	36.0%	14.6%	36.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	10.6	7.6	12.6	7.6	39.0	36.2	38.8	36.1
Actuated g/C Ratio	0.16	0.12	0.19	0.12	0.60	0.56	0.60	0.56
v/c Ratio	0.40	0.21	0.35	0.59	0.09	0.45	0.06	0.41
Control Delay (s/veh)	24.1	12.5	21.5	12.4	7.0	13.9	6.8	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	24.1	12.5	21.5	12.4	7.0	13.9	6.8	11.5
LOS	C	B	C	B	A	B	A	B
Approach Delay (s/veh)		20.3		15.3		13.4		11.4
Approach LOS		C		B		B		B

Intersection Summary

Cycle Length: 65

Actuated Cycle Length: 65

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.59

Intersection Signal Delay (s/veh): 13.3

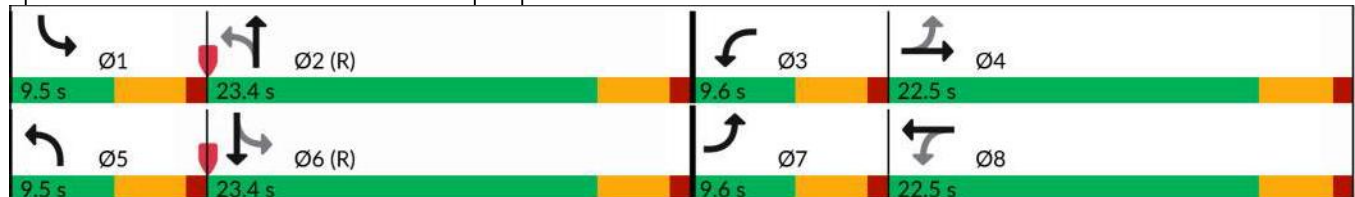
Intersection LOS: B

Intersection Capacity Utilization 59.1%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 5: Brockton Avenue & Tequesquite Avenue



HCM 7th Signalized Intersection Summary

5: Brockton Avenue & Tequesquite Avenue

02/10/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	7	38	92	14	185	37	416	17	28	650	97
Future Volume (veh/h)	89	7	38	92	14	185	37	416	17	28	650	97
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	95	7	40	98	15	197	39	443	18	30	691	103
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	272	40	231	418	19	251	382	820	33	430	1405	209
Arrive On Green	0.06	0.17	0.17	0.06	0.17	0.17	0.04	0.46	0.46	0.03	0.45	0.45
Sat Flow, veh/h	1781	242	1380	1781	113	1489	1781	1785	73	1781	3102	462
Grp Volume(v), veh/h	95	0	47	98	0	212	39	0	461	30	396	398
Grp Sat Flow(s),veh/h/ln	1781	0	1622	1781	0	1602	1781	0	1857	1781	1777	1787
Q Serve(g_s), s	2.8	0.0	1.6	2.9	0.0	8.2	0.7	0.0	11.6	0.6	10.2	10.2
Cycle Q Clear(g_c), s	2.8	0.0	1.6	2.9	0.0	8.2	0.7	0.0	11.6	0.6	10.2	10.2
Prop In Lane	1.00		0.85	1.00		0.93	1.00		0.04	1.00		0.26
Lane Grp Cap(c), veh/h	272	0	272	418	0	270	382	0	853	430	805	809
V/C Ratio(X)	0.35	0.00	0.17	0.23	0.00	0.79	0.10	0.00	0.54	0.07	0.49	0.49
Avail Cap(c_a), veh/h	299	0	449	444	0	444	450	0	853	509	805	809
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	0.96	0.00	0.96	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.9	0.0	23.2	20.3	0.0	25.9	9.4	0.0	12.6	9.8	12.5	12.5
Incr Delay (d2), s/veh	0.8	0.0	0.3	0.3	0.0	5.0	0.1	0.0	2.4	0.1	2.1	2.1
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	1.2	0.0	0.6	1.2	0.0	3.3	0.3	0.0	4.8	0.2	4.0	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	21.6	0.0	23.5	20.6	0.0	30.9	9.5	0.0	15.0	9.8	14.7	14.7
LnGrp LOS	C		C	C		C	A		B	A	B	B
Approach Vol, veh/h	142			310			500			824		
Approach Delay, s/veh	22.3			27.7			14.6			14.5		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.6	34.4	8.6	15.4	7.0	33.9	8.6	15.4				
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	5.0	18.9	5.1	18.0	5.0	18.9	5.1	18.0				
Max Q Clear Time (g_c+I1), s	2.6	13.6	4.9	3.6	2.7	12.2	4.8	10.2				
Green Ext Time (p_c), s	0.0	1.3	0.0	0.1	0.0	2.7	0.0	0.7				
Intersection Summary												
HCM 7th Control Delay, s/veh	17.4											
HCM 7th LOS	B											

Timings

6: Market Street & 15th Street

02/10/2025



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	←	→	←	→	←	→	←	→
Traffic Volume (vph)	110	17	62	6	42	757	12	912
Future Volume (vph)	110	17	62	6	42	757	12	912
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5
Total Split (s)	22.6	22.6	22.6	22.6	9.6	27.8	9.6	27.8
Total Split (%)	37.7%	37.7%	37.7%	37.7%	16.0%	46.3%	16.0%	46.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	10.6	10.6	10.5	10.5	6.8	41.1	6.1	38.4
Actuated g/C Ratio	0.18	0.18	0.18	0.18	0.11	0.69	0.10	0.64
v/c Ratio	0.51	0.28	0.30	0.17	0.23	0.36	0.07	0.49
Control Delay (s/veh)	28.8	9.2	23.4	8.9	26.7	7.2	25.0	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.8	9.2	23.4	8.9	26.7	7.2	25.0	10.6
LOS	C	A	C	A	C	A	C	B
Approach Delay (s/veh)		19.9		16.8		8.2		10.8
Approach LOS		B		B		A		B

Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.51

Intersection Signal Delay (s/veh): 11.0

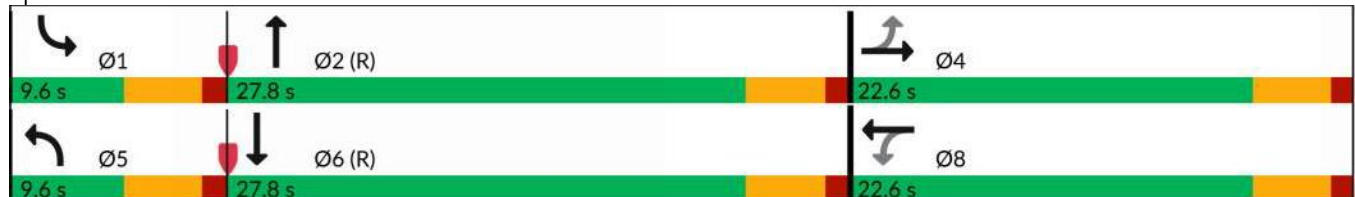
Intersection LOS: B

Intersection Capacity Utilization 55.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 6: Market Street & 15th Street



HCM 7th Signalized Intersection Summary

6: Market Street & 15th Street

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	17	75	62	6	44	42	757	33	12	912	93
Future Volume (veh/h)	110	17	75	62	6	44	42	757	33	12	912	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	120	18	82	67	7	48	46	823	36	13	991	101
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	292	46	210	253	32	222	79	2085	91	29	1865	190
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.04	0.60	0.60	0.02	0.57	0.57
Sat Flow, veh/h	1349	293	1336	1295	206	1411	1781	3468	152	1781	3256	332
Grp Volume(v), veh/h	120	0	100	67	0	55	46	422	437	13	541	551
Grp Sat Flow(s),veh/h/ln	1349	0	1630	1295	0	1616	1781	1777	1843	1781	1777	1811
Q Serve(g_s), s	5.1	0.0	3.3	2.9	0.0	1.8	1.5	7.4	7.4	0.4	11.2	11.2
Cycle Q Clear(g_c), s	6.9	0.0	3.3	6.2	0.0	1.8	1.5	7.4	7.4	0.4	11.2	11.2
Prop In Lane	1.00		0.82	1.00		0.87	1.00		0.08	1.00		0.18
Lane Grp Cap(c), veh/h	292	0	257	253	0	255	79	1068	1108	29	1018	1037
V/C Ratio(X)	0.41	0.00	0.39	0.27	0.00	0.22	0.58	0.39	0.39	0.45	0.53	0.53
Avail Cap(c_a), veh/h	487	0	492	439	0	488	151	1068	1108	151	1018	1037
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	0.96	0.96	0.96	0.69	0.69	0.69
Uniform Delay (d), s/veh	25.1	0.0	22.7	25.5	0.0	22.0	28.1	6.3	6.3	29.2	7.9	7.9
Incr Delay (d2), s/veh	0.9	0.0	1.0	0.6	0.0	0.4	6.2	1.1	1.0	7.4	1.4	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	1.6	0.0	1.3	0.9	0.0	0.7	0.8	2.4	2.5	0.2	3.7	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	26.0	0.0	23.7	26.0	0.0	22.5	34.4	7.3	7.3	36.6	9.2	9.2
LnGrp LOS	C		C	C		C	C	A	A	D	A	A
Approach Vol, veh/h	220			122			905			1105		
Approach Delay, s/veh	24.9			24.4			8.7			9.5		
Approach LOS	C			C			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.5	40.6		13.9	7.2	38.9		13.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	23.3		18.1	5.1	23.3		18.1				
Max Q Clear Time (g_c+I1), s	2.4	9.4		8.9	3.5	13.2		8.2				
Green Ext Time (p_c), s	0.0	4.7		0.6	0.0	5.1		0.3				
Intersection Summary												
HCM 7th Control Delay, s/veh				11.4								
HCM 7th LOS				B								

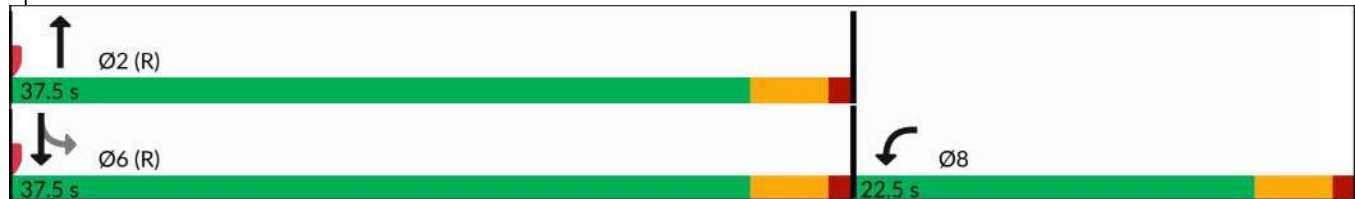
Timings

7: Brockton Avenue & Terracina Drive

02/10/2025

				
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	35	440	23	764
Future Volume (vph)	35	440	23	764
Turn Type	Prot	NA	Perm	NA
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	22.5	37.5	37.5	37.5
Total Split (%)	37.5%	62.5%	62.5%	62.5%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max
Act Effct Green (s)	7.0	49.8	49.8	49.8
Actuated g/C Ratio	0.12	0.83	0.83	0.83
v/c Ratio	0.29	0.31	0.03	0.52
Control Delay (s/veh)	19.1	3.2	2.7	4.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	19.1	3.2	2.7	4.9
LOS	B	A	A	A
Approach Delay (s/veh)	19.1	3.2		4.8
Approach LOS	B	A		A
Intersection Summary				
Cycle Length: 60				
Actuated Cycle Length: 60				
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green				
Natural Cycle: 60				
Control Type: Actuated-Coordinated				
Maximum v/c Ratio: 0.52				
Intersection Signal Delay (s/veh): 4.9			Intersection LOS: A	
Intersection Capacity Utilization 51.9%			ICU Level of Service A	
Analysis Period (min) 15				

Splits and Phases: 7: Brockton Avenue & Terracina Drive



HCM 7th Signalized Intersection Summary

7: Brockton Avenue & Terracina Drive

02/10/2025



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	35	26	440	14	23	764
Future Volume (veh/h)	35	26	440	14	23	764
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	37	27	463	15	24	804
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	53	39	1432	46	783	1487
Arrive On Green	0.06	0.06	0.79	0.79	0.79	0.79
Sat Flow, veh/h	965	704	1801	58	916	1870
Grp Volume(v), veh/h	65	0	0	478	24	804
Grp Sat Flow(s),veh/h/ln	1695	0	0	1860	916	1870
Q Serve(g_s), s	2.3	0.0	0.0	4.3	0.4	9.3
Cycle Q Clear(g_c), s	2.3	0.0	0.0	4.3	4.7	9.3
Prop In Lane	0.57	0.42		0.03	1.00	
Lane Grp Cap(c), veh/h	93	0	0	1478	783	1487
V/C Ratio(X)	0.70	0.00	0.00	0.32	0.03	0.54
Avail Cap(c_a), veh/h	509	0	0	1478	783	1487
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.92	0.92
Uniform Delay (d), s/veh	27.9	0.0	0.0	1.7	2.3	2.2
Incr Delay (d2), s/veh	8.9	0.0	0.0	0.6	0.1	1.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0	0.6	0.1	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	36.8	0.0	0.0	2.3	2.4	3.5
LnGrp LOS	D			A	A	A
Approach Vol, veh/h	65		478			828
Approach Delay, s/veh	36.8		2.3			3.5
Approach LOS	D		A			A
Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	52.2				52.2	7.8
Change Period (Y+Rc), s	4.5				4.5	4.5
Max Green Setting (Gmax), s	33.0				33.0	18.0
Max Q Clear Time (g_c+I1), s	6.3				11.3	4.3
Green Ext Time (p_c), s	3.2				6.4	0.1
Intersection Summary						
HCM 7th Control Delay, s/veh			4.6			
HCM 7th LOS			A			

Timings

8: Market Street & Terracina Drive

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	17	19	118	16	104	12	626	34	45	973
Future Volume (vph)	17	19	118	16	104	12	626	34	45	973
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5
Total Split (s)	9.5	22.5	11.0	24.0	24.0	9.5	26.1	26.1	10.4	27.0
Total Split (%)	13.6%	32.1%	15.7%	34.3%	34.3%	13.6%	37.3%	37.3%	14.9%	38.6%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max
Act Effect Green (s)	5.0	6.5	6.5	9.4	9.4	6.1	42.0	42.0	7.3	47.3
Actuated g/C Ratio	0.07	0.09	0.09	0.13	0.13	0.09	0.60	0.60	0.10	0.68
v/c Ratio	0.14	0.18	0.76	0.07	0.31	0.08	0.31	0.04	0.25	0.45
Control Delay (s/veh)	33.2	23.6	61.4	25.4	4.3	30.2	10.2	0.1	31.6	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.2	23.6	61.4	25.4	4.3	30.2	10.2	0.1	31.6	8.3
LOS	C	C	E	C	A	C	B	A	C	A
Approach Delay (s/veh)		27.1		34.1			10.1			9.3
Approach LOS		C		C			B			A

Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay (s/veh): 12.9

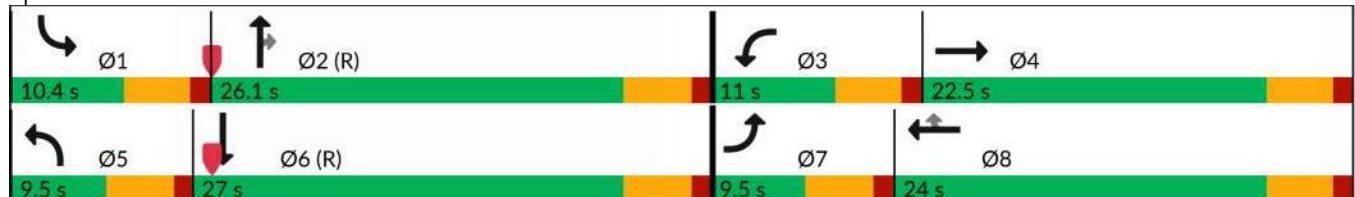
Intersection LOS: B

Intersection Capacity Utilization 56.7%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 8: Market Street & Terracina Drive



HCM 7th Signalized Intersection Summary

8: Market Street & Terracina Drive

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	19	11	118	16	104	12	626	34	45	973	36
Future Volume (veh/h)	17	19	11	118	16	104	12	626	34	45	973	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	20	12	124	17	109	13	659	36	47	1024	38
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	38	76	45	157	255	216	28	1929	860	76	1991	74
Arrive On Green	0.02	0.07	0.07	0.09	0.14	0.14	0.02	0.54	0.54	0.04	0.57	0.57
Sat Flow, veh/h	1781	1095	657	1781	1870	1585	1781	3554	1585	1781	3494	130
Grp Volume(v), veh/h	18	0	32	124	17	109	13	659	36	47	521	541
Grp Sat Flow(s),veh/h/ln	1781	0	1752	1781	1870	1585	1781	1777	1585	1781	1777	1847
Q Serve(g_s), s	0.7	0.0	1.2	4.8	0.6	4.5	0.5	7.3	0.7	1.8	12.5	12.5
Cycle Q Clear(g_c), s	0.7	0.0	1.2	4.8	0.6	4.5	0.5	7.3	0.7	1.8	12.5	12.5
Prop In Lane	1.00		0.38	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	38	0	121	157	255	216	28	1929	860	76	1012	1052
V/C Ratio(X)	0.48	0.00	0.26	0.79	0.07	0.51	0.46	0.34	0.04	0.62	0.51	0.51
Avail Cap(c_a), veh/h	127	0	451	165	521	442	127	1929	860	150	1012	1052
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	1.00	1.00	1.00	1.00	1.00	0.88	0.88	0.88
Uniform Delay (d), s/veh	33.9	0.0	30.9	31.3	26.4	28.0	34.1	9.0	7.5	32.9	9.2	9.2
Incr Delay (d2), s/veh	9.2	0.0	1.2	21.4	0.1	1.8	11.0	0.5	0.1	6.9	1.6	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	0.4	0.0	0.5	2.9	0.2	1.7	0.3	2.6	0.2	0.9	4.5	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	43.0	0.0	32.0	52.7	26.5	29.9	45.2	9.5	7.6	39.9	10.8	10.8
LnGrp LOS	D		C	D	C	C	D	A	A	D	B	B
Approach Vol, veh/h	50			250			708			1109		
Approach Delay, s/veh	36.0			40.9			10.0			12.0		
Approach LOS	D			D			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.5	42.5	10.7	9.3	5.6	44.4	6.0	14.0				
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	5.9	21.6	6.5	18.0	5.0	22.5	5.0	19.5				
Max Q Clear Time (g_c+I1), s	3.8	9.3	6.8	3.2	2.5	14.5	2.7	6.5				
Green Ext Time (p_c), s	0.0	3.7	0.0	0.1	0.0	4.2	0.0	0.3				
Intersection Summary												
HCM 7th Control Delay, s/veh	15.3											
HCM 7th LOS	B											

