



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	353	475	1881	296	299	856
v/c Ratio	0.40	0.80	0.96	0.32	1.61	0.37
Control Delay	42.7	48.4	31.6	2.3	326.4	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.7	48.4	31.6	2.3	326.4	10.6
Queue Length 50th (ft)	132	364	830	35	~326	161
Queue Length 95th (ft)	179	485	896	16	#424	197
Internal Link Dist (ft)	497		343			322
Turn Bay Length (ft)		125		275	125	
Base Capacity (vph)	892	597	1966	942	186	2336
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.80	0.96	0.31	1.61	0.37

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

1: S Lamar Blvd & W Oltorf Street
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing AM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔↔	↔↔	↔↔↔	↔	↔↔	↔↔
Traffic Volume (vph)	318	413	1618	237	236	830
Future Volume (vph)	318	413	1618	237	236	830
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1583	3539	1525	1770	3505
Flt Permitted	0.95	1.00	1.00	1.00	0.05	1.00
Satd. Flow (perm)	3400	1583	3539	1525	94	3505
Peak-hour factor, PHF	0.90	0.87	0.86	0.80	0.79	0.97
Adj. Flow (vph)	353	475	1881	296	299	856
RTOR Reduction (vph)	0	6	0	96	0	0
Lane Group Flow (vph)	353	469	1881	200	299	856
Confl. Peds. (#/hr)		4		2	2	
Confl. Bikes (#/hr)		1		5		
Heavy Vehicles (%)	3%	2%	2%	4%	2%	3%
Turn Type	Prot	pt+ov	NA	Perm	pm+pt	NA
Protected Phases	4	1 4	2		1	6
Permitted Phases		4		2	6	
Actuated Green, G (s)	35.4	50.4	74.6	74.6	89.6	89.6
Effective Green, g (s)	35.4	50.4	74.6	74.6	89.6	89.6
Actuated g/C Ratio	0.26	0.37	0.55	0.55	0.66	0.66
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	1.0		1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	891	590	1955	842	186	2326
v/s Ratio Prot	0.10	c0.30	0.53		c0.12	0.24
v/s Ratio Perm				0.13	c0.95	
v/c Ratio	0.40	0.79	0.96	0.24	1.61	0.37
Uniform Delay, d1	41.0	37.7	28.9	15.6	46.7	10.1
Progression Factor	1.00	1.00	0.70	0.37	1.00	1.00
Incremental Delay, d2	1.3	10.6	10.7	0.5	297.0	0.4
Delay (s)	42.3	48.3	31.0	6.2	343.6	10.6
Level of Service	D	D	C	A	F	B
Approach Delay (s)	45.7		27.6			96.8
Approach LOS	D		C			F

Intersection Summary			
HCM 2000 Control Delay	50.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.42		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	95	204	129	100	138	1830	38	1238
v/c Ratio	0.29	0.79	0.45	0.54	0.38	0.80	0.56	0.76
Control Delay	44.2	40.3	48.9	37.9	17.8	17.0	55.0	33.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.2	40.3	48.9	37.9	17.8	17.0	55.0	33.4
Queue Length 50th (ft)	71	52	98	37	38	416	17	305
Queue Length 95th (ft)	94	72	146	85	m71	475	25	305
Internal Link Dist (ft)		215		304		217		588
Turn Bay Length (ft)	75		200		50		50	
Base Capacity (vph)	324	415	287	361	367	2315	78	1850
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.49	0.45	0.28	0.38	0.79	0.49	0.67

Intersection Summary

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

2: S Lamar Blvd & Bluebonnet Lane
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↗	
Traffic Volume (vph)	70	27	136	112	32	45	126	1441	59	23	1010	3
Future Volume (vph)	70	27	136	112	32	45	126	1441	59	23	1010	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	0.91		1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1768	1617		1750	1700		1787	3469		1702	3469	
Flt Permitted	0.61	1.00		0.37	1.00		0.09	1.00		0.08	1.00	
Satd. Flow (perm)	1131	1617		689	1700		170	3469		147	3469	
Peak-hour factor, PHF	0.74	0.71	0.82	0.87	0.86	0.71	0.91	0.82	0.81	0.61	0.82	0.50
Adj. Flow (vph)	95	38	166	129	37	63	138	1757	73	38	1232	6
RTOR Reduction (vph)	0	132	0	0	52	0	0	2	0	0	1	0
Lane Group Flow (vph)	95	72	0	129	48	0	138	1828	0	38	1237	0
Confl. Peds. (#/hr)	1		4	4		1	7		6	6		7
Confl. Bikes (#/hr)						1						1
Heavy Vehicles (%)	2%	0%	2%	3%	0%	0%	1%	3%	10%	6%	4%	0%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	28.7	10.7		28.7	10.7		89.3	89.3		63.0	63.0	
Effective Green, g (s)	28.7	10.7		28.7	10.7		89.3	89.3		63.0	63.0	
Actuated g/C Ratio	0.21	0.08		0.21	0.08		0.66	0.66		0.47	0.47	
Clearance Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	325	128		287	134		367	2294		68	1618	
v/s Ratio Prot	0.04	c0.04		c0.06	0.03		0.06	c0.53			0.36	
v/s Ratio Perm	0.02			0.04			0.19			0.26		
v/c Ratio	0.29	0.57		0.45	0.36		0.38	0.80		0.56	0.76	
Uniform Delay, d1	44.2	59.9		45.4	58.9		17.5	16.4		26.0	29.9	
Progression Factor	1.00	1.00		1.00	1.00		1.37	0.92		1.01	1.03	
Incremental Delay, d2	0.2	3.4		0.4	0.6		2.0	2.0		28.0	3.3	
Delay (s)	44.4	63.3		45.8	59.5		26.0	17.0		54.2	34.0	
Level of Service	D	E		D	E		C	B		D	C	
Approach Delay (s)		57.3			51.8			17.7			34.6	
Approach LOS		E			D			B			C	

Intersection Summary

HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	99.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

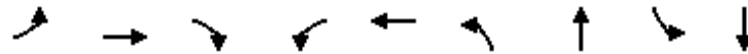


Lane Group	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	725	1443	393	1097
v/c Ratio	0.76	0.71	0.68	0.53
Control Delay	43.0	10.9	45.9	13.4
Queue Delay	0.0	0.5	0.0	0.0
Total Delay	43.0	11.4	45.9	13.4
Queue Length 50th (ft)	297	407	344	192
Queue Length 95th (ft)	394	294	422	193
Internal Link Dist (ft)		324		498
Turn Bay Length (ft)			100	
Base Capacity (vph)	954	2072	575	2314
Starvation Cap Reductn	0	238	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.76	0.79	0.68	0.47
Intersection Summary				

3: S Lamar Blvd & Menchaca Road
 HCM Signalized Intersection Capacity Analysis



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↔↔	↕↔		↔↔	↕↕
Traffic Volume (vph)	0	689	1077	4	334	976
Future Volume (vph)	0	689	1077	4	334	976
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0	6.0
Lane Util. Factor		0.88	0.95		1.00	0.95
Frbp, ped/bikes		1.00	1.00		1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00
Frt		0.85	1.00		1.00	1.00
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		2787	3469		1787	3471
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		2787	3469		1787	3471
Peak-hour factor, PHF	0.92	0.95	0.75	0.60	0.85	0.89
Adj. Flow (vph)	0	725	1436	7	393	1097
RTOR Reduction (vph)	0	58	0	0	0	0
Lane Group Flow (vph)	0	667	1443	0	393	1097
Confl. Peds. (#/hr)		1		4	4	
Heavy Vehicles (%)	2%	2%	4%	0%	1%	4%
Turn Type		pt+ov	NA		Prot	NA
Protected Phases		1 4	2 3		1 4	1 2
Permitted Phases						
Actuated Green, G (s)		43.5	79.5		43.5	79.9
Effective Green, g (s)		43.5	79.5		43.5	79.9
Actuated g/C Ratio		0.32	0.59		0.32	0.59
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		898	2042		575	2054
v/s Ratio Prot		c0.24	c0.42		0.22	0.32
v/s Ratio Perm						
v/c Ratio		0.74	0.71		0.68	0.53
Uniform Delay, d1		40.8	19.5		39.8	16.4
Progression Factor		1.00	0.48		0.98	0.79
Incremental Delay, d2		2.9	0.8		2.1	0.8
Delay (s)		43.7	10.1		41.0	13.7
Level of Service		D	B		D	B
Approach Delay (s)	43.7		10.1			20.9
Approach LOS	D		B			C
Intersection Summary						
HCM 2000 Control Delay			21.2		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.80			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	24.0
Intersection Capacity Utilization			78.5%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	149	128	199	98	143	146	1368	43	1094
v/c Ratio	0.59	0.32	0.41	0.40	0.19	1.39	0.67	0.37	0.53
Control Delay	59.9	49.3	8.8	53.2	45.3	258.3	16.4	55.7	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.1
Total Delay	59.9	49.3	8.8	53.2	45.3	258.3	16.6	55.7	3.9
Queue Length 50th (ft)	121	98	0	76	54	~172	316	39	193
Queue Length 95th (ft)	132	155	63	97	77	#295	217	#78	200
Internal Link Dist (ft)		257			238		436		324
Turn Bay Length (ft)	90			100		125		80	
Base Capacity (vph)	254	394	489	247	740	105	2302	116	2067
Starvation Cap Reductn	0	0	0	0	0	0	0	0	208
Spillback Cap Reductn	0	0	0	0	0	0	307	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.32	0.41	0.40	0.19	1.39	0.69	0.37	0.59

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

4: S Lamar Blvd & Barton Skyway/Lightsey Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↕		↖	↕		↖	↕	
Traffic Volume (vph)	94	110	175	65	110	5	124	980	41	24	892	56
Future Volume (vph)	94	110	175	65	110	5	124	980	41	24	892	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1748	1881	1583	1795	3524		1787	3452		1805	3439	
Flt Permitted	0.66	1.00	1.00	0.62	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1216	1881	1583	1178	3524		1787	3452		1805	3439	
Peak-hour factor, PHF	0.63	0.86	0.88	0.66	0.80	0.95	0.85	0.74	0.93	0.56	0.88	0.70
Adj. Flow (vph)	149	128	199	98	138	5	146	1324	44	43	1014	80
RTOR Reduction (vph)	0	0	157	0	2	0	0	2	0	0	4	0
Lane Group Flow (vph)	149	128	42	98	141	0	146	1366	0	43	1090	0
Confl. Peds. (#/hr)	2		4	4		2	2		4	4		2
Confl. Bikes (#/hr)			1						1			2
Heavy Vehicles (%)	3%	1%	0%	0%	1%	25%	1%	4%	4%	0%	4%	0%
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	
Protected Phases		8			8		5	5 6		7	6 7	
Permitted Phases	8		8	8								
Actuated Green, G (s)	28.4	28.4	28.4	28.4	28.4		8.0	79.9		8.7	80.6	
Effective Green, g (s)	28.4	28.4	28.4	28.4	28.4		8.0	79.9		8.7	80.6	
Actuated g/C Ratio	0.21	0.21	0.21	0.21	0.21		0.06	0.59		0.06	0.60	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0			6.0		
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		1.0			1.0		
Lane Grp Cap (vph)	255	395	333	247	741		105	2043		116	2053	
v/s Ratio Prot		0.07			0.04		c0.08	c0.40		0.02	c0.32	
v/s Ratio Perm	c0.12		0.03	0.08								
v/c Ratio	0.58	0.32	0.13	0.40	0.19		1.39	0.67		0.37	0.53	
Uniform Delay, d1	48.0	45.2	43.2	45.9	43.8		63.5	18.6		60.5	16.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.95	0.83		0.71	0.18	
Incremental Delay, d2	9.4	2.2	0.8	4.7	0.6		215.1	1.4		0.7	0.1	
Delay (s)	57.4	47.3	44.0	50.6	44.4		275.4	16.7		43.5	3.1	
Level of Service	E	D	D	D	D		F	B		D	A	
Approach Delay (s)		49.1			46.9			41.7			4.6	
Approach LOS		D			D			D			A	

Intersection Summary		
HCM 2000 Control Delay	30.6	HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio	0.71	
Actuated Cycle Length (s)	135.0	Sum of lost time (s) 24.0
Intersection Capacity Utilization	76.7%	ICU Level of Service D
Analysis Period (min)	15	
c Critical Lane Group		



Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	85	152	202	22	1597	175	170	1111
v/c Ratio	0.36	0.58	0.56	0.07	0.63	0.15	1.18	0.44
Control Delay	42.7	58.1	41.4	6.3	11.1	1.1	156.6	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.7	58.1	41.4	6.3	11.1	1.1	156.6	15.4
Queue Length 50th (ft)	53	121	116	5	340	0	~182	297
Queue Length 95th (ft)	66	132	109	11	256	7	#253	328
Internal Link Dist (ft)	270		212		174			469
Turn Bay Length (ft)		120		95			125	
Base Capacity (vph)	234	263	358	301	2542	1164	144	2508
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.58	0.56	0.07	0.63	0.15	1.18	0.44

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.






















Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

5: S Lamar Blvd & Private Driveway/Panther Trail
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA
 2021 Existing AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	7	17	97	3	152	15	1118	124	129	1014	16
Future Volume (veh/h)	27	7	17	97	3	152	15	1118	124	129	1014	16
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1855	1900	1827	1812	1900	1900	1863	1881	1810	1843	1900
Adj Flow Rate, veh/h	48	11	26	152	5	197	22	1597	175	170	1090	21
Adj No. of Lanes	0	1	0	1	1	0	1	2	1	1	2	0
Peak Hour Factor	0.56	0.62	0.65	0.64	0.60	0.77	0.69	0.70	0.71	0.76	0.93	0.75
Percent Heavy Veh, %	0	0	8	4	0	5	0	2	1	5	3	8
Cap, veh/h	107	29	42	280	8	310	358	2543	1146	180	2524	49
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.72	0.72	0.72	0.72	0.72	0.72
Sat Flow, veh/h	316	139	201	1332	38	1495	515	3539	1595	260	3512	68
Grp Volume(v), veh/h	85	0	0	152	0	202	22	1597	175	170	543	568
Grp Sat Flow(s),veh/h/ln	656	0	0	1332	0	1533	515	1770	1595	260	1751	1829
Q Serve(g_s), s	6.2	0.0	0.0	0.0	0.0	16.2	2.5	31.2	4.7	65.8	17.1	17.1
Cycle Q Clear(g_c), s	22.5	0.0	0.0	18.5	0.0	16.2	19.6	31.2	4.7	97.0	17.1	17.1
Prop In Lane	0.56		0.31	1.00		0.98	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	178	0	0	280	0	318	358	2543	1146	180	1258	1314
V/C Ratio(X)	0.48	0.00	0.00	0.54	0.00	0.64	0.06	0.63	0.15	0.94	0.43	0.43
Avail Cap(c_a), veh/h	178	0	0	280	0	318	358	2543	1146	180	1258	1314
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.7	0.0	0.0	49.7	0.0	48.8	11.7	9.7	6.0	43.0	7.8	7.8
Incr Delay (d2), s/veh	8.9	0.0	0.0	7.4	0.0	9.3	0.3	1.2	0.3	53.8	1.1	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	3.5	0.0	0.0	5.9	0.0	7.7	0.4	15.5	2.1	9.0	8.5	8.9
LnGrp Delay(d),s/veh	63.6	0.0	0.0	57.1	0.0	58.2	12.1	10.9	6.3	96.8	8.8	8.8
LnGrp LOS	E			E		E	B	B	A	F	A	A
Approach Vol, veh/h		85			354			1794			1281	
Approach Delay, s/veh		63.6			57.7			10.5			20.5	
Approach LOS		E			E			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		102.0		33.0		102.0		33.0				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		97.0		28.0		97.0		28.0				
Max Q Clear Time (g_c+I1), s		33.2		24.5		99.0		20.5				
Green Ext Time (p_c), s		5.3		0.0		0.0		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay				20.2								
HCM 2010 LOS				C								

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Private Driveway

Queues

2021 Existing AM



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL2	SBT	NWL	NWR
Lane Group Flow (vph)	270	180	87	109	34	960	103	1028	296	1172
v/c Ratio	0.91	0.44	0.38	0.35	0.16	1.51	0.71	0.35	1.46	1.10
Control Delay	80.5	8.7	43.2	18.6	53.5	270.7	83.3	21.0	271.1	91.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.5	8.7	43.2	18.6	53.5	270.7	83.3	21.0	271.1	91.2
Queue Length 50th (ft)	200	0	58	17	26	~1124	86	148	~341	~564
Queue Length 95th (ft)	156	0	77	28	40	#734	108	175	#391	#463
Internal Link Dist (ft)		165		155		240		683	179	
Turn Bay Length (ft)										
Base Capacity (vph)	296	405	234	309	215	635	146	2903	203	1070
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.44	0.37	0.35	0.16	1.51	0.71	0.35	1.46	1.10

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

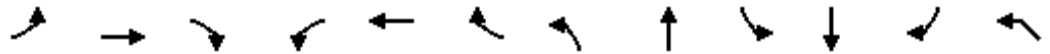
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Private Driveway
 HCM Signalized Intersection Capacity Analysis

2021 Existing AM



Movement	EBL	EBT	EBR2	WBL	WBT	WBR	NBL	NBT	SBL2	SBT	SBR	NWL
Lane Configurations												
Traffic Volume (vph)	143	7	130	59	14	50	21	576	69	786	96	216
Future Volume (vph)	143	7	130	59	14	50	21	576	69	786	96	216
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		7.5	5.5	7.0	5.5		7.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	0.86		1.00
Frbp, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	1.00	1.00		1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00
Frt	1.00	0.86		1.00	0.88		1.00	1.00	1.00	0.98		1.00
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	0.95	1.00		0.95
Satd. Flow (prot)	1804	1632		1770	1656		1805	1900	1736	6087		1703
Flt Permitted	0.65	1.00		0.45	1.00		0.95	1.00	0.95	1.00		0.95
Satd. Flow (perm)	1236	1632		839	1656		1805	1900	1736	6087		1703
Peak-hour factor, PHF	0.53	0.62	0.77	0.68	0.62	0.58	0.62	0.60	0.67	0.90	0.62	0.73
Adj. Flow (vph)	270	11	169	87	23	86	34	960	103	873	155	296
RTOR Reduction (vph)	0	154	0	0	74	0	0	0	0	25	0	0
Lane Group Flow (vph)	270	26	0	87	35	0	34	960	103	1003	0	296
Confl. Peds. (#/hr)	1					1	3		1		3	3
Confl. Bikes (#/hr)						1					2	
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	0%	4%	2%	20%	6%
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA	Prot	NA		Prot
Protected Phases	7	4		3	8		5!	2!	1	6		5!
Permitted Phases	4			8								
Actuated Green, G (s)	27.3	18.8		26.7	18.5		15.5	43.5	11.0	61.5		15.5
Effective Green, g (s)	27.3	18.8		26.7	18.5		15.5	43.5	11.0	61.5		15.5
Actuated g/C Ratio	0.21	0.14		0.21	0.14		0.12	0.33	0.08	0.47		0.12
Clearance Time (s)	6.5	6.5		6.5	6.5		7.5	5.5	7.0	5.5		7.5
Vehicle Extension (s)	1.0	3.0		3.0	3.0		3.0	3.0	2.0	2.0		3.0
Lane Grp Cap (vph)	296	236		231	235		215	635	146	2879		203
v/s Ratio Prot	c0.06	0.02		0.02	0.02		0.02	c0.51	c0.06	0.16		c0.17
v/s Ratio Perm	c0.13			0.05								
v/c Ratio	0.91	0.11		0.38	0.15		0.16	1.51	0.71	0.35		1.46
Uniform Delay, d1	49.2	48.3		43.3	48.9		51.4	43.2	57.9	21.6		57.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	34.0	0.9		1.0	1.3		0.3	238.4	24.9	0.3		231.3
Delay (s)	83.2	49.3		44.3	50.2		51.7	281.7	82.8	21.9		288.6
Level of Service	F	D		D	D		D	F	F	C		F
Approach Delay (s)		69.6			47.6			273.8		27.5		143.9
Approach LOS		E			D			F		C		F

Intersection Summary		
HCM 2000 Control Delay	131.0	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	1.25	F
Actuated Cycle Length (s)	130.0	Sum of lost time (s)
Intersection Capacity Utilization	133.7%	33.0
Analysis Period (min)	15	ICU Level of Service
		H

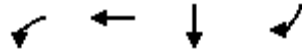
! Phase conflict between lane groups.
 c Critical Lane Group

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Private Driveway
 HCM Signalized Intersection Capacity Analysis

2021 Existing AM



Movement	NWR	NWR2
Lane Configurations	FF	
Traffic Volume (vph)	808	44
Future Volume (vph)	808	44
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.5	
Lane Util. Factor	0.88	
Frbp, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.85	
Flt Protected	1.00	
Satd. Flow (prot)	2790	
Flt Permitted	1.00	
Satd. Flow (perm)	2790	
Peak-hour factor, PHF	0.74	0.55
Adj. Flow (vph)	1092	80
RTOR Reduction (vph)	137	0
Lane Group Flow (vph)	1035	0
Confl. Peds. (#/hr)		1
Confl. Bikes (#/hr)		
Heavy Vehicles (%)	2%	0%
Turn Type	Prot	
Protected Phases	2!	
Permitted Phases		
Actuated Green, G (s)	43.5	
Effective Green, g (s)	43.5	
Actuated g/C Ratio	0.33	
Clearance Time (s)	5.5	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	933	
v/s Ratio Prot	0.37	
v/s Ratio Perm		
v/c Ratio	1.11	
Uniform Delay, d1	43.2	
Progression Factor	1.00	
Incremental Delay, d2	64.2	
Delay (s)	107.4	
Level of Service	F	
Approach Delay (s)		
Approach LOS		
Intersection Summary		



Lane Group	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	452	1453	595	265
v/c Ratio	0.43	0.67	0.50	0.17
Control Delay	1.0	6.1	50.4	0.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	1.0	6.1	50.4	0.2
Queue Length 50th (ft)	1	126	136	0
Queue Length 95th (ft)	m0	m546	163	0
Internal Link Dist (ft)		23	453	
Turn Bay Length (ft)				
Base Capacity (vph)	1046	2168	1187	1564
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.43	0.67	0.50	0.17