HCM 7th TWSC
101: Brockton Avenue & EX South RCH Driveway

02/10/2025

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↗↗			↗↗
Traffic Vol, veh/h	0	54	727	17	0	841
Future Vol, veh/h	0	54	727	17	0	841
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	25	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	57	773	18	0	895
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	396	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	*878	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		0	-	-	-	-
Mov Cap-1 Maneuver	-	*878	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s/v	9.39	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBT		
Capacity (veh/h)	-	- 878		-		
HCM Lane V/C Ratio	-	- 0.065		-		
HCM Control Delay (s/veh)	-	- 9.4		-		
HCM Lane LOS	-	- A		-		
HCM 95th %tile Q(veh)	-	- 0.2		-		
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

HCM 7th TWSC
102: Brockton Avenue & New North RCH Driveway

02/10/2025

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	35	730	10	16	763
Future Vol, veh/h	22	35	730	10	16	763
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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	37	768	11	17	803
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1209	389	0	0	779	0
Stage 1	774	-	-	-	-	-
Stage 2	435	-	-	-	-	-
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	*175	*878	-	-	1057	-
Stage 1	*622	-	-	-	-	-
Stage 2	*842	-	-	-	-	-
Platoon blocked, %		0	-	-	0	-
Mov Cap-1 Maneuver	*172	*878	-	-	1057	-
Mov Cap-2 Maneuver	*172	-	-	-	-	-
Stage 1	*622	-	-	-	-	-
Stage 2	*825	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s/v	17.87	0		0.34		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-	339	74	-	
HCM Lane V/C Ratio	-	-	0.177	0.016	-	
HCM Control Delay (s/veh)	-	-	17.9	8.5	0.2	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	0.6	0	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

HCM 7th TWSC
103: Brockton Avenue & New Garage Egress

02/10/2025

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	11	766	0	0	767
Future Vol, veh/h	11	11	766	0	0	767
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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	12	806	0	0	807
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1210	403	0	-	-	-
Stage 1	806	-	-	-	-	-
Stage 2	404	-	-	-	-	-
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	*175	*878	-	0	0	-
Stage 1	*594	-	-	0	0	-
Stage 2	*815	-	-	0	0	-
Platoon blocked, %		0	-			-
Mov Cap-1 Maneuver	*175	*878	-	-	-	-
Mov Cap-2 Maneuver	*175	-	-	-	-	-
Stage 1	*594	-	-	-	-	-
Stage 2	*815	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s/v	18.39		0		0	
HCM LOS	C					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	- 292		-			
HCM Lane V/C Ratio	- 0.079		-			
HCM Control Delay (s/veh)	- 18.4		-			
HCM Lane LOS	- C		-			
HCM 95th %tile Q(veh)	- 0.3		-			
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Intersection						
Int Delay, s/veh	1.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↱		↱	↑↑		↱
Traffic Vol, veh/h	581	32	52	536	0	100
Future Vol, veh/h	581	32	52	536	0	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	120	-	-	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	638	35	57	589	0	110
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	674	0	-	337
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.14	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.22	-	-	3.32
Pot Cap-1 Maneuver	-	-	1074	-	0	*941
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-	0	-	-	0
Mov Cap-1 Maneuver	-	-	1074	-	-	*941
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		0.76		9.33	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	941	-	-	1074	-	
HCM Lane V/C Ratio	0.117	-	-	0.053	-	
HCM Control Delay (s/veh)	9.3	-	-	8.5	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.4	-	-	0.2	-	
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

Queuing and Blocking Report

Baseline

02/11/2025

Intersection: 1: Brockton Avenue & University Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	67	152	195	74	80	110	75	248	124	74	263	38
Average Queue (ft)	7	84	105	29	33	54	47	90	33	17	106	4
95th Queue (ft)	35	139	179	63	66	95	85	190	97	54	210	22
Link Distance (ft)		823	823		1114	1114		2322			397	397
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	95			100			50		100	50		
Storage Blk Time (%)		5		0	0		8	15	0	0	24	
Queuing Penalty (veh)		0		0	0		25	29	0	1	7	

Intersection: 2: Market Street & University Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	R	L	T
Maximum Queue (ft)	84	160	175	110	144	129	74	157	178	79	75	371
Average Queue (ft)	44	84	111	44	75	56	38	68	86	24	43	214
95th Queue (ft)	89	138	165	87	124	105	75	132	143	58	80	346
Link Distance (ft)		1114	1114		869	869		2312	2312	2312		404
Upstream Blk Time (%)												1
Queuing Penalty (veh)												0
Storage Bay Dist (ft)	60			195			50				50	
Storage Blk Time (%)	3	17					8	16			16	44
Queuing Penalty (veh)	4	8					18	7			76	26

Intersection: 2: Market Street & University Avenue

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	308	182
Average Queue (ft)	166	23
95th Queue (ft)	297	92
Link Distance (ft)	404	404
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report

Baseline

02/11/2025

Intersection: 3: Brockton Avenue & 14th Street

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	L	TR	L	T	R	L	T	R
Maximum Queue (ft)	84	177	146	146	143	58	201	111	75	418	110
Average Queue (ft)	18	86	86	91	105	8	137	45	55	161	10
95th Queue (ft)	58	150	137	141	154	36	215	87	85	306	56
Link Distance (ft)		353	132	132	132		180	180		2322	
Upstream Blk Time (%)			2	2	4		4				
Queuing Penalty (veh)			3	4	8		14				
Storage Bay Dist (ft)	70					50			50		100
Storage Blk Time (%)	0	16				0	35		30	22	0
Queuing Penalty (veh)	0	3				1	3		133	26	0

Intersection: 4: Market Street & 14th Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	R	L	T
Maximum Queue (ft)	115	178	185	160	380	342	114	178	194	127	122	222
Average Queue (ft)	57	102	122	139	206	205	45	97	111	56	58	106
95th Queue (ft)	112	159	172	184	382	354	87	152	170	99	109	182
Link Distance (ft)		924	924		364	364		646	646	646		2312
Upstream Blk Time (%)					8	1						
Queuing Penalty (veh)					0	0						
Storage Bay Dist (ft)	90			135			150				100	
Storage Blk Time (%)	3	12		24	7			1			4	8
Queuing Penalty (veh)	7	10		77	16			0			11	6

Intersection: 4: Market Street & 14th Street

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	199	116
Average Queue (ft)	111	44
95th Queue (ft)	176	85
Link Distance (ft)	2312	2312
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report

Baseline

02/11/2025

Intersection: 5: Brockton Avenue & Tequesquite Avenue

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	T	TR
Maximum Queue (ft)	124	271	75	110	77	415	108	131	142
Average Queue (ft)	92	74	20	42	29	138	37	32	42
95th Queue (ft)	141	223	51	80	70	317	80	79	99
Link Distance (ft)		559		432		917		272	272
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	100		100		55		100		
Storage Blk Time (%)	22	0	0	1	1	15	1	0	
Queuing Penalty (veh)	11	0	0	0	5	10	2	1	

Intersection: 6: Market Street & 15th Street

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	95	66	81	56	116	205	231	104	182	191
Average Queue (ft)	46	23	32	19	39	64	87	40	67	84
95th Queue (ft)	81	51	65	48	87	142	176	84	144	165
Link Distance (ft)		222		358		1220	1220		646	646
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	90		95		105			80		
Storage Blk Time (%)	1	0	0		1	2		1	4	
Queuing Penalty (veh)	1	0	0		2	1		2	3	

Intersection: 7: Brockton Avenue & Terracina Drive

Movement	WB	NB	SB	SB
Directions Served	LR	TR	L	T
Maximum Queue (ft)	114	206	56	313
Average Queue (ft)	50	55	33	60
95th Queue (ft)	87	140	58	195
Link Distance (ft)	1280	543		917
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			30	
Storage Blk Time (%)			15	5
Queuing Penalty (veh)			67	5

Queuing and Blocking Report

Baseline

02/11/2025

Intersection: 8: Market Street & Terracina Drive

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	75	143	22	38	47	73	201	229	80	148	188	151
Average Queue (ft)	48	46	1	12	20	8	79	57	19	78	36	49
95th Queue (ft)	80	106	11	35	46	32	167	162	67	136	109	118
Link Distance (ft)		1280		391			567	567			1220	1220
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	50		175		100	100			55	125		
Storage Blk Time (%)	13	7					5	6	0	3	0	
Queuing Penalty (veh)	12	8					1	15	1	9	0	

Intersection: 101: Brockton Avenue & EX South RCH Driveway

Movement	WB
Directions Served	R
Maximum Queue (ft)	52
Average Queue (ft)	18
95th Queue (ft)	46
Link Distance (ft)	121
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 102: Brockton Avenue & New North RCH Driveway

Movement	WB	NB	SB	SB
Directions Served	LR	T	LT	T
Maximum Queue (ft)	47	11	76	13
Average Queue (ft)	13	1	23	0
95th Queue (ft)	38	9	64	10
Link Distance (ft)	212	211	170	170
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report

Baseline

02/11/2025

Intersection: 103: Brockton Avenue & New Garage Egress

Movement	WB	NB
Directions Served	LR	T
Maximum Queue (ft)	40	130
Average Queue (ft)	8	16
95th Queue (ft)	29	72
Link Distance (ft)	91	170
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 104: RCH Driveway & 14th Street

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	R
Maximum Queue (ft)	18	40	120	28	95	74
Average Queue (ft)	1	5	54	1	12	35
95th Queue (ft)	9	23	96	14	51	61
Link Distance (ft)	132	132		924	924	99
Upstream Blk Time (%)						0
Queuing Penalty (veh)						0
Storage Bay Dist (ft)			120			
Storage Blk Time (%)			0			
Queuing Penalty (veh)			1			

Network Summary

Network wide Queuing Penalty: 681

Queuing and Blocking Report

Baseline

02/11/2025

Intersection: 1: Brockton Avenue & University Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	45	182	196	110	135	149	75	491	125	74	240	34
Average Queue (ft)	3	95	99	39	71	85	68	206	52	31	113	7
95th Queue (ft)	16	152	181	80	119	132	88	412	135	71	204	28
Link Distance (ft)		823	823		1114	1114		2322			397	397
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	95			100			50		100	50		
Storage Blk Time (%)		9		0	1		26	29	0	2	32	
Queuing Penalty (veh)		0		0	1		113	89	0	6	16	

Intersection: 2: Market Street & University Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	R	L	T
Maximum Queue (ft)	84	189	204	106	128	133	75	332	322	214	75	411
Average Queue (ft)	43	114	132	46	79	59	66	184	180	57	72	270
95th Queue (ft)	92	171	191	90	127	109	87	286	284	129	84	405
Link Distance (ft)		1114	1114		869	869		2312	2312	2312		404
Upstream Blk Time (%)												2
Queuing Penalty (veh)												0
Storage Bay Dist (ft)	60			195			50				50	
Storage Blk Time (%)	2	28					38	36			63	28
Queuing Penalty (veh)	4	14					148	41			218	51

Intersection: 2: Market Street & University Avenue

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	366	129
Average Queue (ft)	198	25
95th Queue (ft)	339	86
Link Distance (ft)	404	404
Upstream Blk Time (%)	0	0
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report

Baseline

02/11/2025

Intersection: 3: Brockton Avenue & 14th Street

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	L	TR	L	T	R	L	T	R
Maximum Queue (ft)	71	154	125	132	148	68	201	111	75	424	125
Average Queue (ft)	16	65	68	74	120	12	148	45	61	199	9
95th Queue (ft)	50	117	111	122	171	44	218	84	85	357	55
Link Distance (ft)		353	132	132	132		180	180		2322	
Upstream Blk Time (%)			0	1	13		4				
Queuing Penalty (veh)			1	1	23		15				
Storage Bay Dist (ft)	70					50			50		100
Storage Blk Time (%)	0	9				1	37		37	24	0
Queuing Penalty (veh)	0	1				3	4		192	30	0

Intersection: 4: Market Street & 14th Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	R	L	T
Maximum Queue (ft)	115	220	224	160	347	321	156	246	252	230	125	351
Average Queue (ft)	69	116	132	136	162	174	53	130	140	68	109	184
95th Queue (ft)	123	188	196	179	313	281	116	200	216	136	147	318
Link Distance (ft)		924	924		364	364		646	646	646		2312
Upstream Blk Time (%)					1	0						
Queuing Penalty (veh)					0	0						
Storage Bay Dist (ft)	90			135			150				100	
Storage Blk Time (%)	6	16		21	1		0	4			31	15
Queuing Penalty (veh)	15	15		51	4		0	2			108	27

Intersection: 4: Market Street & 14th Street

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	300	107
Average Queue (ft)	170	33
95th Queue (ft)	273	73
Link Distance (ft)	2312	2312
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report

Baseline

02/11/2025

Intersection: 5: Brockton Avenue & Tequesquite Avenue

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	T	TR
Maximum Queue (ft)	105	89	124	178	79	218	83	191	203
Average Queue (ft)	56	27	47	67	25	82	11	66	80
95th Queue (ft)	101	63	94	127	64	172	48	144	158
Link Distance (ft)		559		432		917		272	272
Upstream Blk Time (%)									0
Queuing Penalty (veh)									0
Storage Bay Dist (ft)	100		100		55		100		
Storage Blk Time (%)	1	0	0	3	0	9		4	
Queuing Penalty (veh)	1	0	1	2	2	3		1	

Intersection: 6: Market Street & 15th Street

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	106	122	81	64	89	158	190	69	229	244
Average Queue (ft)	51	44	36	25	27	57	79	10	102	119
95th Queue (ft)	95	87	69	55	64	128	162	40	197	218
Link Distance (ft)		222		358		1220	1220		646	646
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	90		95		105			80		
Storage Blk Time (%)	2	0	0		0	1			7	
Queuing Penalty (veh)	2	0	0		0	0			1	

Intersection: 7: Brockton Avenue & Terracina Drive

Movement	WB	NB	SB	SB
Directions Served	LR	TR	L	T
Maximum Queue (ft)	96	128	46	228
Average Queue (ft)	42	29	10	68
95th Queue (ft)	82	88	36	175
Link Distance (ft)	1280	543		917
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			30	
Storage Blk Time (%)			2	7
Queuing Penalty (veh)			16	2

Queuing and Blocking Report

Baseline

02/11/2025

Intersection: 8: Market Street & Terracina Drive

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	33	57	143	51	83	31	132	116	20	110	206	232
Average Queue (ft)	8	23	73	10	37	5	48	24	1	26	72	88
95th Queue (ft)	26	49	122	37	64	18	108	74	12	66	164	189
Link Distance (ft)		1280		391			567	567			1220	1220
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	50		175		100	100			55	125		
Storage Blk Time (%)	0	4	0		0		1	1			2	
Queuing Penalty (veh)	0	1	0		0		0	0			1	

Intersection: 101: Brockton Avenue & EX South RCH Driveway

Movement	WB
Directions Served	R
Maximum Queue (ft)	62
Average Queue (ft)	29
95th Queue (ft)	55
Link Distance (ft)	121
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 102: Brockton Avenue & New North RCH Driveway

Movement	WB	NB	SB
Directions Served	LR	T	LT
Maximum Queue (ft)	77	22	62
Average Queue (ft)	28	1	11
95th Queue (ft)	55	17	42
Link Distance (ft)	212	211	170
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report Baseline

02/11/2025

Intersection: 103: Brockton Avenue & New Garage Egress

Movement	WB	NB
Directions Served	LR	T
Maximum Queue (ft)	44	124
Average Queue (ft)	16	18
95th Queue (ft)	41	81
Link Distance (ft)	91	170
Upstream Blk Time (%)		0
Queuing Penalty (veh)		1
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 104: RCH Driveway & 14th Street

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	R
Maximum Queue (ft)	6	12	60	11	222	70
Average Queue (ft)	0	0	23	1	49	33
95th Queue (ft)	4	5	53	9	152	56
Link Distance (ft)	132	132		924	924	99
Upstream Blk Time (%)						0
Queuing Penalty (veh)						0
Storage Bay Dist (ft)			120			
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 1229