Intersection Summary

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

7: S Lamar Blvd & Capity of Texas Hwy
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations				↖	↕						↑↑↑	↗	
Traffic Volume (vph)	0	0	0	422	1305	0	0	0	0	0	518	233	
Future Volume (vph)	0	0	0	422	1305	0	0	0	0	0	518	233	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				6.0	6.0						6.0	4.0	
Lane Util. Factor				0.91	0.91						0.86	1.00	
Frbp, ped/bikes				1.00	1.00						1.00	0.99	
Flpb, ped/bikes				1.00	1.00						1.00	1.00	
Frt				1.00	1.00						1.00	0.85	
Flt Protected				0.95	1.00						1.00	1.00	
Satd. Flow (prot)				1595	3383						6166	1564	
Flt Permitted				0.95	1.00						1.00	1.00	
Satd. Flow (perm)				1595	3383						6166	1564	
Peak-hour factor, PHF	0.92	0.92	0.92	0.84	0.93	0.92	0.92	0.92	0.92	0.92	0.87	0.88	
Adj. Flow (vph)	0	0	0	502	1403	0	0	0	0	0	595	265	
RTOR Reduction (vph)	0	0	0	41	38	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	411	1415	0	0	0	0	0	595	265	
Confl. Peds. (#/hr)												1	
Heavy Vehicles (%)	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	6%	2%	
Turn Type				custom	NA						NA	Free	
Protected Phases				1 2 4 8	1 2 4 8						5 6 7		
Permitted Phases				3	3							Free	
Actuated Green, G (s)				86.0	86.0						33.0	135.0	
Effective Green, g (s)				86.0	86.0						33.0	135.0	
Actuated g/C Ratio				0.64	0.64						0.24	1.00	
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				1086	2305						1507	1564	
v/s Ratio Prot				0.24	c0.39						c0.10		
v/s Ratio Perm				0.02	0.03							0.17	
v/c Ratio				0.38	0.61						0.39	0.17	
Uniform Delay, d1				11.7	14.6						42.6	0.0	
Progression Factor				0.06	0.52						1.00	1.00	
Incremental Delay, d2				0.0	0.1						0.8	0.2	
Delay (s)				0.8	7.7						43.4	0.2	
Level of Service				A	A						D	A	
Approach Delay (s)		0.0			6.1			0.0			30.1		
Approach LOS		A			A			A			C		
Intersection Summary													
HCM 2000 Control Delay			13.5		HCM 2000 Level of Service							B	
HCM 2000 Volume to Capacity ratio			0.73										
Actuated Cycle Length (s)			135.0		Sum of lost time (s)						40.0		
Intersection Capacity Utilization			62.9%		ICU Level of Service						B		
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	WBT	NBL	NBT
Lane Group Flow (vph)	1493	265	834
v/c Ratio	1.07	0.30	0.31
Control Delay	88.3	1.1	1.3
Queue Delay	11.9	0.3	0.1
Total Delay	100.2	1.4	1.4
Queue Length 50th (ft)	~521	2	3
Queue Length 95th (ft)	#621	m5	5
Internal Link Dist (ft)	133		295
Turn Bay Length (ft)			
Base Capacity (vph)	1393	898	2674
Starvation Cap Reductn	0	233	717
Spillback Cap Reductn	102	2	1
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.16	0.40	0.43

Intersection Summary

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

8: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↑	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1418	0	315	566	0	0	0	0
Future Volume (vph)	0	0	0	0	1418	0	315	566	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0		6.0	6.0				
Lane Util. Factor					0.91		0.86	0.86				
Frbp, ped/bikes					1.00		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					1.00		1.00	1.00				
Flt Protected					1.00		0.95	0.99				
Satd. Flow (prot)					5085		1552	4790				
Flt Permitted					1.00		0.95	0.99				
Satd. Flow (perm)					5085		1552	4790				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.95	0.79	0.89	0.76	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1493	0	354	745	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	47	47	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1493	0	218	787	0	0	0	0
Confl. Peds. (#/hr)						1						
Heavy Vehicles (%)	2%	2%	2%	2%	2%	6%	0%	2%	2%	2%	2%	2%
Turn Type					NA		custom	NA				
Protected Phases					1 7 8		2 3 4 5	2 3 4 5				
Permitted Phases							6	6				
Actuated Green, G (s)					40.0		77.0	77.0				
Effective Green, g (s)					38.0		75.0	75.0				
Actuated g/C Ratio					0.28		0.56	0.56				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)					1431		931	2874				
v/s Ratio Prot					c0.29		0.10	c0.12				
v/s Ratio Perm							0.04	0.05				
v/c Ratio					1.04		0.23	0.27				
Uniform Delay, d1					48.5		15.3	15.7				
Progression Factor					0.93		0.07	0.10				
Incremental Delay, d2					35.0		0.0	0.0				
Delay (s)					80.0		1.1	1.6				
Level of Service					E		A	A				
Approach Delay (s)		0.0			80.0			1.4			0.0	
Approach LOS		A			E			A			A	
Intersection Summary												
HCM 2000 Control Delay			46.7				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			135.0				Sum of lost time (s)		40.0			
Intersection Capacity Utilization			67.3%				ICU Level of Service			C		
Analysis Period (min)			15									

c Critical Lane Group



Lane Group	EBT	SBL	SBT
Lane Group Flow (vph)	712	272	852
v/c Ratio	0.74	0.29	0.28
Control Delay	56.8	1.9	1.6
Queue Delay	0.1	0.4	0.2
Total Delay	56.8	2.3	1.7
Queue Length 50th (ft)	217	0	2
Queue Length 95th (ft)	266	1	2
Internal Link Dist (ft)	69		291
Turn Bay Length (ft)			
Base Capacity (vph)	960	943	3051
Starvation Cap Reductn	0	317	1143
Spillback Cap Reductn	11	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.75	0.43	0.45
Intersection Summary			

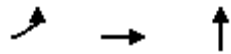
9: S Lamar Blvd & Capity of Texas Hwy
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↑↑↑								↘	↑↑↑		
Traffic Volume (vph)	0	648	0	0	0	0	0	0	0	269	709	0	
Future Volume (vph)	0	648	0	0	0	0	0	0	0	269	709	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.0								6.0	6.0		
Lane Util. Factor		0.91								0.86	0.86		
Frbp, ped/bikes		1.00								1.00	1.00		
Flpb, ped/bikes		1.00								1.00	1.00		
Frt		1.00								1.00	1.00		
Flt Protected		1.00								0.95	1.00		
Satd. Flow (prot)		4988								1437	4783		
Flt Permitted		1.00								0.95	1.00		
Satd. Flow (perm)		4988								1437	4783		
Peak-hour factor, PHF	0.92	0.91	0.88	0.92	0.92	0.92	0.92	0.92	0.92	0.87	0.87	0.92	
Adj. Flow (vph)	0	712	0	0	0	0	0	0	0	309	815	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	38	38	0	
Lane Group Flow (vph)	0	712	0	0	0	0	0	0	0	234	814	0	
Confl. Bikes (#/hr)			1										
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	8%	2%	2%	
Turn Type		NA								custom	NA		
Protected Phases		4 5								1 2 6 8	1 2 6 8		
Permitted Phases										7	7		
Actuated Green, G (s)		26.0								86.0	86.0		
Effective Green, g (s)		26.0								86.0	86.0		
Actuated g/C Ratio		0.19								0.64	0.64		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)		960								979	3259		
v/s Ratio Prot		c0.14								0.15	c0.16		
v/s Ratio Perm										0.01	0.01		
v/c Ratio		0.74								0.24	0.25		
Uniform Delay, d1		51.3								10.5	10.6		
Progression Factor		1.00								0.25	0.20		
Incremental Delay, d2		2.7								0.0	0.0		
Delay (s)		54.1								2.6	2.1		
Level of Service		D								A	A		
Approach Delay (s)		54.1			0.0			0.0			2.2		
Approach LOS		D			A			A			A		
Intersection Summary													
HCM 2000 Control Delay			22.3		HCM 2000 Level of Service						C		
HCM 2000 Volume to Capacity ratio			0.44										
Actuated Cycle Length (s)			135.0		Sum of lost time (s)					40.0			
Intersection Capacity Utilization			56.8%		ICU Level of Service					B			
Analysis Period (min)			15										



















c Critical Lane Group



Lane Group	EBL	EBT	NBT
Lane Group Flow (vph)	356	744	1046
v/c Ratio	0.36	0.38	0.68
Control Delay	1.7	2.4	47.3
Queue Delay	2.2	1.5	0.0
Total Delay	4.0	3.9	47.3
Queue Length 50th (ft)	5	10	233
Queue Length 95th (ft)	3	23	274
Internal Link Dist (ft)		38	673
Turn Bay Length (ft)			
Base Capacity (vph)	985	1949	1529
Starvation Cap Reductn	482	963	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.71	0.75	0.68
Intersection Summary			

10: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 						  				
Traffic Volume (vph)	285	622	0	0	0	0	0	744	196	0	0	0
Future Volume (vph)	285	622	0	0	0	0	0	744	196	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0						6.0				
Lane Util. Factor	0.91	0.91						0.86				
Frt	1.00	1.00						0.97				
Flt Protected	0.95	0.99						1.00				
Satd. Flow (prot)	1610	3258						6295				
Flt Permitted	0.95	0.99						1.00				
Satd. Flow (perm)	1610	3258						6295				
Peak-hour factor, PHF	0.64	0.95	0.92	0.92	0.92	0.92	0.92	0.91	0.86	0.92	0.92	0.92
Adj. Flow (vph)	445	655	0	0	0	0	0	818	228	0	0	0
RTOR Reduction (vph)	43	43	0	0	0	0	0	35	0	0	0	0
Lane Group Flow (vph)	313	701	0	0	0	0	0	1011	0	0	0	0
Heavy Vehicles (%)	2%	6%	2%	2%	2%	2%	2%	0%	2%	2%	2%	2%
Turn Type	custom	NA						NA				
Protected Phases	4 5 6 8	4 5 6 8						1 2 3				
Permitted Phases	7	7										
Actuated Green, G (s)	80.0	80.0						39.0				
Effective Green, g (s)	80.0	80.0						39.0				
Actuated g/C Ratio	0.59	0.59						0.29				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	1025	2075						1818				
v/s Ratio Prot	0.18	c0.20						c0.16				
v/s Ratio Perm	0.02	0.02										
v/c Ratio	0.31	0.34						0.56				
Uniform Delay, d1	13.7	14.0						40.7				
Progression Factor	0.12	0.21						1.00				
Incremental Delay, d2	0.1	0.0						1.2				
Delay (s)	1.7	3.0						41.9				
Level of Service	A	A						D				
Approach Delay (s)		2.6			0.0			41.9			0.0	
Approach LOS		A			A			D			A	
Intersection Summary												
HCM 2000 Control Delay			21.7					HCM 2000 Level of Service		C		
HCM 2000 Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			135.0					Sum of lost time (s)		40.0		
Intersection Capacity Utilization			50.4%					ICU Level of Service		A		
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	344	714	124	151	226	21
v/c Ratio	0.93	0.93	0.20	0.51	0.15	0.02
Control Delay	63.2	49.0	0.8	20.5	2.7	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.2	49.0	0.8	20.5	2.7	11.3
Queue Length 50th (ft)	146	152	0	31	7	1
Queue Length 95th (ft)	#346	#269	0	m42	m7	5
Internal Link Dist (ft)		364			236	206
Turn Bay Length (ft)						
Base Capacity (vph)	369	765	610	297	1688	1424
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.93	0.20	0.51	0.13	0.01

Intersection Summary

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

Queue shown is maximum after two cycles.