APPENDIX C-4

INTERSECTION ANALYSIS WORKSHEETS – BUILD OUT 2035 PLUS PROJECT

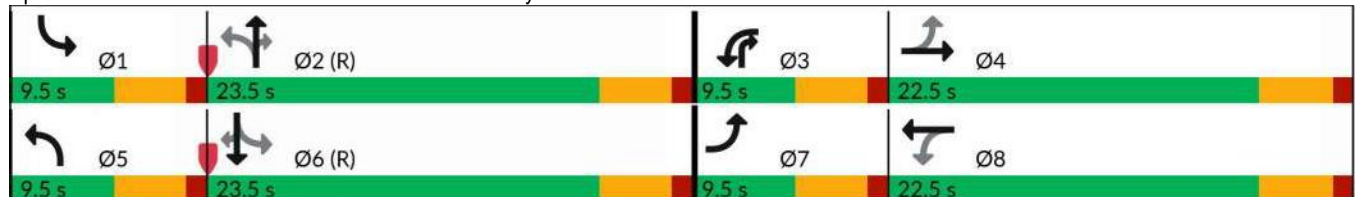
Timings

1: Brockton Avenue & University Avenue

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	13	248	45	230	57	326	27	53	506	26
Future Volume (vph)	13	248	45	230	57	326	27	53	506	26
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4	3	8	5	2	3	1	6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	7	4	3	8	5	2	3	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	9.5	9.5	22.5	22.5
Total Split (s)	9.5	22.5	9.5	22.5	9.5	23.5	9.5	9.5	23.5	23.5
Total Split (%)	14.6%	34.6%	14.6%	34.6%	14.6%	36.2%	14.6%	14.6%	36.2%	36.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	None	C-Max	C-Max
Act Effot Green (s)	14.5	11.5	16.3	15.3	36.1	32.2	41.7	36.0	32.1	32.1
Actuated g/C Ratio	0.22	0.18	0.25	0.24	0.56	0.50	0.64	0.55	0.49	0.49
v/c Ratio	0.04	0.65	0.20	0.32	0.14	0.35	0.03	0.09	0.55	0.03
Control Delay (s/veh)	13.4	15.0	16.5	18.0	9.2	16.1	0.0	8.9	20.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	13.4	15.0	16.5	18.0	9.2	16.1	0.0	8.9	20.9	0.1
LOS	B	B	B	B	A	B	A	A	C	A
Approach Delay (s/veh)		15.0		17.8		14.1			18.9	
Approach LOS		B		B		B			B	
Intersection Summary										
Cycle Length: 65										
Actuated Cycle Length: 65										
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green										
Natural Cycle: 65										
Control Type: Actuated-Coordinated										
Maximum v/c Ratio: 0.65										
Intersection Signal Delay (s/veh): 16.5					Intersection LOS: B					
Intersection Capacity Utilization 65.5%					ICU Level of Service C					
Analysis Period (min) 15										

Splits and Phases: 1: Brockton Avenue & University Avenue



HCM 7th Signalized Intersection Summary

1: Brockton Avenue & University Avenue

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	248	269	45	230	42	57	326	27	53	506	26
Future Volume (veh/h)	13	248	269	45	230	42	57	326	27	53	506	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	248	269	45	230	42	57	326	27	53	506	26
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	337	382	341	235	728	131	372	781	730	498	777	659
Arrive On Green	0.02	0.22	0.22	0.04	0.24	0.24	0.05	0.42	0.42	0.05	0.42	0.42
Sat Flow, veh/h	1781	1777	1585	1781	3009	541	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	13	248	269	45	134	138	57	326	27	53	506	26
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1773	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.4	8.3	10.4	1.3	4.0	4.1	1.1	8.0	0.6	1.1	14.1	0.6
Cycle Q Clear(g_c), s	0.4	8.3	10.4	1.3	4.0	4.1	1.1	8.0	0.6	1.1	14.1	0.6
Prop In Lane	1.00		1.00	1.00		0.30	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	337	382	341	235	430	429	372	781	730	498	777	659
V/C Ratio(X)	0.04	0.65	0.79	0.19	0.31	0.32	0.15	0.42	0.04	0.11	0.65	0.04
Avail Cap(c_a), veh/h	445	492	439	296	492	491	421	781	730	551	777	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	1.00	1.00	0.90	0.90	0.90	0.33	0.33	0.33	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.4	23.3	24.1	19.2	20.2	20.3	11.2	13.3	9.6	10.2	15.2	11.3
Incr Delay (d2), s/veh	0.0	1.9	7.2	0.4	0.4	0.4	0.1	0.5	0.0	0.1	4.2	0.1
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	0.1	3.5	4.3	0.5	1.6	1.7	0.4	3.1	0.2	0.4	6.2	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.4	25.2	31.3	19.6	20.6	20.6	11.3	13.9	9.7	10.3	19.4	11.4
LnGrp LOS	B	C	C	B	C	C	B	B	A	B	B	B
Approach Vol, veh/h	530			317			410			585		
Approach Delay, s/veh	28.1			20.5			13.2			18.2		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.6	31.7	7.3	18.5	7.7	31.5	5.5	20.2				
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	5.0	19.0	5.0	18.0	5.0	19.0	5.0	18.0				
Max Q Clear Time (g_c+I1), s	3.1	10.0	3.3	12.4	3.1	16.1	2.4	6.1				
Green Ext Time (p_c), s	0.0	1.3	0.0	1.6	0.0	0.9	0.0	1.1				
Intersection Summary												
HCM 7th Control Delay, s/veh	20.4											
HCM 7th LOS	C											
Notes												
User approved changes to right turn type.												

Timings

2: Market Street & University Avenue

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	31	218	157	240	161	547	119	25	1392	29
Future Volume (vph)	31	218	157	240	161	547	119	25	1392	29
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	10.3	22.5	13.1	25.3	13.3	44.4	44.4	10.0	41.1	41.1
Total Split (%)	11.4%	25.0%	14.6%	28.1%	14.8%	49.3%	49.3%	11.1%	45.7%	45.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effect Green (s)	5.7	12.2	8.6	19.2	12.4	51.1	51.1	6.3	38.7	38.7
Actuated g/C Ratio	0.06	0.14	0.10	0.21	0.14	0.57	0.57	0.07	0.43	0.43
v/c Ratio	0.27	0.67	0.93	0.36	0.66	0.27	0.12	0.20	0.91	0.04
Control Delay (s/veh)	46.6	28.1	95.8	30.6	34.8	17.3	10.5	43.3	35.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.6	28.1	95.8	30.6	34.8	17.3	10.5	43.3	35.8	0.1
LOS	D	C	F	C	C	B	B	D	D	A
Approach Delay (s/veh)		29.4		54.6		19.7			35.2	
Approach LOS		C		D		B			D	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay (s/veh): 33.0

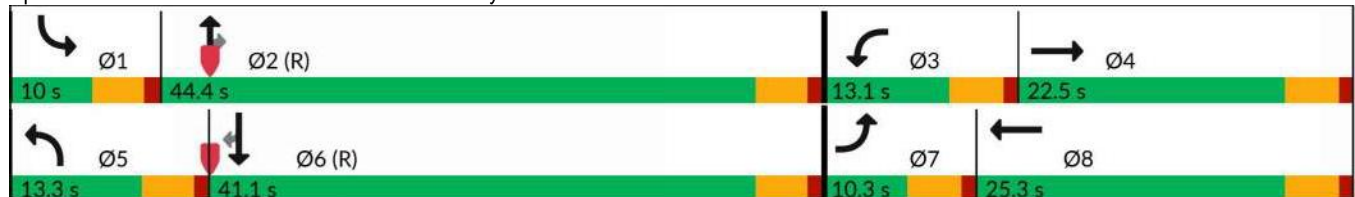
Intersection LOS: C

Intersection Capacity Utilization 82.5%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 2: Market Street & University Avenue



HCM 7th Signalized Intersection Summary

2: Market Street & University Avenue

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	218	169	157	240	29	161	547	119	25	1392	29
Future Volume (veh/h)	31	218	169	157	240	29	161	547	119	25	1392	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	31	218	169	157	240	29	161	547	119	25	1392	29
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	53	288	213	170	683	82	174	1885	841	46	1630	727
Arrive On Green	0.03	0.15	0.15	0.10	0.21	0.21	0.03	0.18	0.18	0.03	0.46	0.46
Sat Flow, veh/h	1781	1947	1440	1781	3196	382	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	31	198	189	157	132	137	161	547	119	25	1392	29
Grp Sat Flow(s),veh/h/ln	1781	1777	1611	1781	1777	1802	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	1.5	9.6	10.2	7.9	5.7	5.8	8.1	12.0	5.7	1.2	31.4	0.9
Cycle Q Clear(g_c), s	1.5	9.6	10.2	7.9	5.7	5.8	8.1	12.0	5.7	1.2	31.4	0.9
Prop In Lane	1.00		0.89	1.00		0.21	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	53	263	239	170	380	385	174	1885	841	46	1630	727
V/C Ratio(X)	0.58	0.75	0.79	0.92	0.35	0.36	0.92	0.29	0.14	0.54	0.85	0.04
Avail Cap(c_a), veh/h	115	355	322	170	411	416	174	1885	841	109	1630	727
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.80	0.80	0.80	1.00	1.00	1.00	0.64	0.64	0.64	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.1	36.8	37.0	40.4	30.1	30.1	43.2	22.4	19.8	43.3	21.7	13.4
Incr Delay (d2), s/veh	7.8	4.9	7.5	47.0	0.5	0.6	35.1	0.2	0.2	9.6	5.9	0.1
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	0.8	4.5	4.4	5.6	2.5	2.5	5.5	5.7	2.2	0.7	13.5	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	50.9	41.6	44.5	87.4	30.6	30.7	78.3	22.6	20.0	52.9	27.6	13.5
LnGrp LOS	D	D	D	F	C	C	E	C	C	D	C	B
Approach Vol, veh/h	418			426			827			1446		
Approach Delay, s/veh	43.6			51.6			33.1			27.8		
Approach LOS	D			D			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.8	52.2	13.1	17.8	13.3	45.8	7.2	23.7				
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	5.5	39.9	8.6	18.0	8.8	36.6	5.8	20.8				
Max Q Clear Time (g_c+I1), s	3.2	14.0	9.9	12.2	10.1	33.4	3.5	7.8				
Green Ext Time (p_c), s	0.0	4.3	0.0	1.1	0.0	2.5	0.0	1.2				
Intersection Summary												
HCM 7th Control Delay, s/veh	34.6											
HCM 7th LOS	C											

Timings

3: Brockton Avenue & 14th Street

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	46	127	302	69	18	671	240	222	606	17
Future Volume (vph)	46	127	302	69	18	671	240	222	606	17
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	3	1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	9.5	9.5	22.5	22.5
Total Split (s)	11.1	22.5	13.4	24.8	9.5	38.3	13.4	15.8	44.6	44.6
Total Split (%)	12.3%	25.0%	14.9%	27.6%	10.6%	42.6%	14.9%	17.6%	49.6%	49.6%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	None	C-Max	C-Max
Act Effect Green (s)	6.4	12.4	8.9	19.1	6.0	35.0	48.4	15.7	50.9	50.9
Actuated g/C Ratio	0.07	0.14	0.10	0.21	0.07	0.39	0.54	0.17	0.57	0.57
v/c Ratio	0.37	0.59	0.89	0.44	0.15	0.93	0.25	0.72	0.58	0.02
Control Delay (s/veh)	48.5	42.7	69.8	39.5	36.3	44.4	3.8	51.3	17.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	48.5	42.7	69.8	39.5	36.3	44.4	3.8	51.3	17.7	0.1
LOS	D	D	E	D	D	D	A	D	B	A
Approach Delay (s/veh)		44.0		58.2		33.8			26.2	
Approach LOS		D		E		C			C	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay (s/veh): 36.8

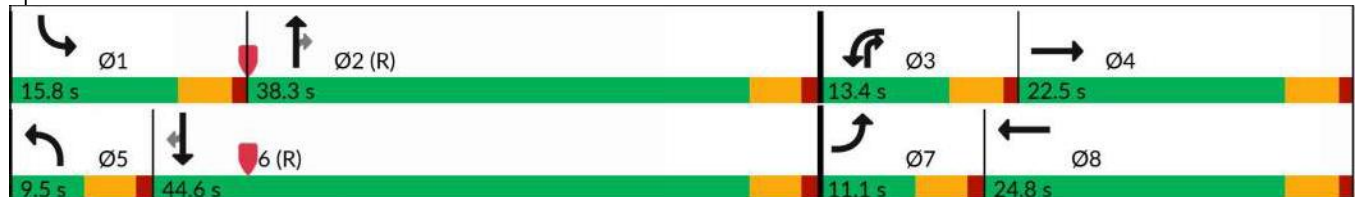
Intersection LOS: D

Intersection Capacity Utilization 79.6%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3: Brockton Avenue & 14th Street



HCM 7th Signalized Intersection Summary

3: Brockton Avenue & 14th Street

02/10/2025

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	46	127	27	302	69	118	18	671	240	222	606	17	
Future Volume (veh/h)	46	127	27	302	69	118	18	671	240	222	606	17	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Width 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	
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	
Work Zone On Approach	No			No			No			No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	46	127	27	302	69	118	18	671	240	222	606	17	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2	
Cap, veh/h	68	164	35	342	106	181	36	871	895	224	1068	905	
Arrive On Green	0.04	0.11	0.11	0.03	0.06	0.06	0.01	0.31	0.31	0.13	0.57	0.57	
Sat Flow, veh/h	1781	1495	318	3456	620	1060	1781	1870	1585	1781	1870	1585	
Grp Volume(v), veh/h	46	0	154	302	0	187	18	671	240	222	606	17	
Grp Sat Flow(s),veh/h/ln	1781	0	1813	1728	0	1680	1781	1870	1585	1781	1870	1585	
Q Serve(g_s), s	2.3	0.0	7.4	7.8	0.0	9.8	0.9	29.2	8.5	11.2	18.5	0.4	
Cycle Q Clear(g_c), s	2.3	0.0	7.4	7.8	0.0	9.8	0.9	29.2	8.5	11.2	18.5	0.4	
Prop In Lane	1.00		0.18	1.00		0.63	1.00		1.00	1.00		1.00	
Lane Grp Cap(c), veh/h	68	0	199	342	0	287	36	871	895	224	1068	905	
V/C Ratio(X)	0.68	0.00	0.77	0.88	0.00	0.65	0.50	0.77	0.27	0.99	0.57	0.02	
Avail Cap(c_a), veh/h	131	0	363	342	0	379	99	871	895	224	1068	905	
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	0.67	0.67	0.67	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.84	0.84	0.84	
Uniform Delay (d), s/veh	42.8	0.0	39.0	43.0	0.0	39.8	43.9	26.6	13.4	39.3	12.2	8.4	
Incr Delay (d2), s/veh	11.3	0.0	6.3	22.8	0.0	2.5	10.4	6.5	0.7	53.0	1.8	0.0	
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	1.2	0.0	3.6	4.6	0.0	4.5	0.5	15.1	3.2	8.1	7.6	0.1	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d), s/veh	54.1	0.0	45.2	65.8	0.0	42.3	54.4	33.1	14.1	92.3	14.1	8.4	
LnGrp LOS	D		D	E		D	D	C	B	F	B	A	
Approach Vol, veh/h	200				489				929				845
Approach Delay, s/veh	47.3				56.8				28.6				34.5
Approach LOS	D				E				C				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	15.8	46.4	13.4	14.4	6.3	55.9	7.9	19.9					
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	11.3	33.8	8.9	18.0	5.0	40.1	6.6	20.3					
Max Q Clear Time (g_c+I1), s	13.2	31.2	9.8	9.4	2.9	20.5	4.3	11.8					
Green Ext Time (p_c), s	0.0	1.4	0.0	0.5	0.0	4.1	0.0	0.6					
Intersection Summary													
HCM 7th Control Delay, s/veh	37.8												
HCM 7th LOS	D												
Notes													
User approved changes to right turn type.													

Timings

4: Market Street & 14th Street

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	110	450	454	639	83	786	236	77	836	167
Future Volume (vph)	110	450	454	639	83	786	236	77	836	167
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	16.6	22.5	29.0	34.9	10.0	29.0	29.0	9.5	28.5	28.5
Total Split (%)	18.4%	25.0%	32.2%	38.8%	11.1%	32.2%	32.2%	10.6%	31.7%	31.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effect Green (s)	10.2	17.3	24.3	33.7	5.8	27.3	27.3	5.3	26.9	26.9
Actuated g/C Ratio	0.11	0.19	0.27	0.37	0.06	0.30	0.30	0.06	0.30	0.30
v/c Ratio	0.55	0.82	0.95	0.55	0.73	0.73	0.37	0.73	0.79	0.28
Control Delay (s/veh)	44.5	50.3	64.7	24.5	78.4	34.1	5.5	54.2	28.8	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.5	50.3	64.7	24.5	78.4	34.1	5.5	54.2	28.8	9.3
LOS	D	D	E	C	E	C	A	D	C	A
Approach Delay (s/veh)		49.3		40.0		31.3			27.6	
Approach LOS		D		D		C			C	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay (s/veh): 35.9

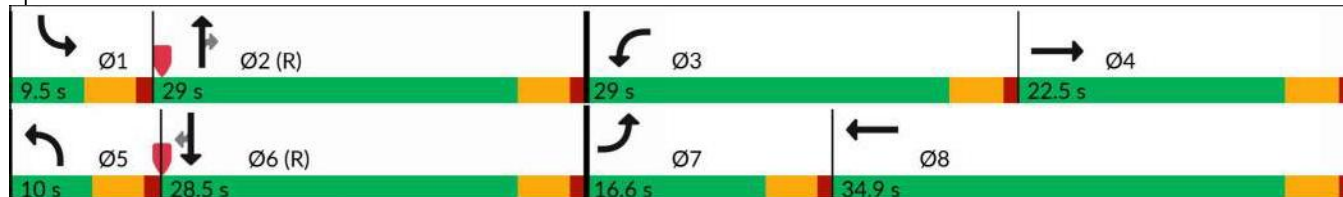
Intersection LOS: D

Intersection Capacity Utilization 83.9%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 4: Market Street & 14th Street



HCM 7th Signalized Intersection Summary

4: Market Street & 14th Street

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	450	114	454	639	84	83	786	236	77	836	167
Future Volume (veh/h)	110	450	114	454	639	84	83	786	236	77	836	167
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	110	450	114	454	639	84	83	786	236	77	836	167
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	141	530	133	484	1202	158	106	1011	451	99	997	445
Arrive On Green	0.03	0.06	0.06	0.27	0.38	0.38	0.06	0.28	0.28	0.02	0.09	0.09
Sat Flow, veh/h	1781	2813	707	1781	3158	415	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	110	283	281	454	359	364	83	786	236	77	836	167
Grp Sat Flow(s),veh/h/ln	1781	1777	1743	1781	1777	1796	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	5.5	14.2	14.4	22.4	14.1	14.2	4.1	18.3	11.3	3.9	20.8	8.9
Cycle Q Clear(g_c), s	5.5	14.2	14.4	22.4	14.1	14.2	4.1	18.3	11.3	3.9	20.8	8.9
Prop In Lane	1.00		0.41	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	141	335	328	484	677	684	106	1011	451	99	997	445
V/C Ratio(X)	0.78	0.85	0.86	0.94	0.53	0.53	0.78	0.78	0.52	0.78	0.84	0.38
Avail Cap(c_a), veh/h	239	355	349	485	677	684	109	1011	451	99	997	445
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.28	0.28	0.28
Uniform Delay (d), s/veh	43.0	40.9	41.0	32.0	21.6	21.6	41.7	29.6	27.1	43.6	38.8	33.4
Incr Delay (d2), s/veh	8.9	16.2	17.8	26.2	0.8	0.8	29.3	5.9	4.3	10.5	2.5	0.7
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	2.9	8.2	8.3	12.9	5.8	5.9	2.7	8.4	4.7	2.0	10.2	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	52.0	57.1	58.8	58.3	22.4	22.4	71.1	35.5	31.4	54.2	41.4	34.1
LnGrp LOS	D	E	E	E	C	C	E	D	C	D	D	C
Approach Vol, veh/h	674				1177				1105		1080	
Approach Delay, s/veh	57.0				36.3				37.3		41.2	
Approach LOS	E				D				D		D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.5	30.1	28.9	21.5	9.9	29.7	11.6	38.8				
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	5.0	24.5	24.5	18.0	5.5	24.0	12.1	30.4				
Max Q Clear Time (g_c+I1), s	5.9	20.3	24.4	16.4	6.1	22.8	7.5	16.2				
Green Ext Time (p_c), s	0.0	2.3	0.0	0.6	0.0	0.7	0.1	3.9				
Intersection Summary												
HCM 7th Control Delay, s/veh			41.3									
HCM 7th LOS			D									

Timings

5: Brockton Avenue & Tequesquite Avenue

02/10/2025



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	194	21	49	7	112	771	118	520
Future Volume (vph)	194	21	49	7	112	771	118	520
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	9.5	22.5
Total Split (s)	9.8	22.8	9.6	22.6	10.5	48.0	9.6	47.1
Total Split (%)	10.9%	25.3%	10.7%	25.1%	11.7%	53.3%	10.7%	52.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	10.6	7.4	10.2	7.3	62.4	55.2	65.0	58.1
Actuated g/C Ratio	0.12	0.08	0.11	0.08	0.69	0.61	0.72	0.65
v/c Ratio	1.18	0.47	0.27	0.22	0.18	0.78	0.36	0.27
Control Delay (s/veh)	161.8	21.3	34.3	20.6	5.0	21.9	8.5	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	161.8	21.3	34.3	20.6	5.0	21.9	8.5	10.1
LOS	F	C	C	C	A	C	A	B
Approach Delay (s/veh)		115.0		28.6		20.0		9.8
Approach LOS		F		C		B		A

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.18

Intersection Signal Delay (s/veh): 30.1

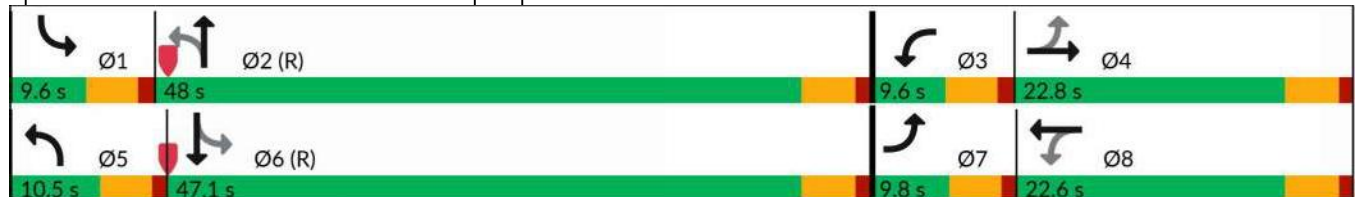
Intersection LOS: C

Intersection Capacity Utilization 82.2%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 5: Brockton Avenue & Tequesquite Avenue



HCM 7th Signalized Intersection Summary

5: Brockton Avenue & Tequesquite Avenue

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	194	21	76	49	7	28	112	771	105	118	520	78
Future Volume (veh/h)	194	21	76	49	7	28	112	771	105	118	520	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	194	21	76	49	7	28	112	771	105	118	520	78
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	244	30	107	183	21	83	685	1007	137	351	1939	290
Arrive On Green	0.06	0.08	0.08	0.04	0.06	0.06	0.05	0.62	0.62	0.11	1.00	1.00
Sat Flow, veh/h	1781	355	1284	1781	327	1308	1781	1611	219	1781	3100	463
Grp Volume(v), veh/h	194	0	97	49	0	35	112	0	876	118	297	301
Grp Sat Flow(s),veh/h/ln	1781	0	1639	1781	0	1635	1781	0	1831	1781	1777	1787
Q Serve(g_s), s	5.3	0.0	5.2	2.3	0.0	1.8	2.0	0.0	31.0	2.1	0.0	0.0
Cycle Q Clear(g_c), s	5.3	0.0	5.2	2.3	0.0	1.8	2.0	0.0	31.0	2.1	0.0	0.0
Prop In Lane	1.00		0.78	1.00		0.80	1.00		0.12	1.00		0.26
Lane Grp Cap(c), veh/h	244	0	137	183	0	104	685	0	1144	351	1111	1117
V/C Ratio(X)	0.79	0.00	0.71	0.27	0.00	0.34	0.16	0.00	0.77	0.34	0.27	0.27
Avail Cap(c_a), veh/h	244	0	333	214	0	329	711	0	1144	359	1111	1117
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.67	0.00	0.67	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.9	0.0	40.2	37.3	0.0	40.3	5.0	0.0	12.1	10.9	0.0	0.0
Incr Delay (d2), s/veh	16.4	0.0	6.6	0.8	0.0	1.9	0.1	0.0	3.3	0.6	0.6	0.6
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	2.8	0.0	2.3	1.0	0.0	0.8	0.6	0.0	12.0	0.8	0.2	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	56.3	0.0	46.8	38.1	0.0	42.2	5.1	0.0	15.5	11.4	0.6	0.6
LnGrp LOS	E		D	D		D	A		B	B	A	A
Approach Vol, veh/h	291				84				988		716	
Approach Delay, s/veh	53.1				39.8				14.3		2.4	
Approach LOS	D				D				B		A	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.2	60.7	8.0	12.0	9.2	60.8	9.8	10.2				
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	43.5	5.1	18.3	6.0	42.6	5.3	18.1				
Max Q Clear Time (g_c+I1), s	4.1	33.0	4.3	7.2	4.0	2.0	7.3	3.8				
Green Ext Time (p_c), s	0.0	4.8	0.0	0.3	0.0	4.2	0.0	0.1				
Intersection Summary												
HCM 7th Control Delay, s/veh	16.7											
HCM 7th LOS	B											

Timings

6: Market Street & 15th Street

02/10/2025



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	←	→	←	→	←	→	←	→
Traffic Volume (vph)	51	7	101	24	78	115	97	1084
Future Volume (vph)	51	7	101	24	78	115	97	1084
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	9.6	24.9	12.6	27.9
Total Split (%)	37.5%	37.5%	37.5%	37.5%	16.0%	41.5%	21.0%	46.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	9.8	9.8	9.8	9.8	7.8	33.0	8.6	33.9
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.13	0.55	0.14	0.57
v/c Ratio	0.24	0.17	0.46	0.27	0.34	0.12	0.38	0.61
Control Delay (s/veh)	23.2	9.7	28.6	11.0	27.6	6.5	26.9	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	23.2	9.7	28.6	11.0	27.6	6.5	26.9	14.9
LOS	C	A	C	B	C	A	C	B
Approach Delay (s/veh)		16.5		20.4		12.1		15.8
Approach LOS		B		C		B		B

Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay (s/veh): 15.7

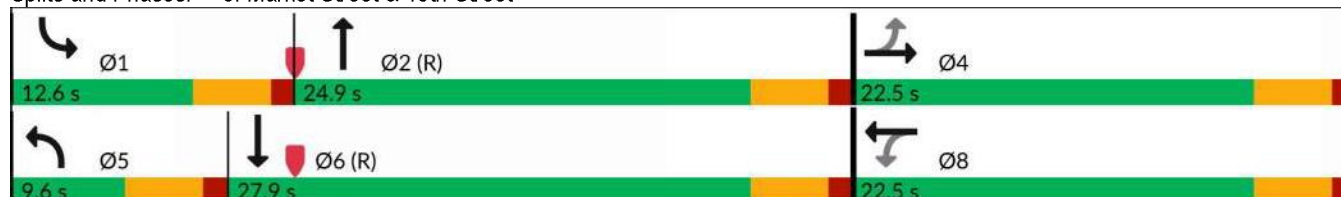
Intersection LOS: B

Intersection Capacity Utilization 61.8%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 6: Market Street & 15th Street



HCM 7th Signalized Intersection Summary

6: Market Street & 15th Street

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	7	43	101	24	64	78	115	102	97	1084	125
Future Volume (veh/h)	51	7	43	101	24	64	78	115	102	97	1084	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	51	7	43	101	24	64	78	115	102	97	1084	125
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	239	32	194	272	63	168	108	1052	855	125	1845	213
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.06	0.57	0.57	0.07	0.57	0.57
Sat Flow, veh/h	1309	227	1393	1355	451	1203	1781	1862	1513	1781	3211	370
Grp Volume(v), veh/h	51	0	50	101	0	88	78	109	108	97	599	610
Grp Sat Flow(s),veh/h/ln	1309	0	1620	1355	0	1654	1781	1777	1598	1781	1777	1804
Q Serve(g_s), s	2.2	0.0	1.6	4.3	0.0	2.9	2.6	1.7	1.9	3.2	13.0	13.0
Cycle Q Clear(g_c), s	5.1	0.0	1.6	5.9	0.0	2.9	2.6	1.7	1.9	3.2	13.0	13.0
Prop In Lane	1.00		0.86	1.00		0.73	1.00		0.95	1.00		0.21
Lane Grp Cap(c), veh/h	239	0	226	272	0	231	108	1004	903	125	1021	1037
V/C Ratio(X)	0.21	0.00	0.22	0.37	0.00	0.38	0.72	0.11	0.12	0.77	0.59	0.59
Avail Cap(c_a), veh/h	449	0	486	489	0	496	151	1004	903	240	1021	1037
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	0.77	0.77	0.77	0.42	0.42	0.42
Uniform Delay (d), s/veh	25.8	0.0	22.9	25.6	0.0	23.5	27.7	6.0	6.1	27.4	8.2	8.2
Incr Delay (d2), s/veh	0.4	0.0	0.5	0.8	0.0	1.0	7.6	0.2	0.2	4.3	1.0	1.0
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	0.7	0.0	0.6	1.4	0.0	1.1	1.3	0.6	0.6	1.4	4.1	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	26.2	0.0	23.4	26.4	0.0	24.5	35.2	6.2	6.3	31.7	9.2	9.2
LnGrp LOS	C		C	C		C	D	A	A	C	A	A
Approach Vol, veh/h	101			189			295			1306		
Approach Delay, s/veh	24.8			25.5			13.9			10.9		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	38.4		12.9	8.1	39.0		12.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	8.1	20.4		18.0	5.1	23.4		18.0				
Max Q Clear Time (g_c+I1), s	5.2	3.9		7.1	4.6	15.0		7.9				
Green Ext Time (p_c), s	0.0	1.1		0.2	0.0	4.9		0.5				
Intersection Summary												
HCM 7th Control Delay, s/veh	13.6											
HCM 7th LOS	B											

Timings

7: Brockton Avenue & Terracina Drive

02/10/2025

				
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	66	834	66	584
Future Volume (vph)	66	834	66	584
Turn Type	Prot	NA	Perm	NA
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	22.5	42.5	42.5	42.5
Total Split (%)	34.6%	65.4%	65.4%	65.4%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max
Act Effct Green (s)	8.5	50.4	50.4	50.4
Actuated g/C Ratio	0.13	0.78	0.78	0.78
v/c Ratio	0.53	0.68	0.21	0.40
Control Delay (s/veh)	18.6	8.9	5.7	4.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	18.6	8.9	5.7	4.7
LOS	B	A	A	A
Approach Delay (s/veh)	18.6	8.9		4.8
Approach LOS	B	A		A
Intersection Summary				
Cycle Length: 65				
Actuated Cycle Length: 65				
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green				
Natural Cycle: 65				
Control Type: Actuated-Coordinated				
Maximum v/c Ratio: 0.68				
Intersection Signal Delay (s/veh): 8.2			Intersection LOS: A	
Intersection Capacity Utilization 71.6%			ICU Level of Service C	
Analysis Period (min) 15				

Splits and Phases: 7: Brockton Avenue & Terracina Drive



HCM 7th Signalized Intersection Summary

7: Brockton Avenue & Terracina Drive

02/10/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	66	91	834	135	66	584
Future Volume (veh/h)	66	91	834	135	66	584
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	66	91	834	135	66	584
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	84	115	1164	188	371	1386
Arrive On Green	0.12	0.12	0.74	0.74	0.74	0.74
Sat Flow, veh/h	695	958	1570	254	580	1870
Grp Volume(v), veh/h	158	0	0	969	66	584
Grp Sat Flow(s),veh/h/ln	1663	0	0	1825	580	1870
Q Serve(g_s), s	6.0	0.0	0.0	19.1	4.6	7.6
Cycle Q Clear(g_c), s	6.0	0.0	0.0	19.1	23.7	7.6
Prop In Lane	0.42	0.58		0.14	1.00	
Lane Grp Cap(c), veh/h	200	0	0	1352	371	1386
V/C Ratio(X)	0.79	0.00	0.00	0.72	0.18	0.42
Avail Cap(c_a), veh/h	461	0	0	1352	371	1386
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.00	0.00	1.00	0.97	0.97
Uniform Delay (d), s/veh	27.8	0.0	0.0	4.6	11.2	3.2
Incr Delay (d2), s/veh	6.5	0.0	0.0	3.3	1.0	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	0.0	4.9	0.6	1.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	34.3	0.0	0.0	7.9	12.2	4.1
LnGrp LOS	C			A	B	A
Approach Vol, veh/h	158		969			650
Approach Delay, s/veh	34.3		7.9			4.9
Approach LOS	C		A			A
Timer - Assigned Phs	2		6		8	
Phs Duration (G+Y+Rc), s	52.7		52.7		12.3	
Change Period (Y+Rc), s	4.5		4.5		4.5	
Max Green Setting (Gmax), s	38.0		38.0		18.0	
Max Q Clear Time (g_c+I1), s	21.1		25.7		8.0	
Green Ext Time (p_c), s	7.4		3.7		0.3	
Intersection Summary						
HCM 7th Control Delay, s/veh			9.2			
HCM 7th LOS			A			

Timings

8: Market Street & Terracina Drive

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	128	21	21	21	27	72	961	98	203	926
Future Volume (vph)	128	21	21	21	27	72	961	98	203	926
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5
Total Split (s)	11.0	24.0	9.5	22.5	22.5	10.6	30.5	30.5	16.0	35.9
Total Split (%)	13.8%	30.0%	11.9%	28.1%	28.1%	13.3%	38.1%	38.1%	20.0%	44.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max
Act Effect Green (s)	6.5	10.1	5.0	7.0	7.0	8.7	37.6	37.6	15.0	45.9
Actuated g/C Ratio	0.08	0.13	0.06	0.09	0.09	0.11	0.47	0.47	0.19	0.57
v/c Ratio	0.90	0.45	0.19	0.13	0.08	0.38	0.58	0.12	0.61	0.51
Control Delay (s/veh)	91.7	14.1	39.9	34.5	0.5	38.0	19.9	0.3	37.5	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	91.7	14.1	39.9	34.5	0.5	38.0	19.9	0.3	37.5	13.9
LOS	F	B	D	C	A	D	B	A	D	B
Approach Delay (s/veh)		51.7		22.8			19.3			17.8
Approach LOS		D		C			B			B

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay (s/veh): 21.9

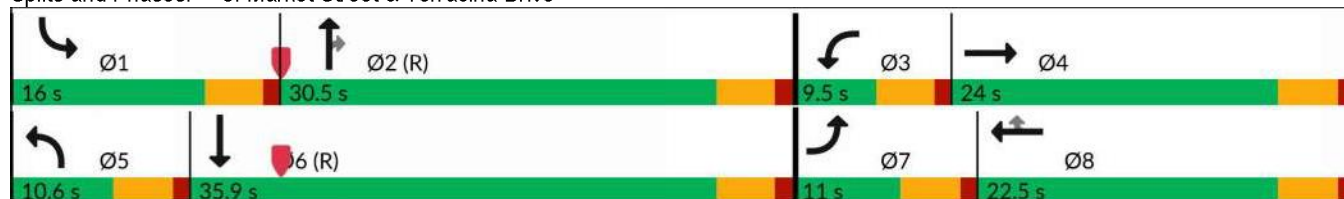
Intersection LOS: C

Intersection Capacity Utilization 65.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 8: Market Street & Terracina Drive