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

11: West Gate Blvd & US 290 WBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations				↙	↕	↗	↙	↕			↕	↗	
Traffic Volume (vph)	0	0	0	449	487	68	279	65	0	0	9	8	
Future Volume (vph)	0	0	0	449	487	68	279	65	0	0	9	8	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				5.5	5.5	5.5	5.5	6.0			6.0		
Lane Util. Factor				0.91	0.91	1.00	0.91	0.91			0.91		
Frbp, ped/bikes				1.00	1.00	0.99	1.00	1.00			1.00		
Flpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00		
Frt				1.00	1.00	0.85	1.00	1.00			0.92		
Flt Protected				0.95	0.99	1.00	0.95	0.97			1.00		
Satd. Flow (prot)				1610	3332	1562	1595	3279			4389		
Flt Permitted				0.95	0.99	1.00	0.74	0.77			1.00		
Satd. Flow (perm)				1610	3332	1562	1246	2613			4389		
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.84	0.55	0.92	0.88	0.92	0.92	0.88	0.75	
Adj. Flow (vph)	0	0	0	478	580	124	303	74	0	0	10	11	
RTOR Reduction (vph)	0	0	0	0	0	97	0	0	0	0	8	0	
Lane Group Flow (vph)	0	0	0	344	714	27	151	226	0	0	13	0	
Confl. Peds. (#/hr)						1							
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	3%	0%	2%	2%	0%	17%	
Turn Type				Perm	NA	Perm	custom	NA			NA		
Protected Phases					4 5			1 2 6 7			1 2		
Permitted Phases				4 5		4 5	6 7						
Actuated Green, G (s)				14.4	14.4	14.4	15.5	39.1			18.1		
Effective Green, g (s)				14.4	14.4	14.4	15.5	28.1			18.1		
Actuated g/C Ratio				0.22	0.22	0.22	0.24	0.43			0.28		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				356	738	346	297	1129			1222		
v/s Ratio Prot											0.00		
v/s Ratio Perm				0.21	0.21	0.02	c0.12	c0.09					
v/c Ratio				0.97	0.97	0.08	0.51	0.20			0.01		
Uniform Delay, d1				25.1	25.1	20.0	21.4	11.5			17.0		
Progression Factor				1.00	1.00	1.00	0.69	0.45			1.00		
Incremental Delay, d2				39.9	26.1	0.4	0.4	0.0			0.0		
Delay (s)				65.0	51.1	20.5	15.3	5.2			17.0		
Level of Service				E	D	C	B	A			B		
Approach Delay (s)		0.0			52.0			9.2			17.0		
Approach LOS		A			D			A			B		
Intersection Summary													
HCM 2000 Control Delay			41.3		HCM 2000 Level of Service						D		
HCM 2000 Volume to Capacity ratio			0.82										
Actuated Cycle Length (s)			65.0		Sum of lost time (s)					34.0			
Intersection Capacity Utilization			66.4%		ICU Level of Service					C			
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	49	633	620	290	48	451
v/c Ratio	0.15	0.94	0.66	0.50	0.09	0.20
Control Delay	23.6	49.6	15.5	5.3	35.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.6	49.6	15.5	5.3	35.8	0.2
Queue Length 50th (ft)	16	120	61	0	21	1
Queue Length 95th (ft)	34	#214	114	43	m24	m1
Internal Link Dist (ft)		52	369			236
Turn Bay Length (ft)						
Base Capacity (vph)	333	671	946	582	517	2197
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.94	0.66	0.50	0.09	0.21

Intersection Summary

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

Queue shown is maximum after two cycles.

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

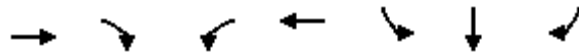
12: West Gate Blvd & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↗	↕						↕	↗	↘	↕		
Traffic Volume (vph)	35	426	125	0	0	0	0	313	529	33	433	0	
Future Volume (vph)	35	426	125	0	0	0	0	313	529	33	433	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.0	6.0						6.0	6.0	5.5	5.5		
Lane Util. Factor	1.00	0.95						0.91	0.91	1.00	0.95		
Frbp, ped/bikes	1.00	1.00						0.99	0.99	1.00	1.00		
Flpb, ped/bikes	1.00	1.00						1.00	1.00	1.00	1.00		
Frt	1.00	0.96						0.93	0.85	1.00	1.00		
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1805	3379						3130	1436	1736	3539		
Flt Permitted	0.95	1.00						1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1805	3379						3130	1436	1736	3539		
Peak-hour factor, PHF	0.72	0.89	0.81	0.92	0.92	0.92	0.92	0.95	0.91	0.69	0.96	0.92	
Adj. Flow (vph)	49	479	154	0	0	0	0	329	581	48	451	0	
RTOR Reduction (vph)	0	52	0	0	0	0	0	222	221	0	0	0	
Lane Group Flow (vph)	49	581	0	0	0	0	0	398	69	48	451	0	
Confl. Peds. (#/hr)			2						1	1			
Heavy Vehicles (%)	0%	2%	4%	2%	2%	2%	2%	3%	1%	4%	2%	2%	
Turn Type	Split	NA						NA	Perm	Prot	NA		
Protected Phases	1 7	1 7						5 6		2 4	2 4 5 6		
Permitted Phases									5 6				
Actuated Green, G (s)	12.0	12.0						15.5	15.5	20.5	41.5		
Effective Green, g (s)	6.5	6.5						15.5	15.5	20.5	35.5		
Actuated g/C Ratio	0.10	0.10						0.24	0.24	0.32	0.55		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)	180	337						746	342	547	1932		
v/s Ratio Prot	0.03	c0.17						c0.13		0.03	c0.13		
v/s Ratio Perm									0.05				
v/c Ratio	0.27	1.72						0.53	0.20	0.09	0.23		
Uniform Delay, d1	27.1	29.2						21.6	19.8	15.7	7.7		
Progression Factor	1.00	1.00						1.00	1.00	2.23	0.03		
Incremental Delay, d2	0.3	337.8						2.7	1.3	0.1	0.1		
Delay (s)	27.4	367.1						24.3	21.1	35.1	0.4		
Level of Service	C	F						C	C	D	A		
Approach Delay (s)		342.7			0.0			23.3			3.7		
Approach LOS		F			A			C			A		
Intersection Summary													
HCM 2000 Control Delay			122.8									HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			0.80										
Actuated Cycle Length (s)			65.0									Sum of lost time (s)	34.0
Intersection Capacity Utilization			66.4%									ICU Level of Service	C
Analysis Period (min)			15										

c Critical Lane Group



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1295	526	137	3635	121	126	462
v/c Ratio	0.40	0.44	0.33	0.89	0.62	0.61	0.30
Control Delay	15.3	2.6	4.2	28.4	89.8	88.4	0.5
Queue Delay	0.0	0.0	0.0	36.3	0.0	0.0	0.0
Total Delay	15.3	2.6	4.2	64.7	89.8	88.4	0.5
Queue Length 50th (ft)	253	14	37	1659	145	151	0
Queue Length 95th (ft)	283	39	m33	m1496	194	129	0
Internal Link Dist (ft)	834			1419		192	
Turn Bay Length (ft)		515	950				
Base Capacity (vph)	3242	1196	413	4096	196	208	1553
Starvation Cap Reductn	0	0	0	725	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.44	0.33	1.08	0.62	0.61	0.30

Intersection Summary

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

13: Capital of Texas Hwy & Mopac SBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗	↖	↑↑↑					↘	↙	↗
Traffic Volume (vph)	0	1243	442	81	3381	0	0	0	0	131	41	420
Future Volume (vph)	0	1243	442	81	3381	0	0	0	0	131	41	420
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0	7.0	7.0					6.5	6.5	4.0
Lane Util. Factor		0.91	1.00	1.00	0.91					0.95	0.95	1.00
Frbp, ped/bikes		1.00	0.99	1.00	1.00					1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.98	1.00
Satd. Flow (prot)		4988	1577	1752	5085					1649	1746	1553
Flt Permitted		1.00	1.00	0.16	1.00					0.95	0.98	1.00
Satd. Flow (perm)		4988	1577	304	5085					1649	1746	1553
Peak-hour factor, PHF	0.92	0.96	0.84	0.59	0.93	0.92	0.92	0.92	0.92	0.78	0.52	0.91
Adj. Flow (vph)	0	1295	526	137	3635	0	0	0	0	168	79	462
RTOR Reduction (vph)	0	0	172	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1295	354	137	3635	0	0	0	0	121	126	462
Confl. Bikes (#/hr)			6									
Heavy Vehicles (%)	2%	4%	1%	3%	2%	2%	2%	2%	2%	4%	0%	4%
Turn Type		NA	Perm	pm+pt	NA					Perm	NA	Free
Protected Phases		2		1	6						8	
Permitted Phases			2	6						8		Free
Actuated Green, G (s)		117.0	117.0	145.0	145.0					21.5	21.5	180.0
Effective Green, g (s)		117.0	117.0	145.0	145.0					21.5	21.5	180.0
Actuated g/C Ratio		0.65	0.65	0.81	0.81					0.12	0.12	1.00
Clearance Time (s)		7.0	7.0	7.0	7.0					6.5	6.5	
Vehicle Extension (s)		4.0	4.0	2.0	4.0					2.0	2.0	
Lane Grp Cap (vph)		3242	1025	413	4096					196	208	1553
v/s Ratio Prot		0.26		0.04	c0.71							
v/s Ratio Perm			0.22	0.23						c0.07	0.07	0.30
v/c Ratio		0.40	0.35	0.33	0.89					0.62	0.61	0.30
Uniform Delay, d1		14.9	14.2	5.9	11.9					75.3	75.2	0.0
Progression Factor		1.00	1.00	0.99	2.22					1.00	1.00	1.00
Incremental Delay, d2		0.4	0.9	0.5	0.8					13.7	12.4	0.5
Delay (s)		15.3	15.1	6.4	27.3					89.1	87.7	0.5
Level of Service		B	B	A	C					F	F	A
Approach Delay (s)		15.2			26.6			0.0			31.1	
Approach LOS		B			C			A			C	
Intersection Summary												
HCM 2000 Control Delay			23.8			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			180.0			Sum of lost time (s)				20.5		
Intersection Capacity Utilization			97.6%			ICU Level of Service				F		
Analysis Period (min)			15									

c Critical Lane Group






















Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	282	1214	2342	2361	1345	160	304
v/c Ratio	0.92	0.49	0.87	1.52	1.28	0.41	0.72
Control Delay	89.1	10.5	51.7	258.5	187.5	65.2	51.2
Queue Delay	0.0	0.0	32.1	0.0	0.0	0.0	0.0
Total Delay	89.1	10.5	83.8	258.5	187.5	65.2	51.2
Queue Length 50th (ft)	286	257	883	~3672	~710	166	215
Queue Length 95th (ft)	#492	265	m751	m#2822	#805	214	242
Internal Link Dist (ft)		1419	756			675	
Turn Bay Length (ft)					300		
Base Capacity (vph)	306	2487	2740	1549	1050	395	421
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	543	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.49	1.07	1.52	1.28	0.41	0.72