HCM 7th Signalized Intersection Summary

8: Market Street & Terracina Drive

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	21	115	21	21	27	72	961	98	203	926	104
Future Volume (veh/h)	128	21	115	21	21	27	72	961	98	203	926	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	128	21	115	21	21	27	72	961	98	203	926	104
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	145	30	164	42	116	98	92	1765	787	241	1868	210
Arrive On Green	0.08	0.12	0.12	0.02	0.06	0.06	0.05	0.50	0.50	0.14	0.58	0.58
Sat Flow, veh/h	1781	251	1373	1781	1870	1585	1781	3554	1585	1781	3220	362
Grp Volume(v), veh/h	128	0	136	21	21	27	72	961	98	203	511	519
Grp Sat Flow(s),veh/h/ln	1781	0	1623	1781	1870	1585	1781	1777	1585	1781	1777	1805
Q Serve(g_s), s	5.7	0.0	6.4	0.9	0.9	1.3	3.2	14.9	2.7	8.9	13.6	13.6
Cycle Q Clear(g_c), s	5.7	0.0	6.4	0.9	0.9	1.3	3.2	14.9	2.7	8.9	13.6	13.6
Prop In Lane	1.00		0.85	1.00		1.00	1.00		1.00	1.00		0.20
Lane Grp Cap(c), veh/h	145	0	194	42	116	98	92	1765	787	241	1031	1047
V/C Ratio(X)	0.88	0.00	0.70	0.51	0.18	0.28	0.78	0.54	0.12	0.84	0.50	0.50
Avail Cap(c_a), veh/h	145	0	396	111	421	357	136	1765	787	256	1031	1047
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)	0.99	0.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	0.77	0.77	0.77
Uniform Delay (d), s/veh	36.4	0.0	33.8	38.6	35.6	35.8	37.5	13.9	10.8	33.8	9.9	9.9
Incr Delay (d2), s/veh	42.5	0.0	4.5	9.2	0.7	1.5	15.6	1.2	0.3	16.9	1.3	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	4.1	0.0	2.7	0.5	0.4	0.5	1.8	5.8	0.9	4.9	5.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	78.8	0.0	38.3	47.8	36.3	37.3	53.0	15.1	11.1	50.6	11.2	11.2
LnGrp LOS	E		D	D	D	D	D	B	B	D	B	B
Approach Vol, veh/h	264					69		1131		1233		
Approach Delay, s/veh	57.9					40.2		17.2		17.7		
Approach LOS	E					D		B		B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.3	44.2	6.4	14.1	8.7	50.9	11.0	9.4				
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	11.5	26.0	5.0	19.5	6.1	31.4	6.5	18.0				
Max Q Clear Time (g_c+1), s	10.9	16.9	2.9	8.4	5.2	15.6	7.7	3.3				
Green Ext Time (p_c), s	0.0	4.6	0.0	0.5	0.0	6.2	0.0	0.1				
Intersection Summary												
HCM 7th Control Delay, s/veh			22.0									
HCM 7th LOS			C									

HCM 7th TWSC
101: Brockton Avenue & EX South RCH Driveway

02/10/2025

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						 
Traffic Vol, veh/h	0	45	847	90	0	842
Future Vol, veh/h	0	45	847	90	0	842
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	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	45	847	90	0	842
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	469	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	*840	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		0	-	-	-	-
Mov Cap-1 Maneuver	-	*840	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s/v	9.53		0		0	
HCM LOS	A					
Minor Lane/Major Mvmt	NBT		NBRWBLn1		SBT	
Capacity (veh/h)	-		840		-	
HCM Lane V/C Ratio	-		0.054		-	
HCM Control Delay (s/veh)	-		9.5		-	
HCM Lane LOS	-		A		-	
HCM 95th %tile Q(veh)	-		0.2		-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

HCM 7th TWSC
102: Brockton Avenue & New North RCH Driveway

02/10/2025

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	11	914	19	29	910
Future Vol, veh/h	7	11	914	19	29	910
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	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	11	914	19	29	910
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1437	467	0	0	933	0
Stage 1	924	-	-	-	-	-
Stage 2	513	-	-	-	-	-
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	*208	*840	-	-	948	-
Stage 1	*549	-	-	-	-	-
Stage 2	*793	-	-	-	-	-
Platoon blocked, %	0	0	-	-	0	-
Mov Cap-1 Maneuver	*200	*840	-	-	948	-
Mov Cap-2 Maneuver	*200	-	-	-	-	-
Stage 1	*549	-	-	-	-	-
Stage 2	*760	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s/v15.12		0		0.61		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	374	111	-	
HCM Lane V/C Ratio	-	-	0.048	0.031	-	
HCM Control Delay (s/veh)	-	-	15.1	8.9	0.3	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

HCM 7th TWSC
103: Brockton Avenue & New Garage Egress

02/10/2025

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Vol, veh/h	4	4	925	0	0	935
Future Vol, veh/h	4	4	925	0	0	935
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	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	4	925	0	0	935
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1393	463	0	-	-	-
Stage 1	925	-	-	-	-	-
Stage 2	468	-	-	-	-	-
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	*452	*817	-	0	0	-
Stage 1	*582	-	-	0	0	-
Stage 2	*772	-	-	0	0	-
Platoon blocked, %	0	0	-			-
Mov Cap-1 Maneuver	*452	*817	-	-	-	-
Mov Cap-2 Maneuver	*452	-	-	-	-	-
Stage 1	*582	-	-	-	-	-
Stage 2	*772	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s/v11.28		0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	- 582		-			
HCM Lane V/C Ratio	- 0.014		-			
HCM Control Delay (s/veh)	- 11.3		-			
HCM Lane LOS	- B		-			
HCM 95th %tile Q(veh)	- 0		-			
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

HCM 7th TWSC
104: RCH Driveway & 14th Street

02/10/2025

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑		↑
Traffic Vol, veh/h	999	75	40	819	0	17
Future Vol, veh/h	999	75	40	819	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	120	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	999	75	40	819	0	17
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	1074	0	-	537
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.14	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.22	-	-	3.32
Pot Cap-1 Maneuver	-	-	827	-	0	*826
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-	0	-	-	0
Mov Cap-1 Maneuver	-	-	827	-	-	*826
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0.45		9.45		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	826	-	-	827	-	
HCM Lane V/C Ratio	0.021	-	-	0.048	-	
HCM Control Delay (s/veh)	9.4	-	-	9.6	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.1	-	-	0.2	-	
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

Timings

1: Brockton Avenue & University Avenue

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	10	403	115	374	257	739	55	91	584	26
Future Volume (vph)	10	403	115	374	257	739	55	91	584	26
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4	3	8	5	2	3	1	6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	7	4	3	8	5	2	3	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	9.5	9.5	22.5	22.5
Total Split (s)	9.5	23.0	9.5	23.0	13.0	43.0	9.5	9.5	39.5	39.5
Total Split (%)	11.2%	27.1%	11.2%	27.1%	15.3%	50.6%	11.2%	11.2%	46.5%	46.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	None	C-Max	C-Max
Act Effct Green (s)	21.9	17.9	24.6	23.6	49.7	42.9	52.4	42.7	37.6	37.6
Actuated g/C Ratio	0.26	0.21	0.29	0.28	0.58	0.50	0.62	0.50	0.44	0.44
v/c Ratio	0.04	0.89	0.65	0.44	0.80	0.79	0.05	0.45	0.71	0.03
Control Delay (s/veh)	19.7	35.2	41.2	25.9	31.6	27.4	1.4	16.6	26.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	19.7	35.2	41.2	25.9	31.6	27.4	1.4	16.6	26.4	0.1
LOS	B	D	D	C	C	C	A	B	C	A
Approach Delay (s/veh)		35.0		29.1		27.0			24.1	
Approach LOS		D		C		C			C	

Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay (s/veh): 28.8

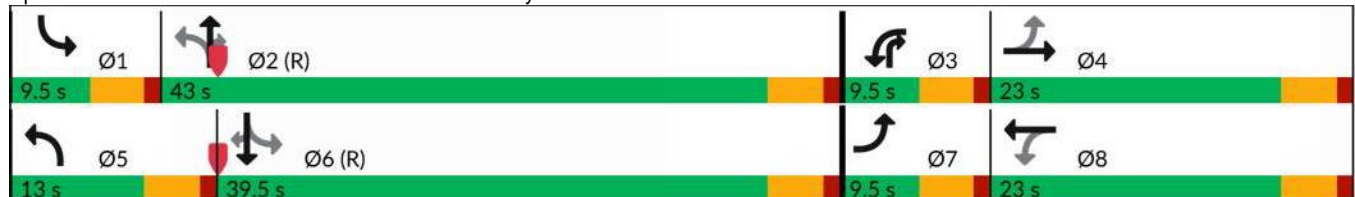
Intersection LOS: C

Intersection Capacity Utilization 90.6%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Brockton Avenue & University Avenue



HCM 7th Signalized Intersection Summary

1: Brockton Avenue & University Avenue

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	403	408	115	374	54	257	739	55	91	584	26
Future Volume (veh/h)	10	403	408	115	374	54	257	739	55	91	584	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	10	403	408	115	374	54	257	739	55	91	584	26
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	263	387	345	189	824	118	380	860	822	250	770	653
Arrive On Green	0.01	0.22	0.22	0.06	0.26	0.26	0.10	0.46	0.46	0.05	0.41	0.41
Sat Flow, veh/h	1781	1777	1585	1781	3120	447	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	10	403	408	115	212	216	257	739	55	91	584	26
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1790	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.4	18.5	18.5	4.1	8.5	8.6	6.7	30.0	1.5	2.5	22.7	0.8
Cycle Q Clear(g_c), s	0.4	18.5	18.5	4.1	8.5	8.6	6.7	30.0	1.5	2.5	22.7	0.8
Prop In Lane	1.00		1.00	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	263	387	345	189	469	473	380	860	822	250	770	653
V/C Ratio(X)	0.04	1.04	1.18	0.61	0.45	0.46	0.68	0.86	0.07	0.36	0.76	0.04
Avail Cap(c_a), veh/h	346	387	345	189	469	473	380	860	822	263	770	653
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	0.73	0.73	0.73	0.31	0.31	0.31	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.5	33.3	33.3	25.0	26.1	26.2	16.0	20.5	10.2	17.4	21.4	15.0
Incr Delay (d2), s/veh	0.1	57.1	107.9	4.0	0.5	0.5	1.5	3.7	0.0	0.9	6.9	0.1
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	0.2	13.8	17.2	1.9	3.5	3.6	2.6	13.0	0.5	1.0	10.8	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.5	90.4	141.2	29.0	26.6	26.7	17.5	24.2	10.3	18.3	28.3	15.1
LnGrp LOS	C	F	F	C	C	C	B	C	B	B	C	B
Approach Vol, veh/h	821			543			1051			701		
Approach Delay, s/veh	114.8			27.2			21.9			26.5		
Approach LOS	F			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.9	43.6	9.5	23.0	13.0	39.5	5.6	26.9				
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	5.0	38.5	5.0	18.5	8.5	35.0	5.0	18.5				
Max Q Clear Time (g_c+1), s	4.5	32.0	6.1	20.5	8.7	24.7	2.4	10.6				
Green Ext Time (p_c), s	0.0	2.8	0.0	0.0	0.0	2.9	0.0	1.5				
Intersection Summary												
HCM 7th Control Delay, s/veh	48.3											
HCM 7th LOS	D											
Notes												
User approved changes to right turn type.												

Timings

2: Market Street & University Avenue

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	139	499	114	312	217	1479	220	136	1450	105
Future Volume (vph)	139	499	114	312	217	1479	220	136	1450	105
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	13.0	24.0	11.6	22.6	17.1	51.2	51.2	13.2	47.3	47.3
Total Split (%)	13.0%	24.0%	11.6%	22.6%	17.1%	51.2%	51.2%	13.2%	47.3%	47.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effect Green (s)	8.5	19.5	7.1	18.1	12.6	46.7	46.7	8.7	42.8	42.8
Actuated g/C Ratio	0.09	0.20	0.07	0.18	0.13	0.47	0.47	0.09	0.43	0.43
v/c Ratio	0.93	1.01	0.91	0.58	0.97	0.90	0.26	0.89	0.96	0.14
Control Delay (s/veh)	103.6	73.5	107.9	39.6	99.0	33.0	3.4	95.1	43.6	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	103.6	73.5	107.9	39.6	99.0	33.0	3.4	95.1	43.6	3.4
LOS	F	E	F	D	F	C	A	F	D	A
Approach Delay (s/veh)		78.4		55.7		37.1			45.2	
Approach LOS		E		E		D			D	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.01

Intersection Signal Delay (s/veh): 48.8

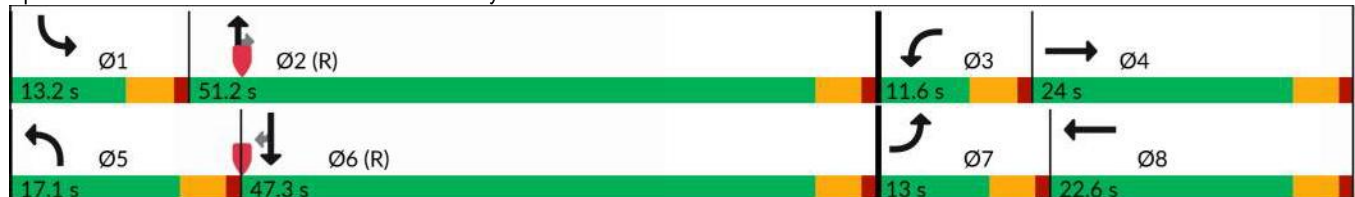
Intersection LOS: D

Intersection Capacity Utilization 94.0%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 2: Market Street & University Avenue



HCM 7th Signalized Intersection Summary

2: Market Street & University Avenue

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	499	211	114	312	57	217	1479	220	136	1450	105
Future Volume (veh/h)	139	499	211	114	312	57	217	1479	220	136	1450	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	139	499	211	114	312	57	217	1479	220	136	1450	105
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	151	475	200	126	544	98	224	1660	740	155	1521	678
Arrive On Green	0.09	0.19	0.19	0.07	0.18	0.18	0.13	0.47	0.47	0.09	0.43	0.43
Sat Flow, veh/h	1781	2437	1025	1781	3007	543	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	139	363	347	114	183	186	217	1479	220	136	1450	105
Grp Sat Flow(s),veh/h/ln	1781	1777	1686	1781	1777	1773	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	7.7	19.5	19.5	6.4	9.4	9.6	12.1	38.0	8.6	7.5	39.4	4.1
Cycle Q Clear(g_c), s	7.7	19.5	19.5	6.4	9.4	9.6	12.1	38.0	8.6	7.5	39.4	4.1
Prop In Lane	1.00		0.61	1.00		0.31	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	151	346	329	126	322	321	224	1660	740	155	1521	678
V/C Ratio(X)	0.92	1.05	1.06	0.90	0.57	0.58	0.97	0.89	0.30	0.88	0.95	0.15
Avail Cap(c_a), veh/h	151	346	329	126	322	321	224	1660	740	155	1521	678
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)	0.49	0.49	0.49	1.00	1.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.4	40.2	40.3	46.1	37.4	37.5	43.5	24.3	16.5	45.1	27.6	17.5
Incr Delay (d2), s/veh	30.9	47.0	50.3	51.1	2.4	2.6	11.3	0.8	0.1	39.3	14.4	0.5
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	12.9	12.5	4.6	4.3	4.4	6.0	15.3	3.1	5.0	18.9	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	76.3	87.3	90.5	97.2	39.7	40.1	54.8	25.1	16.6	84.4	42.0	18.0
LnGrp LOS	E	F	F	F	D	D	D	C	B	F	D	B
Approach Vol, veh/h	849			483			1916			1691		
Approach Delay, s/veh	86.8			53.4			27.5			43.9		
Approach LOS	F			D			C			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.2	51.2	11.6	24.0	17.1	47.3	13.0	22.6				
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	8.7	46.7	7.1	19.5	12.6	42.8	8.5	18.1				
Max Q Clear Time (g_c+I1), s	9.5	40.0	8.4	21.5	14.1	41.4	9.7	11.6				
Green Ext Time (p_c), s	0.0	5.2	0.0	0.0	0.0	1.2	0.0	1.1				
Intersection Summary												
HCM 7th Control Delay, s/veh	45.9											
HCM 7th LOS	D											

Timings

3: Brockton Avenue & 14th Street

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	59	192	436	48	17	661	395	177	794	6
Future Volume (vph)	59	192	436	48	17	661	395	177	794	6
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	3	1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	9.5	9.5	22.5	22.5
Total Split (s)	11.8	22.5	16.0	26.7	9.5	38.0	16.0	13.5	42.0	42.0
Total Split (%)	13.1%	25.0%	17.8%	29.7%	10.6%	42.2%	17.8%	15.0%	46.7%	46.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	None	C-Max	C-Max
Act Effect Green (s)	6.9	15.5	11.5	22.1	5.5	33.9	49.9	11.1	45.7	45.7
Actuated g/C Ratio	0.08	0.17	0.13	0.25	0.06	0.38	0.55	0.12	0.51	0.51
v/c Ratio	0.44	0.76	1.00	0.48	0.16	0.94	0.40	0.81	0.84	0.01
Control Delay (s/veh)	49.9	48.7	82.9	9.8	43.9	51.3	4.9	69.5	31.7	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	49.9	48.7	82.9	9.8	43.9	51.3	4.9	69.5	31.7	0.0
LOS	D	D	F	A	D	D	A	E	C	A
Approach Delay (s/veh)		49.0		54.5		34.1			38.4	
Approach LOS		D		D		C			D	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay (s/veh): 41.7

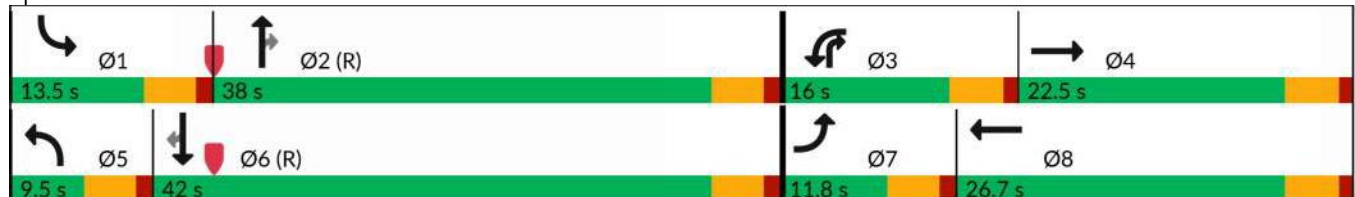
Intersection LOS: D

Intersection Capacity Utilization 86.7%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3: Brockton Avenue & 14th Street



HCM 7th Signalized Intersection Summary

3: Brockton Avenue & 14th Street

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	192	52	436	48	229	17	661	395	177	794	6
Future Volume (veh/h)	59	192	52	436	48	229	17	661	395	177	794	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	59	192	52	436	48	229	17	661	395	177	794	6
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	76	226	61	442	69	329	34	772	857	178	923	782
Arrive On Green	0.04	0.16	0.16	0.13	0.24	0.24	0.02	0.41	0.41	0.10	0.49	0.49
Sat Flow, veh/h	1781	1417	384	3456	282	1346	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	59	0	244	436	0	277	17	661	395	177	794	6
Grp Sat Flow(s),veh/h/ln	1781	0	1801	1728	0	1628	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	3.0	0.0	11.9	11.3	0.0	13.9	0.9	28.9	13.7	8.9	33.6	0.2
Cycle Q Clear(g_c), s	3.0	0.0	11.9	11.3	0.0	13.9	0.9	28.9	13.7	8.9	33.6	0.2
Prop In Lane	1.00		0.21	1.00		0.83	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	76	0	287	442	0	398	34	772	857	178	923	782
V/C Ratio(X)	0.77	0.00	0.85	0.99	0.00	0.70	0.50	0.86	0.46	0.99	0.86	0.01
Avail Cap(c_a), veh/h	144	0	360	442	0	402	99	772	857	178	923	782
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	1.00	1.00	0.65	0.65	0.65
Uniform Delay (d), s/veh	42.6	0.0	36.8	39.2	0.0	31.0	43.7	24.0	12.6	40.5	20.1	11.6
Incr Delay (d2), s/veh	15.1	0.0	14.5	39.4	0.0	5.1	10.7	11.7	1.8	52.5	7.0	0.0
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	1.6	0.0	6.3	7.1	0.0	5.9	0.5	14.6	4.9	6.4	15.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	57.8	0.0	51.2	78.6	0.0	36.1	54.4	35.7	14.4	93.0	27.1	11.6
LnGrp LOS	E		D	E		D	D	D	B	F	C	B
Approach Vol, veh/h	303		713				1073			977		
Approach Delay, s/veh	52.5		62.1				28.2			38.9		
Approach LOS	D		E				C			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.5	41.7	16.0	18.8	6.2	48.9	8.4	26.5				
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	9.0	33.5	11.5	18.0	5.0	37.5	7.3	22.2				
Max Q Clear Time (g_c+1), s	10.9	30.9	13.3	13.9	2.9	35.6	5.0	15.9				
Green Ext Time (p_c), s	0.0	1.5	0.0	0.5	0.0	1.0	0.0	0.9				
Intersection Summary												
HCM 7th Control Delay, s/veh	41.9											
HCM 7th LOS	D											
Notes												
User approved changes to right turn type.												

Timings

4: Market Street & 14th Street

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	207	646	434	614	95	1194	352	211	1439	178
Future Volume (vph)	207	646	434	614	95	1194	352	211	1439	178
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	18.9	25.0	28.0	34.1	10.0	41.0	41.0	16.0	47.0	47.0
Total Split (%)	17.2%	22.7%	25.5%	31.0%	9.1%	37.3%	37.3%	14.5%	42.7%	42.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effect Green (s)	14.3	20.5	23.5	29.7	5.5	36.5	36.5	11.5	42.5	42.5
Actuated g/C Ratio	0.13	0.19	0.21	0.27	0.05	0.33	0.33	0.10	0.39	0.39
v/c Ratio	0.90	1.15	1.15	0.85	1.08	1.02	0.48	1.14	1.05	0.25
Control Delay (s/veh)	86.4	125.0	133.0	46.4	169.2	67.6	7.7	154.0	73.1	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	86.4	125.0	133.0	46.4	169.2	67.6	7.7	154.0	73.1	6.5
LOS	F	F	F	D	F	E	A	F	E	A
Approach Delay (s/veh)		116.7		76.7		60.6			75.9	
Approach LOS		F		E		E			E	

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.15

Intersection Signal Delay (s/veh): 78.6

Intersection LOS: E

Intersection Capacity Utilization 105.5%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 4: Market Street & 14th Street



HCM 7th Signalized Intersection Summary

4: Market Street & 14th Street

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	646	112	434	614	195	95	1194	352	211	1439	178
Future Volume (veh/h)	207	646	112	434	614	195	95	1194	352	211	1439	178
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	207	646	112	434	614	195	95	1194	352	211	1439	178
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	233	564	98	381	714	226	89	1179	526	186	1373	612
Arrive On Green	0.13	0.19	0.19	0.21	0.27	0.27	0.05	0.33	0.33	0.10	0.39	0.39
Sat Flow, veh/h	1781	3029	524	1781	2654	842	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	207	379	379	434	411	398	95	1194	352	211	1439	178
Grp Sat Flow(s),veh/h/ln	1781	1777	1776	1781	1777	1719	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	12.6	20.5	20.5	23.5	24.2	24.2	5.5	36.5	21.0	11.5	42.5	8.5
Cycle Q Clear(g_c), s	12.6	20.5	20.5	23.5	24.2	24.2	5.5	36.5	21.0	11.5	42.5	8.5
Prop In Lane	1.00		0.30	1.00		0.49	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	233	331	331	381	478	463	89	1179	526	186	1373	612
V/C Ratio(X)	0.89	1.14	1.15	1.14	0.86	0.86	1.07	1.01	0.67	1.13	1.05	0.29
Avail Cap(c_a), veh/h	233	331	331	381	478	463	89	1179	526	186	1373	612
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	0.14	0.14	0.14	0.20	0.20	0.20
Uniform Delay (d), s/veh	47.0	44.7	44.8	43.2	38.2	38.2	52.2	36.8	31.6	49.2	33.7	23.3
Incr Delay (d2), s/veh	31.1	94.2	95.2	90.1	14.5	15.2	54.8	13.1	1.0	73.3	26.3	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	7.6	17.6	17.7	19.8	12.3	12.0	3.8	17.6	8.1	8.9	22.8	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	78.1	139.0	140.0	133.4	52.8	53.4	107.0	49.8	32.5	122.6	60.1	23.6
LnGrp LOS	E	F	F	F	D	D	F	F	C	F	F	C
Approach Vol, veh/h	965			1243			1641			1828		
Approach Delay, s/veh	126.3			81.1			49.4			63.7		
Approach LOS	F			F			D			E		
Timer - Assigned Phs												
1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	16.0	41.0	28.0	25.0	10.0	47.0	18.9	34.1				
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	11.5	36.5	23.5	20.5	5.5	42.5	14.4	29.6				
Max Q Clear Time (g_c+I1), s	13.5	38.5	25.5	22.5	7.5	44.5	14.6	26.2				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6				
Intersection Summary												
HCM 7th Control Delay, s/veh			74.0									
HCM 7th LOS			E									

Timings

5: Brockton Avenue & Tequesquite Avenue

02/10/2025



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	171	10	144	26	65	932	69	1248
Future Volume (vph)	171	10	144	26	65	932	69	1248
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	9.5	22.5
Total Split (s)	10.0	22.8	9.8	22.6	9.6	57.8	9.6	57.8
Total Split (%)	10.0%	22.8%	9.8%	22.6%	9.6%	57.8%	9.6%	57.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	13.1	8.7	14.8	8.5	68.7	63.2	69.0	63.4
Actuated g/C Ratio	0.13	0.09	0.15	0.09	0.69	0.63	0.69	0.63
v/c Ratio	1.00	0.41	0.69	0.66	0.26	0.83	0.29	0.65
Control Delay (s/veh)	109.0	18.0	55.2	21.2	7.5	24.4	7.9	14.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	109.0	18.0	55.2	21.2	7.5	24.4	7.9	14.4
LOS	F	B	E	C	A	C	A	B
Approach Delay (s/veh)		79.0		35.8		23.3		14.1
Approach LOS		E		D		C		B

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay (s/veh): 24.7

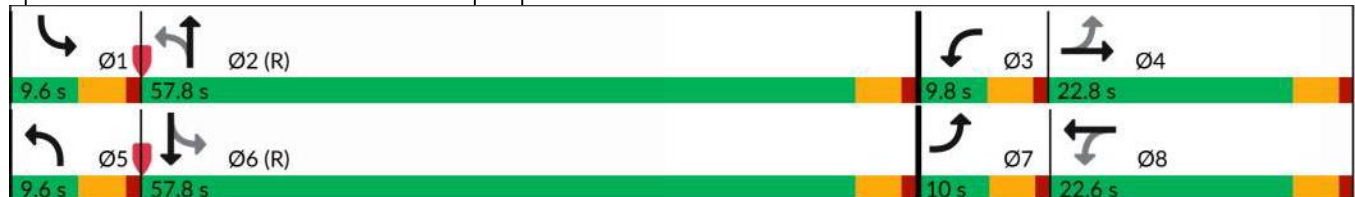
Intersection LOS: C

Intersection Capacity Utilization 89.6%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 5: Brockton Avenue & Tequesquite Avenue



HCM 7th Signalized Intersection Summary

5: Brockton Avenue & Tequesquite Avenue

02/10/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	171	10	74	144	26	165	65	932	42	69	1248	193
Future Volume (veh/h)	171	10	74	144	26	165	65	932	42	69	1248	193
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	171	10	74	144	26	165	65	932	42	69	1248	193
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	199	27	201	290	31	195	257	1036	47	219	1803	277
Arrive On Green	0.05	0.14	0.14	0.05	0.14	0.14	0.04	0.58	0.58	0.04	0.58	0.58
Sat Flow, veh/h	1781	192	1422	1781	220	1398	1781	1776	80	1781	3087	475
Grp Volume(v), veh/h	171	0	84	144	0	191	65	0	974	69	715	726
Grp Sat Flow(s),veh/h/ln	1781	0	1614	1781	0	1619	1781	0	1856	1781	1777	1785
Q Serve(g_s), s	5.5	0.0	4.7	5.3	0.0	11.5	1.4	0.0	46.0	1.5	28.0	28.5
Cycle Q Clear(g_c), s	5.5	0.0	4.7	5.3	0.0	11.5	1.4	0.0	46.0	1.5	28.0	28.5
Prop In Lane	1.00		0.88	1.00		0.86	1.00		0.04	1.00		0.27
Lane Grp Cap(c), veh/h	199	0	228	290	0	225	257	0	1082	219	1038	1042
V/C Ratio(X)	0.86	0.00	0.37	0.50	0.00	0.85	0.25	0.00	0.90	0.32	0.69	0.70
Avail Cap(c_a), veh/h	199	0	295	290	0	293	273	0	1082	234	1038	1042
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	0.75	0.00	0.75	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.2	0.0	38.9	36.7	0.0	42.0	12.2	0.0	18.3	19.3	14.5	14.6
Incr Delay (d2), s/veh	29.7	0.0	1.0	1.3	0.0	16.3	0.4	0.0	9.3	0.8	3.7	3.9
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	3.2	0.0	1.9	0.8	0.0	5.6	0.5	0.0	20.6	0.8	11.5	11.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	69.9	0.0	39.9	38.0	0.0	58.3	12.6	0.0	27.6	20.1	18.2	18.4
LnGrp LOS	E		D	D		E	B		C	C	B	B
Approach Vol, veh/h	255		335			1039			1510			
Approach Delay, s/veh	60.0		49.6			26.6			18.4			
Approach LOS	E		D			C			B			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.8	62.8	9.8	18.6	8.7	62.9	10.0	18.4				
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	53.3	5.3	18.3	5.1	53.3	5.5	18.1				
Max Q Clear Time (g_c+I1), s	3.5	48.0	7.3	6.7	3.4	30.5	7.5	13.5				
Green Ext Time (p_c), s	0.0	3.2	0.0	0.3	0.0	11.5	0.0	0.4				
Intersection Summary												
HCM 7th Control Delay, s/veh			27.8									
HCM 7th LOS			C									

Timings

6: Market Street & 15th Street

02/10/2025



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	←	→	←	→	←	→	←	→
Traffic Volume (vph)	88	54	388	9	50	1161	270	1550
Future Volume (vph)	88	54	388	9	50	1161	270	1550
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5
Total Split (s)	34.0	34.0	34.0	34.0	9.6	45.9	20.1	56.4
Total Split (%)	34.0%	34.0%	34.0%	34.0%	9.6%	45.9%	20.1%	56.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	29.5	29.5	29.5	29.5	5.1	41.4	15.6	53.8
Actuated g/C Ratio	0.30	0.30	0.30	0.30	0.05	0.41	0.16	0.54
v/c Ratio	0.28	0.24	1.10	0.31	0.56	1.02	0.98	0.87
Control Delay (s/veh)	30.2	13.8	111.3	6.4	70.0	58.6	92.6	26.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.2	13.8	111.3	6.4	70.0	58.6	92.6	26.7
LOS	C	B	F	A	E	E	F	C
Approach Delay (s/veh)		20.3		77.7		59.0		36.1
Approach LOS		C		E		E		D

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.10

Intersection Signal Delay (s/veh): 49.1

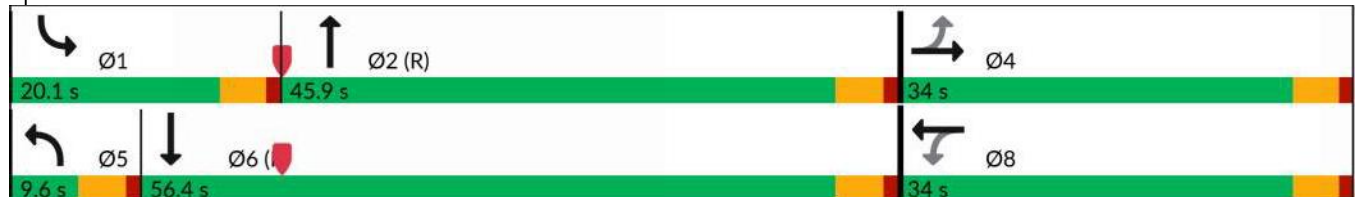
Intersection LOS: D

Intersection Capacity Utilization 101.3%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 6: Market Street & 15th Street



HCM 7th Signalized Intersection Summary

6: Market Street & 15th Street

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	54	80	388	9	174	50	1161	313	270	1550	89
Future Volume (veh/h)	88	54	80	388	9	174	50	1161	313	270	1550	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	88	54	80	388	9	174	50	1161	313	270	1550	89
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	317	201	297	366	23	448	67	1149	306	278	1819	104
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.04	0.41	0.41	0.16	0.53	0.53
Sat Flow, veh/h	1201	681	1008	1256	79	1518	1781	2775	739	1781	3417	195
Grp Volume(v), veh/h	88	0	134	388	0	183	50	738	736	270	803	836
Grp Sat Flow(s),veh/h/ln	1201	0	1689	1256	0	1597	1781	1777	1737	1781	1777	1835
Q Serve(g_s), s	6.3	0.0	6.1	23.4	0.0	9.1	2.8	41.4	41.4	15.1	38.5	39.1
Cycle Q Clear(g_c), s	15.4	0.0	6.1	29.5	0.0	9.1	2.8	41.4	41.4	15.1	38.5	39.1
Prop In Lane	1.00		0.60	1.00		0.95	1.00		0.43	1.00		0.11
Lane Grp Cap(c), veh/h	317	0	498	366	0	471	67	736	719	278	946	977
V/C Ratio(X)	0.28	0.00	0.27	1.06	0.00	0.39	0.75	1.00	1.02	0.97	0.85	0.86
Avail Cap(c_a), veh/h	317	0	498	366	0	471	91	736	719	278	946	977
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	0.84	0.84	0.84	0.09	0.09	0.09
Uniform Delay (d), s/veh	34.2	0.0	27.0	40.6	0.0	28.1	47.7	29.3	29.3	42.0	19.9	20.1
Incr Delay (d2), s/veh	0.5	0.0	0.3	63.7	0.0	0.5	17.2	31.3	36.7	10.5	0.9	1.0
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	1.9	0.0	2.5	15.6	0.0	3.5	1.5	23.2	23.8	7.3	15.0	15.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	34.7	0.0	27.3	104.3	0.0	28.6	64.8	60.6	66.0	52.5	20.9	21.1
LnGrp LOS	C		C	F		C	E	F	F	D	C	C
Approach Vol, veh/h	222			571			1524			1909		
Approach Delay, s/veh	30.2			80.0			63.3			25.4		
Approach LOS	C			F			E			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.1	45.9		34.0	8.3	57.7		34.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	15.6	41.4		29.5	5.1	51.9		29.5				
Max Q Clear Time (g_c+I1), s	17.1	43.4		17.4	4.8	41.1		31.5				
Green Ext Time (p_c), s	0.0	0.0		0.8	0.0	7.8		0.0				
Intersection Summary												
HCM 7th Control Delay, s/veh				46.7								
HCM 7th LOS				D								