Intersection Summary

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

14: Mopac NBFR & Capital of Texas Hwy
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA
 2021 Existing AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	259	1141	0	0	2178	2290	1264	128	228	0	0	0
Future Volume (veh/h)	259	1141	0	0	2178	2290	1264	128	228	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1827	0	0	1863	1845	1881	1900	1863			
Adj Flow Rate, veh/h	282	1214	0	0	2342	0	1345	160	0			
Adj No. of Lanes	1	2	0	0	3	1	3	1	1			
Peak Hour Factor	0.92	0.94	0.92	0.92	0.93	0.97	0.94	0.80	0.75			
Percent Heavy Veh, %	2	4	0	0	2	3	1	0	2			
Cap, veh/h	384	2488	0	0	2478	764	1053	396	330			
Arrive On Green	0.38	1.00	0.00	0.00	0.49	0.00	0.21	0.21	0.00			
Sat Flow, veh/h	1774	3563	0	0	5253	1568	5052	1900	1583			
Grp Volume(v), veh/h	282	1214	0	0	2342	0	1345	160	0			
Grp Sat Flow(s),veh/h/ln	1774	1736	0	0	1695	1568	1684	1900	1583			
Q Serve(g_s), s	19.1	0.0	0.0	0.0	78.8	0.0	37.5	13.1	0.0			
Cycle Q Clear(g_c), s	19.1	0.0	0.0	0.0	78.8	0.0	37.5	13.1	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	384	2488	0	0	2478	764	1053	396	330			
V/C Ratio(X)	0.73	0.49	0.00	0.00	0.95	0.00	1.28	0.40	0.00			
Avail Cap(c_a), veh/h	384	2488	0	0	2740	845	1053	396	330			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.91	0.91	0.00	0.00	1.00	0.00	1.00	1.00	0.00			
Uniform Delay (d), s/veh	49.4	0.0	0.0	0.0	43.9	0.0	71.3	61.6	0.0			
Incr Delay (d2), s/veh	10.9	0.6	0.0	0.0	7.1	0.0	132.4	0.2	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			
%ile BackOfQ(50%),veh/ln	12.7	0.2	0.0	0.0	38.5	0.0	30.4	6.9	0.0			
LnGrp Delay(d),s/veh	60.3	0.6	0.0	0.0	51.0	0.0	203.7	61.8	0.0			
LnGrp LOS	E	A			D		F	E				
Approach Vol, veh/h		1496			2342			1505				
Approach Delay, s/veh		11.9			51.0			188.6				
Approach LOS		B			D			F				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		136.0		44.0	41.3	94.7						
Change Period (Y+Rc), s		7.0		6.5	7.0	7.0						
Max Green Setting (Gmax), s		129.0		37.5	25.0	97.0						
Max Q Clear Time (g_c+I1), s		2.0		39.5	21.1	80.8						
Green Ext Time (p_c), s		3.1		0.0	0.1	6.9						
Intersection Summary												
HCM 2010 Ctrl Delay				78.8								
HCM 2010 LOS				E								



Lane Group	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	124	4478	111	433	3200
v/c Ratio	0.23	1.19	0.09	1.27	0.86
Control Delay	63.3	113.9	3.7	203.1	19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	63.3	113.9	3.7	203.1	19.0
Queue Length 50th (ft)	71	~2328	18	~647	1060
Queue Length 95th (ft)	94	#2323	20	#793	1064
Internal Link Dist (ft)		1281			1273
Turn Bay Length (ft)			430	550	
Base Capacity (vph)	536	3757	1206	340	3721
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.23	1.19	0.09	1.27	0.86

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

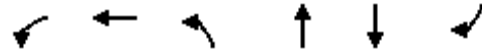
15: Capital of Texas Hwy & Barton Creek Plaza Driveway
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing AM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↔↔	↕↕↕	↗	↖	↕↕↕
Traffic Volume (vph)	0	97	4388	69	364	3040
Future Volume (vph)	0	97	4388	69	364	3040
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	7.0	7.0	6.0	7.0
Lane Util. Factor		0.88	0.91	1.00	1.00	0.91
Frbp, ped/bikes		1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		2842	5085	1615	1805	5036
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		2842	5085	1615	1805	5036
Peak-hour factor, PHF	0.92	0.78	0.98	0.62	0.84	0.95
Adj. Flow (vph)	0	124	4478	111	433	3200
RTOR Reduction (vph)	0	0	0	13	0	0
Lane Group Flow (vph)	0	124	4478	98	433	3200
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	2%	0%	2%	0%	0%	3%
Turn Type		Over	NA	Prot	Prot	NA
Protected Phases		5	6	6	5	6
Permitted Phases						
Actuated Green, G (s)		34.0	133.0	133.0	34.0	133.0
Effective Green, g (s)		34.0	133.0	133.0	34.0	133.0
Actuated g/C Ratio		0.19	0.74	0.74	0.19	0.74
Clearance Time (s)		6.0	7.0	7.0	6.0	7.0
Vehicle Extension (s)		2.0	4.0	4.0	2.0	4.0
Lane Grp Cap (vph)		536	3757	1193	340	3721
v/s Ratio Prot		0.04	c0.88	0.06	c0.24	0.64
v/s Ratio Perm						
v/c Ratio		0.23	1.19	0.08	1.27	0.86
Uniform Delay, d1		61.9	23.5	6.5	73.0	16.8
Progression Factor		1.00	1.00	1.00	1.10	0.94
Incremental Delay, d2		0.1	89.2	0.1	143.9	2.8
Delay (s)		62.0	112.7	6.7	224.1	18.7
Level of Service		E	F	A	F	B
Approach Delay (s)	62.0		110.2			43.2
Approach LOS	E		F			D
Intersection Summary						
HCM 2000 Control Delay			80.3		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.21			
Actuated Cycle Length (s)			180.0		Sum of lost time (s)	13.0
Intersection Capacity Utilization			115.8%		ICU Level of Service	H
Analysis Period (min)			15			

c Critical Lane Group





















Lane Group	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	127	1295	78	218	308	130
v/c Ratio	0.17	0.82	0.19	0.26	0.70	0.26
Control Delay	24.8	39.1	12.1	12.6	55.7	4.0
Queue Delay	0.0	0.0	0.0	1.4	0.0	0.0
Total Delay	24.8	39.1	12.1	14.0	55.7	4.0
Queue Length 50th (ft)	67	523	33	98	243	0
Queue Length 95th (ft)	m112	644	m45	87	289	0
Internal Link Dist (ft)		522		175	200	
Turn Bay Length (ft)			70			90
Base Capacity (vph)	745	1586	545	890	486	527
Starvation Cap Reductn	0	0	0	491	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.82	0.14	0.55	0.63	0.25

Intersection Summary

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

16: US 290 WBFR & Victory Drive
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	112	1064	144	73	135	0	0	234	79
Future Volume (vph)	0	0	0	112	1064	144	73	135	0	0	234	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.5	5.5		5.5	4.5			4.5	4.5
Lane Util. Factor				1.00	0.95		1.00	1.00			1.00	1.00
Frbp, ped/bikes				1.00	1.00		1.00	1.00			1.00	0.98
Flpb, ped/bikes				1.00	1.00		1.00	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1597	3378		1769	1827			1759	1489
Flt Permitted				0.95	1.00		0.25	1.00			1.00	1.00
Satd. Flow (perm)				1597	3378		464	1827			1759	1489
Peak-hour factor, PHF	0.92	0.92	0.92	0.88	0.96	0.77	0.94	0.62	0.92	0.92	0.76	0.61
Adj. Flow (vph)	0	0	0	127	1108	187	78	218	0	0	308	130
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	98
Lane Group Flow (vph)	0	0	0	127	1285	0	78	218	0	0	308	32
Confl. Peds. (#/hr)						6	6					6
Confl. Bikes (#/hr)												4
Heavy Vehicles (%)	2%	2%	2%	13%	3%	11%	2%	4%	2%	2%	8%	6%
Turn Type				Split	NA		pm+pt	NA			NA	Perm
Protected Phases				7 8	7 8		2 10	1 2 6 10			1 6	
Permitted Phases							1 2 6 10					1 6
Actuated Green, G (s)				62.3	62.3		56.7	62.2			33.6	33.6
Effective Green, g (s)				62.3	62.3		46.2	50.7			33.6	33.6
Actuated g/C Ratio				0.46	0.46		0.34	0.38			0.25	0.25
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)				736	1558		324	686			437	370
v/s Ratio Prot				0.08	c0.38		0.03	c0.12			c0.18	
v/s Ratio Perm							0.05					0.02
v/c Ratio				0.17	0.82		0.24	0.32			0.70	0.09
Uniform Delay, d1				21.3	31.6		31.6	29.9			46.2	38.9
Progression Factor				1.09	1.07		0.55	0.55			1.00	1.00
Incremental Delay, d2				0.0	3.5		0.1	0.1			4.2	0.0
Delay (s)				23.1	37.5		17.6	16.4			50.4	39.0
Level of Service				C	D		B	B			D	D
Approach Delay (s)		0.0			36.2			16.7			47.0	
Approach LOS		A			D			B			D	
Intersection Summary												
HCM 2000 Control Delay			35.7		HCM 2000 Level of Service						D	
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			135.0		Sum of lost time (s)						32.0	
Intersection Capacity Utilization			63.5%		ICU Level of Service						B	
Analysis Period (min)			15									
c Critical Lane Group												

























Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1247	148	149	282	96
v/c Ratio	0.76	0.21	0.23	0.41	0.10
Control Delay	52.2	28.3	4.6	5.7	3.4
Queue Delay	0.0	0.0	0.0	0.2	0.8
Total Delay	52.2	28.3	4.6	5.8	4.2
Queue Length 50th (ft)	393	85	0	26	9
Queue Length 95th (ft)	449	125	32	33	m14
Internal Link Dist (ft)	53	253			175
Turn Bay Length (ft)			125	70	
Base Capacity (vph)	1608	746	677	696	928
Starvation Cap Reductn	0	0	0	71	625
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.78	0.20	0.22	0.45	0.32

Intersection Summary

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

17: Pack Saddle Pass & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing AM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  							 	 	 		
Traffic Volume (vph)	70	1001	42	0	0	0	0	127	124	245	86	0	
Future Volume (vph)	70	1001	42	0	0	0	0	127	124	245	86	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.0						4.5	4.5	5.5	4.5		
Lane Util. Factor		0.91						1.00	1.00	1.00	1.00		
Frbp, ped/bikes		1.00						1.00	1.00	1.00	1.00		
Flpb, ped/bikes		1.00						1.00	1.00	1.00	1.00		
Frt		0.99						1.00	0.85	1.00	1.00		
Flt Protected		0.99						1.00	1.00	0.95	1.00		
Satd. Flow (prot)		4923						1845	1455	1702	1583		
Flt Permitted		0.99						1.00	1.00	0.61	1.00		
Satd. Flow (perm)		4923						1845	1455	1098	1583		
Peak-hour factor, PHF	0.54	0.94	0.81	0.92	0.92	0.92	0.92	0.86	0.83	0.87	0.90	0.92	
Adj. Flow (vph)	130	1065	52	0	0	0	0	148	149	282	96	0	
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	99	0	0	0	
Lane Group Flow (vph)	0	1244	0	0	0	0	0	148	50	282	96	0	
Confl. Peds. (#/hr)			3						1	1			
Confl. Bikes (#/hr)			1										
Heavy Vehicles (%)	6%	4%	0%	2%	2%	2%	2%	3%	11%	6%	20%	2%	
Turn Type	Split	NA						NA	Prot	D.P+P	NA		
Protected Phases	8 10	8 10						1 2 6	1 2 6	7	1 2 6 7		
Permitted Phases										1 2 6			
Actuated Green, G (s)		45.0						51.0	51.0	74.0	78.5		
Effective Green, g (s)		45.0						45.5	45.5	69.5	73.0		
Actuated g/C Ratio		0.33						0.34	0.34	0.51	0.54		
Clearance Time (s)										5.5			
Vehicle Extension (s)										1.5			
Lane Grp Cap (vph)		1641						621	490	668	855		
v/s Ratio Prot		c0.25						0.08	0.03	c0.07	0.06		
v/s Ratio Perm										c0.15			
v/c Ratio		0.76						0.24	0.10	0.42	0.11		
Uniform Delay, d1		40.1						32.3	30.7	23.1	15.2		
Progression Factor		1.22						1.00	1.00	0.25	0.26		
Incremental Delay, d2		1.7						0.1	0.0	0.1	0.0		
Delay (s)		50.6						32.3	30.8	5.9	4.0		
Level of Service		D						C	C	A	A		
Approach Delay (s)		50.6			0.0			31.5			5.4		
Approach LOS		D			A			C			A		
Intersection Summary													
HCM 2000 Control Delay			38.8									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.62										
Actuated Cycle Length (s)			135.0									Sum of lost time (s)	32.0
Intersection Capacity Utilization			63.5%									ICU Level of Service	B
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	407	847	649	469	774	929
v/c Ratio	1.58	1.60	1.30	1.59	0.29	1.03
Control Delay	316.1	313.3	174.8	299.3	0.7	89.3
Queue Delay	0.0	0.0	0.0	0.0	0.6	26.0
Total Delay	316.1	313.3	174.8	299.3	1.3	115.3
Queue Length 50th (ft)	~535	~559	~486	~535	8	~299
Queue Length 95th (ft)	#725	#696	#648	#648	10	#363
Internal Link Dist (ft)		53			174	314
Turn Bay Length (ft)						
Base Capacity (vph)	257	530	498	295	2694	898
Starvation Cap Reductn	0	0	0	0	1438	0
Spillback Cap Reductn	0	0	0	0	0	184
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.58	1.60	1.30	1.59	0.62	1.30




















Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

18: US 290 WBFR & Menchaca Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing AM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	0	0	426	718	552	399	712	0	0	658	146	
Future Volume (vph)	0	0	0	426	718	552	399	712	0	0	658	146	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				6.0	6.0	6.0	5.0	5.0			5.0		
Lane Util. Factor				0.91	0.91	1.00	1.00	0.95			0.91		
Frbp, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00		
Flpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00		
Frt				1.00	1.00	0.85	1.00	1.00			0.97		
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00		
Satd. Flow (prot)				1595	3283	1599	1769	3574			4929		
Flt Permitted				0.95	1.00	1.00	0.30	1.00			1.00		
Satd. Flow (perm)				1595	3283	1599	550	3574			4929		
Peak-hour factor, PHF	0.92	0.92	0.92	0.87	0.94	0.85	0.85	0.92	0.92	0.92	0.86	0.89	
Adj. Flow (vph)	0	0	0	490	764	649	469	774	0	0	765	164	
RTOR Reduction (vph)	0	0	0	0	0	241	0	0	0	0	26	0	
Lane Group Flow (vph)	0	0	0	407	847	408	469	774	0	0	903	0	
Confl. Peds. (#/hr)							1					1	
Confl. Bikes (#/hr)												1	
Heavy Vehicles (%)	2%	2%	2%	3%	5%	1%	2%	1%	2%	2%	2%	3%	
Turn Type				Perm	NA	Perm	custom	NA				NA	
Protected Phases					7 8			1 2 6 10				1 6	
Permitted Phases				7 8		7 8	2 10						
Actuated Green, G (s)				21.0	21.0	21.0	70.0	98.0				23.0	
Effective Green, g (s)				21.0	21.0	21.0	70.0	98.0				23.0	
Actuated g/C Ratio				0.16	0.16	0.16	0.54	0.75				0.18	
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				257	530	258	296	2694				872	
v/s Ratio Prot								0.22				c0.18	
v/s Ratio Perm				0.26	0.26	0.26	c0.85						
v/c Ratio				1.58	1.60	1.58	1.58	0.29				1.04	
Uniform Delay, d1				54.5	54.5	54.5	30.0	5.0				53.5	
Progression Factor				1.00	1.00	1.00	0.70	0.11				1.00	
Incremental Delay, d2				280.4	277.9	280.0	274.6	0.0				40.2	
Delay (s)				334.9	332.4	334.5	295.6	0.6				93.7	
Level of Service				F	F	F	F	A				F	
Approach Delay (s)		0.0			333.7			111.9				93.7	
Approach LOS		A			F			F				F	
Intersection Summary													
HCM 2000 Control Delay			211.3		HCM 2000 Level of Service						F		
HCM 2000 Volume to Capacity ratio			1.72										
Actuated Cycle Length (s)			130.0		Sum of lost time (s)					32.0			
Intersection Capacity Utilization			100.5%		ICU Level of Service					G			
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	175	370	171	1594	581	692
v/c Ratio	0.51	0.55	0.40	0.87dr	1.24	0.27
Control Delay	53.0	50.9	9.2	33.7	138.7	6.9
Queue Delay	0.0	0.0	0.0	0.7	3.5	3.3
Total Delay	53.0	50.9	9.2	34.4	142.2	10.2
Queue Length 50th (ft)	133	149	0	399	~590	68
Queue Length 95th (ft)	207	200	62	460	m#429	m57
Internal Link Dist (ft)		62		300		174
Turn Bay Length (ft)						
Base Capacity (vph)	343	674	432	2073	467	2534
Starvation Cap Reductn	0	0	0	0	138	1715
Spillback Cap Reductn	0	0	0	198	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.55	0.40	0.85	1.77	0.84

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.
- dr Defacto Right Lane. Recode with 1 though lane as a right lane.

19: Menchaca Road & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗					↑↑↑		↘	↑↑	
Traffic Volume (vph)	156	329	166	0	0	0	0	919	539	471	678	0
Future Volume (vph)	156	329	166	0	0	0	0	919	539	471	678	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0					5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00					0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99					1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.94		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1787	3505	1533					4808		1787	3505	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1787	3505	1533					4808		1787	3505	
Peak-hour factor, PHF	0.89	0.89	0.97	0.92	0.92	0.92	0.92	0.95	0.86	0.81	0.98	0.92
Adj. Flow (vph)	175	370	171	0	0	0	0	967	627	581	692	0
RTOR Reduction (vph)	0	0	137	0	0	0	0	39	0	0	0	0
Lane Group Flow (vph)	175	370	34	0	0	0	0	1555	0	581	692	0
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	3%	4%	2%	2%	2%	2%	1%	1%	1%	3%	2%
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		8 10						1 2		6 7	1 2 6 7	
Permitted Phases	8 10		8 10									
Actuated Green, G (s)	26.0	26.0	26.0					55.0		33.0	93.0	
Effective Green, g (s)	26.0	26.0	26.0					55.0		33.0	93.0	
Actuated g/C Ratio	0.20	0.20	0.20					0.42		0.25	0.72	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	357	701	306					2034		453	2507	
v/s Ratio Prot		c0.11						c0.32		c0.33	0.20	
v/s Ratio Perm	0.10		0.02									
v/c Ratio	0.49	0.53	0.11					0.87dr		1.28	0.28	
Uniform Delay, d1	46.1	46.5	42.6					32.0		48.5	6.6	
Progression Factor	1.00	1.00	1.00					1.00		0.56	1.10	
Incremental Delay, d2	0.4	0.3	0.1					1.6		128.8	0.0	
Delay (s)	46.5	46.8	42.6					33.6		155.9	7.2	
Level of Service	D	D	D					C		F	A	
Approach Delay (s)		45.8			0.0			33.6			75.1	
Approach LOS		D			A			C			E	

Intersection Summary

HCM 2000 Control Delay	50.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	32.0
Intersection Capacity Utilization	100.5%	ICU Level of Service	G
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

Intersection												
Int Delay, s/veh	8.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	127	106	11	113	3	113	8	82	1	16	24
Future Vol, veh/h	11	127	106	11	113	3	113	8	82	1	16	24
Conflicting Peds, #/hr	15	0	4	4	0	15	9	0	15	15	0	9
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	66	74	95	58	60	76	75	60	60	60	75
Heavy Vehicles, %	0	0	6	0	0	0	11	17	2	0	0	0
Mvmt Flow	22	192	143	12	195	5	149	11	137	2	27	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	215	0	0	339	0	0	572	551	283	634	620	222
Stage 1	-	-	-	-	-	-	312	312	-	237	237	-
Stage 2	-	-	-	-	-	-	260	239	-	397	383	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.21	6.67	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.21	5.67	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.21	5.67	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.599	4.153	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1367	-	-	1231	-	-	418	422	756	395	407	823
Stage 1	-	-	-	-	-	-	680	631	-	771	713	-
Stage 2	-	-	-	-	-	-	725	681	-	633	616	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1347	-	-	1226	-	-	367	402	742	299	387	804
Mov Cap-2 Maneuver	-	-	-	-	-	-	367	402	-	299	387	-
Stage 1	-	-	-	-	-	-	664	616	-	745	695	-
Stage 2	-	-	-	-	-	-	656	664	-	490	601	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			0.4			23.7			12.7		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	481	1347	-	-	1226	-	-	528
HCM Lane V/C Ratio	0.615	0.016	-	-	0.009	-	-	0.114
HCM Control Delay (s)	23.7	7.7	0	-	8	0	-	12.7
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	4.1	0.1	-	-	0	-	-	0.4



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	466	391	1527	606	373	1843
v/c Ratio	0.52	0.50	0.97	0.66	0.96	0.78
Control Delay	45.0	25.8	45.6	7.7	78.7	18.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.0	25.8	45.6	7.7	78.7	18.7
Queue Length 50th (ft)	181	224	737	70	274	543
Queue Length 95th (ft)	224	318	#833	82	#397	638
Internal Link Dist (ft)	497		343			322
Turn Bay Length (ft)		125		275	125	
Base Capacity (vph)	903	788	1588	926	387	2382
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.50	0.96	0.65	0.96	0.77

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

1: S Lamar Blvd & W Oltorf Street
 HCM Signalized Intersection Capacity Analysis

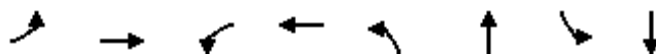
Brodie Oaks Center TIA
 2021 Existing PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶↶	↷	↶↶	↷	↶	↶↶
Traffic Volume (vph)	401	368	1435	515	306	1714
Future Volume (vph)	401	368	1435	515	306	1714
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1615	3574	1542	1787	3574
Flt Permitted	0.95	1.00	1.00	1.00	0.06	1.00
Satd. Flow (perm)	3433	1615	3574	1542	117	3574
Peak-hour factor, PHF	0.86	0.94	0.94	0.85	0.82	0.93
Adj. Flow (vph)	466	391	1527	606	373	1843
RTOR Reduction (vph)	0	5	0	243	0	0
Lane Group Flow (vph)	466	386	1527	363	373	1843
Confl. Peds. (#/hr)		10		6	6	
Confl. Bikes (#/hr)				5		
Heavy Vehicles (%)	2%	0%	1%	2%	1%	1%
Turn Type	Prot	pt+ov	NA	Perm	pm+pt	NA
Protected Phases	4	1 4	2		1	6
Permitted Phases		4		2	6	
Actuated Green, G (s)	35.5	65.5	59.5	59.5	89.5	89.5
Effective Green, g (s)	35.5	65.5	59.5	59.5	89.5	89.5
Actuated g/C Ratio	0.26	0.49	0.44	0.44	0.66	0.66
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	1.0		1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	902	783	1575	679	386	2369
v/s Ratio Prot	0.14	c0.24	0.43		c0.18	0.52
v/s Ratio Perm				0.24	c0.46	
v/c Ratio	0.52	0.49	0.97	0.54	0.97	0.78
Uniform Delay, d1	42.4	23.5	36.9	27.6	45.6	15.8
Progression Factor	1.00	1.00	0.87	0.66	1.00	1.00
Incremental Delay, d2	2.1	2.2	13.2	2.2	38.1	2.6
Delay (s)	44.5	25.7	45.2	20.5	83.7	18.4
Level of Service	D	C	D	C	F	B
Approach Delay (s)	36.0		38.2			29.4
Approach LOS	D		D			C