Timings

7: Brockton Avenue & Terracina Drive

02/10/2025

				
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	28	939	64	1176
Future Volume (vph)	28	939	64	1176
Turn Type	Prot	NA	Perm	NA
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	22.5	67.5	67.5	67.5
Total Split (%)	25.0%	75.0%	75.0%	75.0%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max
Act Effct Green (s)	7.3	76.6	76.6	76.6
Actuated g/C Ratio	0.08	0.85	0.85	0.85
v/c Ratio	0.37	0.62	0.16	0.74
Control Delay (s/veh)	27.7	5.2	3.1	8.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.7	5.2	3.1	8.0
LOS	C	A	A	A
Approach Delay (s/veh)	27.7	5.2		7.7
Approach LOS	C	A		A
Intersection Summary				
Cycle Length: 90				
Actuated Cycle Length: 90				
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green				
Natural Cycle: 90				
Control Type: Actuated-Coordinated				
Maximum v/c Ratio: 0.74				
Intersection Signal Delay (s/veh): 7.2			Intersection LOS: A	
Intersection Capacity Utilization 73.6%			ICU Level of Service D	
Analysis Period (min) 15				

Splits and Phases: 7: Brockton Avenue & Terracina Drive



HCM 7th Signalized Intersection Summary

7: Brockton Avenue & Terracina Drive

02/10/2025



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	28	33	939	37	64	1176
Future Volume (veh/h)	28	33	939	37	64	1176
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	28	33	939	37	64	1176
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	36	42	1524	60	478	1595
Arrive On Green	0.05	0.05	0.85	0.85	0.85	0.85
Sat Flow, veh/h	755	890	1787	70	576	1870
Grp Volume(v), veh/h	62	0	0	976	64	1176
Grp Sat Flow(s),veh/h/ln	1672	0	0	1858	576	1870
Q Serve(g_s), s	3.3	0.0	0.0	14.7	3.5	22.4
Cycle Q Clear(g_c), s	3.3	0.0	0.0	14.7	18.2	22.4
Prop In Lane	0.45	0.53		0.04	1.00	
Lane Grp Cap(c), veh/h	79	0	0	1584	478	1595
V/C Ratio(X)	0.79	0.00	0.00	0.62	0.13	0.74
Avail Cap(c_a), veh/h	334	0	0	1584	478	1595
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.00	0.00	1.00	0.71	0.71
Uniform Delay (d), s/veh	42.4	0.0	0.0	2.1	4.9	2.6
Incr Delay (d2), s/veh	15.3	0.0	0.0	1.8	0.4	2.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.0	2.4	0.4	3.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	57.7	0.0	0.0	3.9	5.3	4.8
LnGrp LOS	E			A	A	A
Approach Vol, veh/h	62		976			1240
Approach Delay, s/veh	57.7		3.9			4.9
Approach LOS	E		A			A
Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	81.3				81.3	8.7
Change Period (Y+Rc), s	4.5				4.5	4.5
Max Green Setting (Gmax), s	63.0				63.0	18.0
Max Q Clear Time (g_c+I1), s	16.7				24.4	5.3
Green Ext Time (p_c), s	10.8				16.4	0.1
Intersection Summary						
HCM 7th Control Delay, s/veh			5.9			
HCM 7th LOS			A			

Timings

8: Market Street & Terracina Drive

02/10/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	49	51	51	36	143	40	723	153	388	809
Future Volume (vph)	49	51	51	36	143	40	723	153	388	809
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5
Total Split (s)	9.5	22.5	9.5	22.5	22.5	10.6	24.0	24.0	24.0	37.4
Total Split (%)	11.9%	28.1%	11.9%	28.1%	28.1%	13.3%	30.0%	30.0%	30.0%	46.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max
Act Effect Green (s)	5.0	8.1	5.0	8.1	8.1	7.3	29.6	29.6	23.1	49.6
Actuated g/C Ratio	0.06	0.10	0.06	0.10	0.10	0.09	0.37	0.37	0.29	0.62
v/c Ratio	0.45	0.42	0.46	0.19	0.42	0.25	0.55	0.21	0.76	0.43
Control Delay (s/veh)	49.3	27.0	50.4	34.1	5.4	37.0	25.0	2.4	35.9	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	49.3	27.0	50.4	34.1	5.4	37.0	25.0	2.4	35.9	11.3
LOS	D	C	D	C	A	D	C	A	D	B
Approach Delay (s/veh)		34.9		19.9			21.8			18.6
Approach LOS		C		B			C			B

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay (s/veh): 20.7

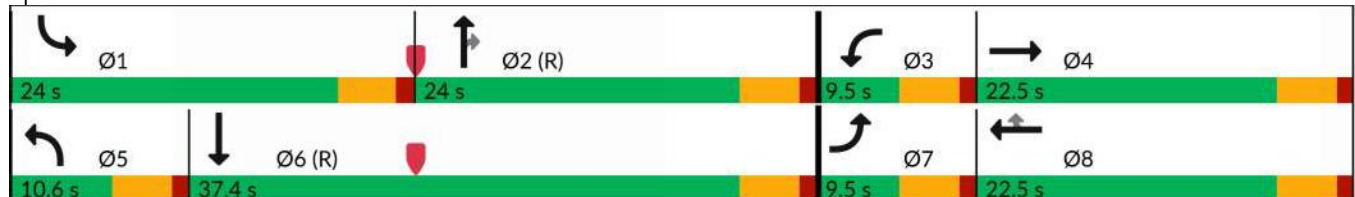
Intersection LOS: C

Intersection Capacity Utilization 62.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 8: Market Street & Terracina Drive



HCM 7th Signalized Intersection Summary

8: Market Street & Terracina Drive

02/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	51	38	51	36	143	40	723	153	388	809	121
Future Volume (veh/h)	49	51	38	51	36	143	40	723	153	388	809	121
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	49	51	38	51	36	143	40	723	153	388	809	121
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	74	116	86	75	219	186	66	1344	599	424	1796	269
Arrive On Green	0.04	0.12	0.12	0.04	0.12	0.12	0.04	0.38	0.38	0.24	0.58	0.58
Sat Flow, veh/h	1781	995	742	1781	1870	1585	1781	3554	1585	1781	3100	464
Grp Volume(v), veh/h	49	0	89	51	36	143	40	723	153	388	464	466
Grp Sat Flow(s),veh/h/ln	1781	0	1737	1781	1870	1585	1781	1777	1585	1781	1777	1787
Q Serve(g_s), s	2.2	0.0	3.8	2.3	1.4	7.0	1.8	12.7	5.3	17.0	11.9	11.9
Cycle Q Clear(g_c), s	2.2	0.0	3.8	2.3	1.4	7.0	1.8	12.7	5.3	17.0	11.9	11.9
Prop In Lane	1.00		0.43	1.00		1.00	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	74	0	202	75	219	186	66	1344	599	424	1030	1035
V/C Ratio(X)	0.66	0.00	0.44	0.68	0.16	0.77	0.61	0.54	0.26	0.91	0.45	0.45
Avail Cap(c_a), veh/h	111	0	391	111	421	357	136	1344	599	434	1030	1035
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)	0.99	0.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	0.29	0.29	0.29
Uniform Delay (d), s/veh	37.8	0.0	32.9	37.8	31.8	34.3	38.0	19.4	17.1	29.7	9.6	9.6
Incr Delay (d2), s/veh	9.7	0.0	1.5	10.0	0.3	6.6	8.8	1.5	1.0	8.9	0.4	0.4
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	1.1	0.0	1.7	1.2	0.6	3.0	0.9	5.2	2.0	8.0	4.2	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	47.5	0.0	34.4	47.8	32.1	40.8	46.8	21.0	18.1	38.6	10.0	10.0
LnGrp LOS	D		C	D	C	D	D	C	B	D	A	A
Approach Vol, veh/h	138			230			916			1318		
Approach Delay, s/veh	39.0			41.0			21.6			18.4		
Approach LOS	D			D			C			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.6	34.8	7.9	13.8	7.4	50.9	7.8	13.9				
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	5.0	18.0	6.1	32.9	5.0	18.0				
Max Q Clear Time (g_c+I1), s	19.0	14.7	4.3	5.8	3.8	13.9	4.2	9.0				
Green Ext Time (p_c), s	0.1	2.3	0.0	0.3	0.0	6.0	0.0	0.4				
Intersection Summary												
HCM 7th Control Delay, s/veh	22.6											
HCM 7th LOS	C											

HCM 7th TWSC
101: Brockton Avenue & EX South RCH Driveway

02/10/2025

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						 
Traffic Vol, veh/h	0	91	1101	24	0	1462
Future Vol, veh/h	0	91	1101	24	0	1462
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	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	91	1101	24	0	1462
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	563	0	0	1125	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	4.14	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	0	*779	-	-	836	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %		0	-	-	0	-
Mov Cap-1 Maneuver	-	*779	-	-	836	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s/v10.23		0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	779	836	-	
HCM Lane V/C Ratio	-	-	0.117	-	-	
HCM Control Delay (s/veh)	-	-	10.2	0	-	
HCM Lane LOS	-	-	B	A	-	
HCM 95th %tile Q(veh)	-	-	0.4	0	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

HCM 7th TWSC
102: Brockton Avenue & New North RCH Driveway

02/10/2025

Intersection						
Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	35	1026	10	16	1278
Future Vol, veh/h	22	35	1026	10	16	1278
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	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	35	1026	10	16	1278
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1702	518	0	0	1036	0
Stage 1	1031	-	-	-	-	-
Stage 2	671	-	-	-	-	-
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	*83	*801	-	-	898	-
Stage 1	*515	-	-	-	-	-
Stage 2	*681	-	-	-	-	-
Platoon blocked, %		0	-	-	0	-
Mov Cap-1 Maneuver	*80	*801	-	-	898	-
Mov Cap-2 Maneuver	*80	-	-	-	-	-
Stage 1	*515	-	-	-	-	-
Stage 2	*662	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s/v34.07		0		0.35		
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	180	45	-	
HCM Lane V/C Ratio	-	-	0.317	0.018	-	
HCM Control Delay (s/veh)	-	-	34.1	9.1	0.2	
HCM Lane LOS	-	-	D	A	A	
HCM 95th %tile Q(veh)	-	-	1.3	0.1	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

HCM 7th TWSC

103: Brockton Avenue & New Garage Egress

02/10/2025

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑↑			↑↑
Traffic Vol, veh/h	11	11	1062	0	0	1282
Future Vol, veh/h	11	11	1062	0	0	1282
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	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	11	1062	0	0	1282
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1703	531	0	-	-	-
Stage 1	1062	-	-	-	-	-
Stage 2	641	-	-	-	-	-
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	*83	*779	-	0	0	-
Stage 1	*519	-	-	0	0	-
Stage 2	*683	-	-	0	0	-
Platoon blocked, %		0	-			-
Mov Cap-1 Maneuver	*83	*779	-	-	-	-
Mov Cap-2 Maneuver	*83	-	-	-	-	-
Stage 1	*519	-	-	-	-	-
Stage 2	*683	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s/v33.22		0		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	-	149	-			
HCM Lane V/C Ratio	-	0.147	-			
HCM Control Delay (s/veh)	-	33.2	-			
HCM Lane LOS	-	D	-			
HCM 95th %tile Q(veh)	-	0.5	-			
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

HCM 7th TWSC
104: RCH Driveway & 14th Street

02/10/2025

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↱		↱	↑↑		↱
Traffic Vol, veh/h	1354	24	25	1370	0	58
Future Vol, veh/h	1354	24	25	1370	0	58
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	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1354	24	25	1370	0	58
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	1378	0	-	689
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.14	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.22	-	-	3.32
Pot Cap-1 Maneuver	-	-	649	-	0	*743
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-	0	-	-	0
Mov Cap-1 Maneuver	-	-	649	-	-	*743
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0.19		10.26		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	743	-	-	649	-	
HCM Lane V/C Ratio	0.078	-	-	0.039	-	
HCM Control Delay (s/veh)	10.3	-	-	10.8	-	
HCM Lane LOS	B	-	-	B	-	
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-	
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

Queuing and Blocking Report

Baseline

02/11/2025

Intersection: 1: Brockton Avenue & University Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	34	202	284	82	96	119	74	253	108	74	438	418
Average Queue (ft)	7	78	148	30	36	52	33	127	14	39	292	200
95th Queue (ft)	28	160	263	66	75	97	75	232	59	90	520	528
Link Distance (ft)		823	823		1114	1114		2322			397	397
Upstream Blk Time (%)											47	36
Queuing Penalty (veh)											0	0
Storage Bay Dist (ft)	95			100			50		100	50		
Storage Blk Time (%)		2		1	0		3	23	0	1	62	
Queuing Penalty (veh)		0		1	0		9	19	0	7	33	

Intersection: 2: Market Street & University Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	R	L	T
Maximum Queue (ft)	84	170	219	207	270	211	75	280	265	98	71	441
Average Queue (ft)	34	85	118	124	91	57	70	170	158	42	27	377
95th Queue (ft)	81	144	193	217	231	160	83	263	244	82	63	480
Link Distance (ft)		1114	1114		869	869		2312	2312	2312		404
Upstream Blk Time (%)												17
Queuing Penalty (veh)												0
Storage Bay Dist (ft)	60			195			50				50	
Storage Blk Time (%)	1	20		10			58	9			7	52
Queuing Penalty (veh)	2	6		12			159	15			52	13

Intersection: 2: Market Street & University Avenue

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	423	422
Average Queue (ft)	335	111
95th Queue (ft)	468	388
Link Distance (ft)	404	404
Upstream Blk Time (%)	14	6
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report

Baseline

02/11/2025

Intersection: 3: Brockton Avenue & 14th Street

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	L	TR	L	T	R	L	T	R
Maximum Queue (ft)	94	216	161	154	145	69	198	98	75	2337	75
Average Queue (ft)	37	92	106	110	101	18	186	37	72	2057	7
95th Queue (ft)	80	174	159	156	157	52	216	72	78	2731	54
Link Distance (ft)		353	132	132	132		180	180		2322	
Upstream Blk Time (%)			8	8	6		31			9	
Queuing Penalty (veh)			23	23	17		142			70	
Storage Bay Dist (ft)	70					50			50		100
Storage Blk Time (%)	2	22				4	53		71	9	0
Queuing Penalty (veh)	3	10				27	10		443	20	0

Intersection: 4: Market Street & 14th Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	R	L	T
Maximum Queue (ft)	115	282	295	160	405	382	174	339	304	146	125	365
Average Queue (ft)	81	156	161	159	364	277	100	223	179	59	77	233
95th Queue (ft)	133	244	250	161	437	422	196	330	279	109	139	335
Link Distance (ft)		924	924		364	364		646	646	646		2312
Upstream Blk Time (%)					51	1						
Queuing Penalty (veh)					0	0						
Storage Bay Dist (ft)	90			135			150				100	
Storage Blk Time (%)	8	33		63	2		2	21			3	28
Queuing Penalty (veh)	18	36		202	11		9	18			13	22

Intersection: 4: Market Street & 14th Street

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	365	226
Average Queue (ft)	237	65
95th Queue (ft)	336	150
Link Distance (ft)	2312	2312
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report

Baseline

02/11/2025

Intersection: 5: Brockton Avenue & Tequesquite Avenue

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	T	TR
Maximum Queue (ft)	125	574	82	65	79	686	97	113	149
Average Queue (ft)	117	301	34	26	41	298	40	31	43
95th Queue (ft)	143	625	71	55	82	634	80	86	113
Link Distance (ft)		559		432		917		272	272
Upstream Blk Time (%)		13							
Queuing Penalty (veh)		0							
Storage Bay Dist (ft)	100		100		55		100		
Storage Blk Time (%)	65	4	0		2	23	0	1	
Queuing Penalty (veh)	63	7	0		14	26	1	1	

Intersection: 6: Market Street & 15th Street

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	78	71	98	105	104	102	133	104	292	316
Average Queue (ft)	33	28	51	39	47	16	40	63	165	188
95th Queue (ft)	67	59	91	80	92	58	95	113	279	299
Link Distance (ft)		222		358		1220	1220		646	646
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	90		95		105			80		
Storage Blk Time (%)	0	0	1	1	1			5	14	
Queuing Penalty (veh)	0	0	1	1	1			25	14	

Intersection: 7: Brockton Avenue & Terracina Drive

Movement	WB	NB	SB	SB
Directions Served	LR	TR	L	T
Maximum Queue (ft)	153	350	54	406
Average Queue (ft)	83	142	33	110
95th Queue (ft)	143	299	63	290
Link Distance (ft)	1280	543		917
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			30	
Storage Blk Time (%)			33	11
Queuing Penalty (veh)			193	7

Queuing and Blocking Report

Baseline

02/11/2025

Intersection: 8: Market Street & Terracina Drive

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	75	166	64	55	56	124	325	276	80	150	320	325
Average Queue (ft)	53	67	18	17	18	45	151	112	18	106	135	140
95th Queue (ft)	81	134	50	48	46	108	259	227	69	161	261	261
Link Distance (ft)		1280		391			567	567			1220	1220
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	50		175		100	100			55	125		
Storage Blk Time (%)	19	12				1	14	11	0	8	4	
Queuing Penalty (veh)	25	16				3	10	11	0	36	9	

Intersection: 101: Brockton Avenue & EX South RCH Driveway

Movement	WB	NB	NB
Directions Served	R	T	TR
Maximum Queue (ft)	63	118	36
Average Queue (ft)	28	9	1
95th Queue (ft)	54	63	21
Link Distance (ft)	121	272	272
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 102: Brockton Avenue & New North RCH Driveway

Movement	WB	NB	NB	SB	SB
Directions Served	LR	T	TR	LT	T
Maximum Queue (ft)	50	241	166	92	53
Average Queue (ft)	13	72	21	21	3
95th Queue (ft)	40	209	104	68	27
Link Distance (ft)	212	211	211	170	170
Upstream Blk Time (%)		2	0		
Queuing Penalty (veh)		10	0		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Queuing and Blocking Report

Baseline

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Intersection: 103: Brockton Avenue & New Garage Egress