Intersection Summary

HCM 2000 Control Delay	34.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	114	293	159	106	177	1886	42	1819
v/c Ratio	0.38	0.89	1.05	0.44	0.94	0.80	0.65	0.93
Control Delay	43.6	67.1	131.4	43.9	76.9	22.9	56.7	32.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.6	67.1	131.4	43.9	76.9	22.9	56.7	32.1
Queue Length 50th (ft)	79	179	~127	62	~124	557	22	522
Queue Length 95th (ft)	109	92	#134	94	m#265	704	m34	704
Internal Link Dist (ft)		215		304		217		588
Turn Bay Length (ft)	75		200		50		50	
Base Capacity (vph)	297	374	152	293	188	2349	66	1992
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.78	1.05	0.36	0.94	0.80	0.64	0.91

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

2: S Lamar Blvd & Bluebonnet Lane
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↗	
Traffic Volume (vph)	87	37	184	110	41	46	149	1574	104	30	1744	1
Future Volume (vph)	87	37	184	110	41	46	149	1574	104	30	1744	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	0.97		1.00	0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.89		1.00	0.93		1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1792	1631		1802	1722		1787	3524		1805	3539	
Flt Permitted	0.51	1.00		0.24	1.00		0.05	1.00		0.06	1.00	
Satd. Flow (perm)	964	1631		449	1722		94	3524		117	3539	
Peak-hour factor, PHF	0.76	0.47	0.86	0.69	0.75	0.91	0.84	0.90	0.76	0.72	0.96	0.60
Adj. Flow (vph)	114	79	214	159	55	51	177	1749	137	42	1817	2
RTOR Reduction (vph)	0	75	0	0	25	0	0	4	0	0	0	0
Lane Group Flow (vph)	114	218	0	159	81	0	177	1882	0	42	1819	0
Confl. Peds. (#/hr)	12		12	12		12	8		9	9		8
Confl. Bikes (#/hr)			6			5			12			4
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%	1%	1%	0%	0%	2%	0%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.1	20.9		24.1	16.9		89.9	89.9		74.8	74.8	
Effective Green, g (s)	32.1	20.9		24.1	16.9		89.9	89.9		74.8	74.8	
Actuated g/C Ratio	0.24	0.15		0.18	0.13		0.67	0.67		0.55	0.55	
Clearance Time (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	297	252		152	215		189	2346		64	1960	
v/s Ratio Prot	0.03	c0.13		c0.06	0.05		0.07	c0.53			0.51	
v/s Ratio Perm	0.06			c0.13			c0.55			0.36		
v/c Ratio	0.38	0.86		1.05	0.38		0.94	0.80		0.66	0.93	
Uniform Delay, d1	42.0	55.7		53.7	54.2		44.5	16.2		21.1	27.6	
Progression Factor	1.00	1.00		1.00	1.00		1.18	1.22		0.99	0.91	
Incremental Delay, d2	0.3	24.3		85.7	0.4		39.2	2.0		30.4	6.6	
Delay (s)	42.3	80.0		139.4	54.6		91.7	21.8		51.3	31.8	
Level of Service	D	E		F	D		F	C		D	C	
Approach Delay (s)		69.4			105.5			27.8			32.3	
Approach LOS		E			F			C			C	

Intersection Summary

HCM 2000 Control Delay	37.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	104.6%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	658	1590	612	1835
v/c Ratio	0.77	0.72	1.19	0.78
Control Delay	46.4	14.3	145.4	7.2
Queue Delay	0.0	0.1	0.0	0.2
Total Delay	46.4	14.5	145.4	7.4
Queue Length 50th (ft)	273	701	~661	176
Queue Length 95th (ft)	355	709	m#776	m197
Internal Link Dist (ft)		324		498
Turn Bay Length (ft)			100	
Base Capacity (vph)	857	2206	516	2385
Starvation Cap Reductn	0	95	0	0
Spillback Cap Reductn	0	0	0	106
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.77	0.75	1.19	0.81

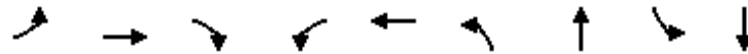
Intersection Summary

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

3: S Lamar Blvd & Menchaca Road
 HCM Signalized Intersection Capacity Analysis



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↔↔	↕↔		↔	↕↕
Traffic Volume (vph)	0	605	1406	21	526	1688
Future Volume (vph)	0	605	1406	21	526	1688
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0	6.0
Lane Util. Factor		0.88	0.95		1.00	0.95
Frbp, ped/bikes		1.00	1.00		1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00
Frt		0.85	1.00		1.00	1.00
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		2814	3564		1787	3539
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		2814	3564		1787	3539
Peak-hour factor, PHF	0.92	0.92	0.90	0.75	0.86	0.92
Adj. Flow (vph)	0	658	1562	28	612	1835
RTOR Reduction (vph)	0	45	1	0	0	0
Lane Group Flow (vph)	0	613	1589	0	612	1835
Confl. Peds. (#/hr)		7		6	6	
Confl. Bikes (#/hr)		1		9		
Heavy Vehicles (%)	2%	1%	1%	0%	1%	2%
Turn Type		pt+ov	NA		Prot	NA
Protected Phases		1 4	2 3		1 4	1 2
Permitted Phases						
Actuated Green, G (s)		39.0	84.0		39.0	90.2
Effective Green, g (s)		39.0	84.0		39.0	90.2
Actuated g/C Ratio		0.29	0.62		0.29	0.67
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		812	2217		516	2364
v/s Ratio Prot		0.22	c0.45		c0.34	c0.52
v/s Ratio Perm						
v/c Ratio		0.76	0.72		1.19	0.78
Uniform Delay, d1		43.7	17.4		48.0	15.4
Progression Factor		1.00	0.72		1.27	0.36
Incremental Delay, d2		3.6	0.7		94.6	1.4
Delay (s)		47.2	13.2		155.5	7.1
Level of Service		D	B		F	A
Approach Delay (s)	47.2		13.2			44.2
Approach LOS	D		B			D
Intersection Summary						
HCM 2000 Control Delay			34.1		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.99			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	24.0
Intersection Capacity Utilization			95.4%		ICU Level of Service	F
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	101	151	194	86	151	195	1510	88	1801
v/c Ratio	0.46	0.45	0.50	0.47	0.24	1.62	0.64	2.51	0.82
Control Delay	57.4	54.4	21.2	59.4	44.6	349.4	10.5	742.4	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3
Total Delay	57.4	54.4	21.2	59.4	44.6	349.4	10.8	742.4	5.6
Queue Length 50th (ft)	80	120	45	68	55	~242	568	~140	184
Queue Length 95th (ft)	134	162	89	127	83	#392	558	m#188	258
Internal Link Dist (ft)		257			238		436		324
Turn Bay Length (ft)	90			100		125		80	
Base Capacity (vph)	220	337	391	183	636	120	2391	35	2181
Starvation Cap Reductn	0	0	0	0	0	0	0	0	66
Spillback Cap Reductn	0	0	0	0	0	0	327	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.45	0.50	0.47	0.24	1.63	0.73	2.51	0.85

Intersection Summary

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

4: S Lamar Blvd & Barton Skyway/Lightsey Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↕		↖	↕		↖	↕	
Traffic Volume (vph)	87	118	153	78	109	14	172	1300	58	66	1559	52
Future Volume (vph)	87	118	153	78	109	14	172	1300	58	66	1559	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1798	1900	1578	1794	3518		1805	3547		1736	3519	
Flt Permitted	0.66	1.00	1.00	0.55	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1242	1900	1578	1032	3518		1805	3547		1736	3519	
Peak-hour factor, PHF	0.86	0.78	0.79	0.91	0.85	0.60	0.88	0.90	0.88	0.75	0.90	0.75
Adj. Flow (vph)	101	151	194	86	128	23	195	1444	66	88	1732	69
RTOR Reduction (vph)	0	0	111	0	11	0	0	2	0	0	2	0
Lane Group Flow (vph)	101	151	83	86	140	0	195	1508	0	88	1799	0
Confl. Peds. (#/hr)	3		5	5		3	5		18	18		5
Confl. Bikes (#/hr)			2						7			8
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	4%	2%	0%
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	
Protected Phases		8			8		5	5 6		7	6 7	
Permitted Phases	8		8	8								
Actuated Green, G (s)	24.0	24.0	24.0	24.0	24.0		9.0	90.2		2.8	84.0	
Effective Green, g (s)	24.0	24.0	24.0	24.0	24.0		9.0	90.2		2.8	84.0	
Actuated g/C Ratio	0.18	0.18	0.18	0.18	0.18		0.07	0.67		0.02	0.62	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0			6.0		
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		1.0			1.0		
Lane Grp Cap (vph)	220	337	280	183	625		120	2369		36	2189	
v/s Ratio Prot		0.08			0.04		c0.11	0.43		c0.05	c0.51	
v/s Ratio Perm	0.08		0.05	c0.08								
v/c Ratio	0.46	0.45	0.30	0.47	0.22		1.62	0.64		2.44	0.82	
Uniform Delay, d1	49.7	49.6	48.2	49.8	47.5		63.0	12.9		66.1	19.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.10	0.73		0.73	0.15	
Incremental Delay, d2	6.8	4.3	2.7	8.4	0.8		309.0	1.0		700.6	1.6	
Delay (s)	56.4	53.8	50.9	58.2	48.4		378.6	10.5		749.1	4.5	
Level of Service	E	D	D	E	D		F	B		F	A	
Approach Delay (s)		53.1			51.9			52.6			39.2	
Approach LOS		D			D			D			D	

Intersection Summary		
HCM 2000 Control Delay	46.7	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.88	D
Actuated Cycle Length (s)	135.0	Sum of lost time (s)
Intersection Capacity Utilization	106.8%	24.0
Analysis Period (min)	15	ICU Level of Service
		G
c Critical Lane Group		



Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	100	136	205	32	1494	134	208	1655
v/c Ratio	0.23	0.35	0.38	0.36	0.78	0.15	1.31	0.74
Control Delay	33.1	43.5	19.3	28.1	27.3	2.1	198.1	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.1	43.5	19.3	28.1	27.3	2.1	198.1	7.1
Queue Length 50th (ft)	53	95	54	15	521	0	~164	80
Queue Length 95th (ft)	68	144	53	32	500	22	m#238	74
Internal Link Dist (ft)	270		212		174			469
Turn Bay Length (ft)		120		95			125	
Base Capacity (vph)	435	385	535	103	2250	995	159	2562
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.35	0.38	0.31	0.66	0.13	1.31	0.65

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.






















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

Queue shown is maximum after two cycles.