Movement	WB	NB	NB
Directions Served	LR	T	T
Maximum Queue (ft)	40	201	95
Average Queue (ft)	10	138	9
95th Queue (ft)	34	241	64
Link Distance (ft)	91	170	170
Upstream Blk Time (%)		14	0
Queuing Penalty (veh)		63	1
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 104: RCH Driveway & 14th Street

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	R
Maximum Queue (ft)	32	55	56	124	160	32
Average Queue (ft)	3	3	21	16	28	11
95th Queue (ft)	18	23	49	77	108	34
Link Distance (ft)	132	132		924	924	99
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			120			
Storage Blk Time (%)				1		
Queuing Penalty (veh)				0		

Network Summary

Network wide Queuing Penalty: 1986

Queuing and Blocking Report

Baseline

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Intersection: 1: Brockton Avenue & University Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	26	862	875	124	1121	1161	75	1376	125	74	431	424
Average Queue (ft)	1	700	743	106	499	389	63	779	35	35	390	347
95th Queue (ft)	9	1104	1059	158	1094	1005	88	1239	128	94	487	573
Link Distance (ft)		823	823		1114	1114		2322			397	397
Upstream Blk Time (%)		75	74		3	5					86	75
Queuing Penalty (veh)		0	0		9	16					0	0
Storage Bay Dist (ft)	95			100			50		100	50		
Storage Blk Time (%)		29		80	5		21	41	0	5	86	
Queuing Penalty (veh)		3		149	5		168	128	0	27	78	

Intersection: 2: Market Street & University Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	R	L	T
Maximum Queue (ft)	84	549	577	219	329	249	75	1774	1770	1648	75	456
Average Queue (ft)	64	191	193	113	120	95	72	1478	1487	1327	66	425
95th Queue (ft)	101	433	448	186	223	179	81	1829	1839	1704	86	442
Link Distance (ft)		1114	1114		869	869		2312	2312	2312		404
Upstream Blk Time (%)												76
Queuing Penalty (veh)												0
Storage Bay Dist (ft)	60			195			50				50	
Storage Blk Time (%)	34	22		3	3		75	8			49	35
Queuing Penalty (veh)	85	31		5	3		556	17			357	47

Intersection: 2: Market Street & University Avenue

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	443	443
Average Queue (ft)	422	421
95th Queue (ft)	432	433
Link Distance (ft)	404	404
Upstream Blk Time (%)	77	58
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report

Baseline

02/10/2025

Intersection: 3: Brockton Avenue & 14th Street

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	L	TR	L	T	R	L	T	R
Maximum Queue (ft)	95	368	172	154	144	53	198	196	75	2336	124
Average Queue (ft)	57	210	137	130	99	17	189	126	69	2279	4
95th Queue (ft)	115	408	162	157	167	42	201	217	81	2567	43
Link Distance (ft)		353	132	132	132		180	180		2322	
Upstream Blk Time (%)		20	32	25	9		36	3		40	
Queuing Penalty (veh)		0	147	112	39		193	18		440	
Storage Bay Dist (ft)	70					50			50		100
Storage Blk Time (%)	9	50				3	57		84	12	
Queuing Penalty (veh)	22	30				19	10		669	23	

Intersection: 4: Market Street & 14th Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	R	L	T
Maximum Queue (ft)	115	949	940	160	416	379	174	678	663	594	125	1931
Average Queue (ft)	113	915	912	159	386	347	152	388	390	171	118	1567
95th Queue (ft)	120	1007	1007	160	404	416	216	603	595	428	149	2030
Link Distance (ft)		924	924		364	364		646	646	646		2312
Upstream Blk Time (%)		42	38		80	5		0	0			
Queuing Penalty (veh)		296	269		0	0		2	1			
Storage Bay Dist (ft)	90			135			150				100	
Storage Blk Time (%)	48	68		77	4		32	40			56	46
Queuing Penalty (veh)	156	140		237	19		190	38			405	97

Intersection: 4: Market Street & 14th Street

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	1921	1573
Average Queue (ft)	1570	1082
95th Queue (ft)	2030	1599
Link Distance (ft)	2312	2312
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report

Baseline

02/10/2025

Intersection: 5: Brockton Avenue & Tequesquite Avenue

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	T	TR
Maximum Queue (ft)	125	439	125	447	79	899	125	297	320
Average Queue (ft)	115	179	105	217	43	558	72	201	211
95th Queue (ft)	146	359	151	479	87	906	166	352	378
Link Distance (ft)		559		432		917		272	272
Upstream Blk Time (%)				8		0		7	13
Queuing Penalty (veh)				0		0		51	98
Storage Bay Dist (ft)	100		100		55		100		
Storage Blk Time (%)	57	6	39	12	8	33		61	
Queuing Penalty (veh)	48	10	74	17	82	22		42	

Intersection: 6: Market Street & 15th Street

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	114	162	120	392	130	958	970	104	636	634
Average Queue (ft)	55	74	119	376	51	765	793	99	324	311
95th Queue (ft)	103	129	120	388	116	874	922	112	535	528
Link Distance (ft)		222		358		1220	1220		646	646
Upstream Blk Time (%)				77					0	0
Queuing Penalty (veh)				0					0	0
Storage Bay Dist (ft)	90		95		105			80		
Storage Blk Time (%)	3	4	77	1	1	44		45	20	
Queuing Penalty (veh)	4	3	141	3	6	22		351	54	

Intersection: 7: Brockton Avenue & Terracina Drive

Movement	WB	NB	SB	SB
Directions Served	LR	TR	L	T
Maximum Queue (ft)	95	275	54	378
Average Queue (ft)	35	54	21	66
95th Queue (ft)	67	186	51	228
Link Distance (ft)	1280	543		917
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			30	
Storage Blk Time (%)			13	6
Queuing Penalty (veh)			150	4

Queuing and Blocking Report

Baseline

02/10/2025

Intersection: 8: Market Street & Terracina Drive

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	74	112	88	72	112	124	206	340	80	150	434	226
Average Queue (ft)	23	48	36	22	46	26	121	130	41	141	162	103
95th Queue (ft)	57	95	65	56	85	79	198	244	104	169	332	195
Link Distance (ft)		1280		391			567	567			1220	1220
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	50		175		100	100			55	125		
Storage Blk Time (%)	1	17			1		13	24	1	25	0	
Queuing Penalty (veh)	1	8			1		5	36	3	99	1	

Intersection: 101: Brockton Avenue & EX South RCH Driveway

Movement	WB	NB	NB	SB	SB
Directions Served	R	T	TR	T	T
Maximum Queue (ft)	136	196	176	206	242
Average Queue (ft)	54	27	22	43	61
95th Queue (ft)	109	125	103	147	179
Link Distance (ft)	121	272	272	211	211
Upstream Blk Time (%)	7			0	1
Queuing Penalty (veh)	0			0	6
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 102: Brockton Avenue & New North RCH Driveway

Movement	WB	NB	NB	SB	SB
Directions Served	LR	T	TR	LT	T
Maximum Queue (ft)	219	248	225	95	54
Average Queue (ft)	47	91	51	12	3
95th Queue (ft)	135	249	190	51	22
Link Distance (ft)	212	211	211	170	170
Upstream Blk Time (%)	2	7	2		
Queuing Penalty (veh)	0	44	14		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Queuing and Blocking Report Baseline

02/10/2025

Intersection: 103: Brockton Avenue & New Garage Egress

Movement	WB	NB	NB
Directions Served	LR	T	T
Maximum Queue (ft)	106	247	186
Average Queue (ft)	43	152	39
95th Queue (ft)	106	259	139
Link Distance (ft)	91	170	170
Upstream Blk Time (%)	24	22	2
Queuing Penalty (veh)	0	118	10
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 104: RCH Driveway & 14th Street

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	R
Maximum Queue (ft)	150	179	145	377	400	133
Average Queue (ft)	122	131	19	140	146	82
95th Queue (ft)	188	209	80	326	371	139
Link Distance (ft)	132	132		924	924	99
Upstream Blk Time (%)	17	26				80
Queuing Penalty (veh)	65	99				0
Storage Bay Dist (ft)			120			
Storage Blk Time (%)				18		
Queuing Penalty (veh)				5		

Network Summary

Network wide Queuing Penalty: 6949

APPENDIX C-5

INTERSECTION ANALYSIS WORKSHEETS – BUILD OUT 2035 PLUS PROJECT WITH IMPROVEMENTS

Timings

4: Market Street & 14th Street

02/13/2025

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	110	450	454	639	83	786	236	77	836	167
Future Volume (vph)	110	450	454	639	83	786	236	77	836	167
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	3	1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	9.5	9.5	22.5	22.5
Total Split (s)	12.0	22.5	16.0	26.5	10.0	26.5	16.0	10.0	26.5	26.5
Total Split (%)	16.0%	30.0%	21.3%	35.3%	13.3%	35.3%	21.3%	13.3%	35.3%	35.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	None	C-Max	C-Max
Act Effect Green (s)	7.3	16.3	11.5	22.7	6.1	25.2	41.2	6.0	25.2	25.2
Actuated g/C Ratio	0.10	0.22	0.15	0.30	0.08	0.34	0.55	0.08	0.34	0.34
v/c Ratio	0.64	0.73	0.86	0.68	0.58	0.66	0.25	0.55	0.70	0.26
Control Delay (s/veh)	51.1	31.0	49.5	26.5	52.0	25.8	5.4	49.8	27.2	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	51.1	31.0	49.5	26.5	52.0	25.8	5.4	49.8	27.2	4.9
LOS	D	C	D	C	D	C	A	D	C	A
Approach Delay (s/veh)		34.3		35.4		23.4			25.3	
Approach LOS		C		D		C			C	

Intersection Summary

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay (s/veh): 29.2

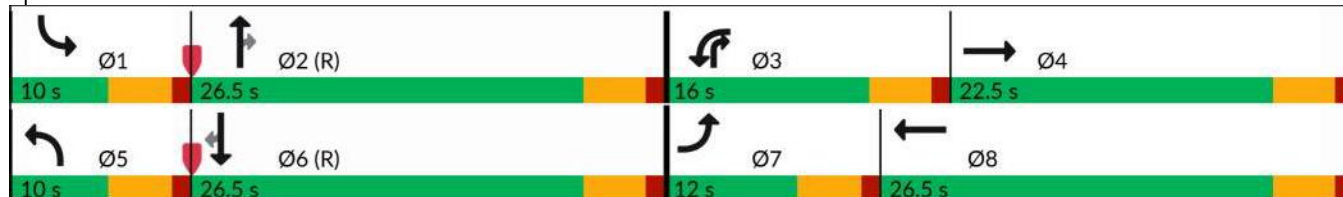
Intersection LOS: C

Intersection Capacity Utilization 71.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Market Street & 14th Street



HCM 7th Signalized Intersection Summary

4: Market Street & 14th Street

02/13/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	450	114	454	639	84	83	786	236	77	836	167
Future Volume (veh/h)	110	450	114	454	639	84	83	786	236	77	836	167
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	110	450	114	454	639	84	83	786	236	77	836	167
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	560	141	530	865	114	106	1251	801	99	1235	551
Arrive On Green	0.08	0.20	0.20	0.15	0.27	0.27	0.06	0.35	0.35	0.06	0.35	0.35
Sat Flow, veh/h	1781	2813	707	3456	3158	415	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	110	283	281	454	359	364	83	786	236	77	836	167
Grp Sat Flow(s),veh/h/ln	1781	1777	1743	1728	1777	1796	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	4.5	11.4	11.5	9.6	13.8	13.8	3.4	13.8	6.5	3.2	15.1	5.8
Cycle Q Clear(g_c), s	4.5	11.4	11.5	9.6	13.8	13.8	3.4	13.8	6.5	3.2	15.1	5.8
Prop In Lane	1.00		0.41	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	140	354	347	530	487	492	106	1251	801	99	1235	551
V/C Ratio(X)	0.78	0.80	0.81	0.86	0.74	0.74	0.78	0.63	0.29	0.78	0.68	0.30
Avail Cap(c_a), veh/h	178	426	418	530	521	527	131	1251	801	131	1235	551
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	0.28	0.28	0.28
Uniform Delay (d), s/veh	33.9	28.6	28.7	30.9	24.8	24.8	34.8	20.2	10.8	35.0	20.9	17.8
Incr Delay (d2), s/veh	16.0	8.7	9.6	13.1	5.1	5.1	21.2	2.4	0.9	6.1	0.8	0.4
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	2.5	5.5	5.5	4.8	6.2	6.3	2.1	5.8	2.3	1.5	6.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	50.0	37.3	38.2	44.0	29.9	29.9	55.9	22.6	11.7	41.0	21.7	18.2
LnGrp LOS	D	D	D	D	C	C	E	C	B	D	C	B
Approach Vol, veh/h	674		1177				1105			1080		
Approach Delay, s/veh	39.8		35.4				22.8			22.6		
Approach LOS	D		D				C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.7	30.9	16.0	19.4	9.0	30.6	10.4	25.0				
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	5.5	22.0	11.5	18.0	5.5	22.0	7.5	22.0				
Max Q Clear Time (g_c+I1), s	5.2	15.8	11.6	13.5	5.4	17.1	6.5	15.8				
Green Ext Time (p_c), s	0.0	3.2	0.0	1.4	0.0	2.7	0.0	2.3				
Intersection Summary												
HCM 7th Control Delay, s/veh	29.2											
HCM 7th LOS	C											

Timings

4: Market Street & 14th Street

02/13/2025

										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	207	646	434	614	95	1194	352	211	1439	178
Future Volume (vph)	207	646	434	614	95	1194	352	211	1439	178
Turn Type	Prot	NA	Prot	NA	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2	3	1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	3	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	9.5	9.5	22.5	22.5
Total Split (s)	16.7	26.1	17.6	27.0	10.6	39.3	17.6	17.0	45.7	45.7
Total Split (%)	16.7%	26.1%	17.6%	27.0%	10.6%	39.3%	17.6%	17.0%	45.7%	45.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	None	C-Max	C-Max
Act Effect Green (s)	12.2	21.6	13.1	22.5	6.1	34.8	52.4	12.5	41.2	41.2
Actuated g/C Ratio	0.12	0.22	0.13	0.23	0.06	0.35	0.52	0.13	0.41	0.41
v/c Ratio	0.96	1.00	0.97	1.02	0.89	0.97	0.40	0.95	0.99	0.24
Control Delay (s/veh)	97.9	70.9	79.3	73.2	92.4	49.9	6.0	58.1	44.0	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.7	0.0
Total Delay (s/veh)	97.9	70.9	79.3	73.2	92.4	49.9	6.0	58.1	52.7	10.3
LOS	F	E	E	E	F	D	A	E	D	B
Approach Delay (s/veh)		76.7		75.3		43.0			49.2	
Approach LOS		E		E		D			D	
Intersection Summary										
Cycle Length: 100										
Actuated Cycle Length: 100										
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green										
Natural Cycle: 110										
Control Type: Actuated-Coordinated										
Maximum v/c Ratio: 1.02										
Intersection Signal Delay (s/veh): 57.8										
Intersection LOS: E										
Intersection Capacity Utilization 94.7%										
ICU Level of Service F										
Analysis Period (min) 15										

Splits and Phases: 4: Market Street & 14th Street



HCM 7th Signalized Intersection Summary

4: Market Street & 14th Street

02/13/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	646	112	434	614	195	95	1194	352	211	1439	178
Future Volume (veh/h)	207	646	112	434	614	195	95	1194	352	211	1439	178
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	207	646	112	434	614	195	95	1194	352	211	1439	178
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	217	654	113	453	597	189	109	1237	759	223	1464	653
Arrive On Green	0.12	0.22	0.22	0.13	0.22	0.22	0.12	0.70	0.70	0.04	0.14	0.14
Sat Flow, veh/h	1781	3029	524	3456	2654	842	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	207	379	379	434	411	398	95	1194	352	211	1439	178
Grp Sat Flow(s),veh/h/ln	1781	1777	1776	1728	1777	1719	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	11.5	21.2	21.3	12.5	22.5	22.5	5.2	31.1	9.7	11.8	40.4	10.1
Cycle Q Clear(g_c), s	11.5	21.2	21.3	12.5	22.5	22.5	5.2	31.1	9.7	11.8	40.4	10.1
Prop In Lane	1.00		0.30	1.00		0.49	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	217	384	384	453	400	387	109	1237	759	223	1464	653
V/C Ratio(X)	0.95	0.99	0.99	0.96	1.03	1.03	0.87	0.97	0.46	0.95	0.98	0.27
Avail Cap(c_a), veh/h	217	384	384	453	400	387	109	1237	759	223	1464	653
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.14	0.14	0.14	0.20	0.20	0.20
Uniform Delay (d), s/veh	43.6	39.1	39.1	43.2	38.8	38.8	43.5	14.6	7.5	47.6	42.8	29.8
Incr Delay (d2), s/veh	47.6	42.2	42.9	31.8	52.2	53.6	10.9	4.4	0.3	16.0	7.3	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	7.9	13.6	13.7	7.3	15.4	15.1	2.5	5.8	2.2	6.6	20.6	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	91.2	81.3	82.0	75.0	91.0	92.4	54.4	19.1	7.8	63.6	50.1	30.0
LnGrp LOS	F	F	F	E	F	F	D	B	A	E	D	C
Approach Vol, veh/h	965		1243				1641		1828			
Approach Delay, s/veh	83.7		85.8				18.7		49.7			
Approach LOS	F		F				B		D			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	39.3	17.6	26.1	10.6	45.7	16.7	27.0				
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	12.5	34.8	13.1	21.6	6.1	41.2	12.2	22.5				
Max Q Clear Time (g_c+I1), s	13.8	33.1	14.5	23.3	7.2	42.4	13.5	24.5				
Green Ext Time (p_c), s	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0				
Intersection Summary												
HCM 7th Control Delay, s/veh	54.4											
HCM 7th LOS	D											