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

5: S Lamar Blvd & Private Driveway/Panther Trail
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA
 2021 Existing PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	10	29	103	7	154	25	1419	115	181	1571	13
Future Volume (veh/h)	32	10	29	103	7	154	25	1419	115	181	1571	13
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1815	1900	1900	1881	1863	1827	1881	1900
Adj Flow Rate, veh/h	46	17	37	136	12	192	32	1494	134	208	1636	19
Adj No. of Lanes	0	1	0	1	1	0	1	2	1	1	2	0
Peak Hour Factor	0.70	0.60	0.78	0.76	0.60	0.80	0.79	0.95	0.86	0.87	0.96	0.69
Percent Heavy Veh, %	0	0	0	0	0	5	0	1	2	4	1	0
Cap, veh/h	93	39	54	254	18	294	202	2250	966	253	2600	30
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.63	0.63	0.63	0.05	0.72	0.72
Sat Flow, veh/h	258	189	263	1360	88	1416	306	3574	1534	1740	3618	42
Grp Volume(v), veh/h	100	0	0	136	0	204	32	1494	134	208	807	848
Grp Sat Flow(s),veh/h/ln	710	0	0	1360	0	1504	306	1787	1534	1740	1787	1873
Q Serve(g_s), s	6.3	0.0	0.0	0.0	0.0	16.8	8.1	35.9	4.8	5.6	31.3	31.4
Cycle Q Clear(g_c), s	23.1	0.0	0.0	19.5	0.0	16.8	27.5	35.9	4.8	5.6	31.3	31.4
Prop In Lane	0.46		0.37	1.00		0.94	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	186	0	0	254	0	312	202	2250	966	253	1284	1345
V/C Ratio(X)	0.54	0.00	0.00	0.54	0.00	0.65	0.16	0.66	0.14	0.82	0.63	0.63
Avail Cap(c_a), veh/h	186	0	0	254	0	312	202	2250	966	253	1284	1345
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.9	0.0	0.0	50.1	0.0	49.1	19.9	15.9	10.1	22.1	9.8	9.8
Incr Delay (d2), s/veh	10.7	0.0	0.0	7.9	0.0	10.2	1.7	1.6	0.3	17.9	2.3	2.2
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	4.1	0.0	0.0	5.3	0.0	7.9	0.8	18.1	2.1	6.3	16.1	16.9
LnGrp Delay(d),s/veh	64.6	0.0	0.0	58.0	0.0	59.3	21.6	17.5	10.4	40.0	12.1	12.0
LnGrp LOS	E			E		E	C	B	B	D	B	B
Approach Vol, veh/h		100			340			1660			1863	
Approach Delay, s/veh		64.6			58.8			17.0			15.2	
Approach LOS		E			E			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	12.0	90.0		33.0		102.0		33.0				
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s	7.0	85.0		28.0		97.0		28.0				
Max Q Clear Time (g_c+I1), s	7.6	37.9		25.1		33.4		21.5				
Green Ext Time (p_c), s	0.0	5.2		0.0		4.0		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			20.9									
HCM 2010 LOS			C									

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Private Driveway

Queues

2021 Existing PM



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL2	SBT	NWL	NWR
Lane Group Flow (vph)	323	318	143	127	64	540	162	1528	445	1124
v/c Ratio	1.15	0.78	0.82	0.40	0.30	0.86	1.07	0.50	2.07	1.03
Control Delay	142.9	33.0	75.5	17.9	56.4	55.2	147.1	24.1	525.4	70.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	142.9	33.0	75.5	17.9	56.4	55.2	147.1	24.1	525.4	70.9
Queue Length 50th (ft)	~291	92	98	18	50	424	~150	249	~591	~507
Queue Length 95th (ft)	#442	113	#184	16	93	#617	#276	283	#493	#600
Internal Link Dist (ft)		165		155		240		683	179	
Turn Bay Length (ft)										
Base Capacity (vph)	281	408	174	318	215	629	152	3030	215	1088
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.15	0.78	0.82	0.40	0.30	0.86	1.07	0.50	2.07	1.03

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Private Driveway
 HCM Signalized Intersection Capacity Analysis

2021 Existing PM



Movement	EBL	EBT	EBR2	WBL	WBT	WBR	NBL	NBT	SBL2	SBT	SBR	NWL
Lane Configurations												
Traffic Volume (vph)	265	31	239	136	13	70	56	497	139	1302	86	276
Future Volume (vph)	265	31	239	136	13	70	56	497	139	1302	86	276
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		7.5	5.5	7.0	5.5		7.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	0.86		1.00
Frbp, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	1.00	1.00		1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00
Frt	1.00	0.87		1.00	0.88		1.00	1.00	1.00	0.99		1.00
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	0.95	1.00		0.95
Satd. Flow (prot)	1804	1631		1787	1620		1805	1881	1805	6385		1805
Flt Permitted	0.60	1.00		0.22	1.00		0.95	1.00	0.95	1.00		0.95
Satd. Flow (perm)	1146	1631		407	1620		1805	1881	1805	6385		1805
Peak-hour factor, PHF	0.82	0.72	0.87	0.95	0.55	0.68	0.87	0.92	0.86	0.93	0.67	0.62
Adj. Flow (vph)	323	43	275	143	24	103	64	540	162	1400	128	445
RTOR Reduction (vph)	0	177	0	0	88	0	0	0	0	11	0	0
Lane Group Flow (vph)	323	141	0	143	39	0	64	540	162	1517	0	445
Confl. Peds. (#/hr)	2		1	1		2	10				10	10
Confl. Bikes (#/hr)			1			2					1	
Heavy Vehicles (%)	0%	0%	0%	1%	0%	2%	0%	1%	0%	1%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA	Prot	NA		Prot
Protected Phases	7	4		3	8		5!	2!	1	6		5!
Permitted Phases	4			8								
Actuated Green, G (s)	27.0	18.5		27.0	18.5		15.5	43.5	11.0	61.5		15.5
Effective Green, g (s)	27.0	18.5		27.0	18.5		15.5	43.5	11.0	61.5		15.5
Actuated g/C Ratio	0.21	0.14		0.21	0.14		0.12	0.33	0.08	0.47		0.12
Clearance Time (s)	6.5	6.5		6.5	6.5		7.5	5.5	7.0	5.5		7.5
Vehicle Extension (s)	1.0	3.0		3.0	3.0		3.0	3.0	2.0	2.0		3.0
Lane Grp Cap (vph)	281	232		174	230		215	629	152	3020		215
v/s Ratio Prot	c0.08	0.09		0.05	0.02		0.04	0.29	c0.09	0.24		c0.25
v/s Ratio Perm	c0.16			0.12								
v/c Ratio	1.15	0.61		0.82	0.17		0.30	0.86	1.07	0.50		2.07
Uniform Delay, d1	50.7	52.4		45.9	49.0		52.3	40.4	59.5	23.7		57.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	100.3	11.4		25.7	1.6		0.8	14.2	91.6	0.6		497.1
Delay (s)	150.9	63.7		71.6	50.6		53.1	54.6	151.1	24.3		554.3
Level of Service	F	E		E	D		D	D	F	C		F
Approach Delay (s)		107.7			61.7			54.4		36.4		216.7
Approach LOS		F			E			D		D		F

Intersection Summary

HCM 2000 Control Delay	108.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	33.0
Intersection Capacity Utilization	144.4%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.

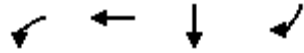
c Critical Lane Group

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Private Driveway
 HCM Signalized Intersection Capacity Analysis

2021 Existing PM



Movement	NWR	NWR2
Lane Configurations	FF	
Traffic Volume (vph)	846	84
Future Volume (vph)	846	84
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.5	
Lane Util. Factor	0.88	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.85	
Flt Protected	1.00	
Satd. Flow (prot)	2842	
Flt Permitted	1.00	
Satd. Flow (perm)	2842	
Peak-hour factor, PHF	0.86	0.60
Adj. Flow (vph)	984	140
RTOR Reduction (vph)	137	0
Lane Group Flow (vph)	987	0
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		2
Heavy Vehicles (%)	0%	0%
Turn Type	Prot	
Protected Phases	2!	
Permitted Phases		
Actuated Green, G (s)	43.5	
Effective Green, g (s)	43.5	
Actuated g/C Ratio	0.33	
Clearance Time (s)	5.5	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	950	
v/s Ratio Prot	c0.35	
v/s Ratio Perm		
v/c Ratio	1.04	
Uniform Delay, d1	43.2	
Progression Factor	1.00	
Incremental Delay, d2	39.8	
Delay (s)	83.0	
Level of Service	F	
Approach Delay (s)		
Approach LOS		
Intersection Summary		



Lane Group	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	534	1125	1252	293
v/c Ratio	0.67	0.70	0.54	0.18
Control Delay	4.6	4.7	35.1	0.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.6	4.7	35.1	0.3
Queue Length 50th (ft)	68	79	251	0
Queue Length 95th (ft)	m2	m8	280	0
Internal Link Dist (ft)		23	453	
Turn Bay Length (ft)				
Base Capacity (vph)	803	1607	2325	1595
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	48	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.67	0.70	0.55	0.18

Intersection Summary

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

7: S Lamar Blvd & Capity of Texas Hwy
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations				↖	↕						↑↑↑	↗		
Traffic Volume (vph)	0	0	0	534	837	0	0	0	0	0	1102	267		
Future Volume (vph)	0	0	0	534	837	0	0	0	0	0	1102	267		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)				6.0	6.0						6.0	4.0		
Lane Util. Factor				0.91	0.91						0.86	1.00		
Frbp, ped/bikes				1.00	1.00						1.00	0.99		
Flpb, ped/bikes				1.00	1.00						1.00	1.00		
Frt				1.00	1.00						1.00	0.85		
Flt Protected				0.95	0.99						1.00	1.00		
Satd. Flow (prot)				1626	3376						6408	1595		
Flt Permitted				0.95	0.99						1.00	1.00		
Satd. Flow (perm)				1626	3376						6408	1595		
Peak-hour factor, PHF	0.92	0.92	0.92	0.82	0.83	0.92	0.92	0.92	0.92	0.92	0.88	0.91		
Adj. Flow (vph)	0	0	0	651	1008	0	0	0	0	0	1252	293		
RTOR Reduction (vph)	0	0	0	56	56	0	0	0	0	0	0	0		
Lane Group Flow (vph)	0	0	0	478	1069	0	0	0	0	0	1252	293		
Confl. Bikes (#/hr)												1		
Heavy Vehicles (%)	2%	2%	2%	1%	2%	0%	2%	2%	2%	2%	2%	0%		
Turn Type				custom	NA						NA	Free		
Protected Phases				1 2 4 8	1 2 4 8						5 6 7			
Permitted Phases				3	3							Free		
Actuated Green, G (s)				63.0	63.0						56.0	135.0		
Effective Green, g (s)				63.0	63.0						56.0	135.0		
Actuated g/C Ratio				0.47	0.47						0.41	1.00		
Clearance Time (s)														
Vehicle Extension (s)														
Lane Grp Cap (vph)				831	1725						2658	1595		
v/s Ratio Prot				0.26	c0.28						c0.20			
v/s Ratio Perm				0.03	0.03							0.18		
v/c Ratio				0.58	0.62						0.47	0.18		
Uniform Delay, d1				26.2	27.0						28.7	0.0		
Progression Factor				0.19	0.19						1.00	1.00		
Incremental Delay, d2				0.2	0.1						0.6	0.3		
Delay (s)				5.2	5.3						29.3	0.3		
Level of Service				A	A						C	A		
Approach Delay (s)		0.0			5.3			0.0			23.8			
Approach LOS		A			A			A			C			
Intersection Summary														
HCM 2000 Control Delay			14.2									HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio			0.73											
Actuated Cycle Length (s)			135.0								40.0		Sum of lost time (s)	
Intersection Capacity Utilization			68.3%										ICU Level of Service	C
Analysis Period (min)			15											

c Critical Lane Group















Lane Group	WBT	NBL	NBT
Lane Group Flow (vph)	1292	284	883
v/c Ratio	1.18	0.29	0.29
Control Delay	131.5	2.7	2.4
Queue Delay	0.5	0.8	0.3
Total Delay	132.0	3.5	2.8
Queue Length 50th (ft)	~500	18	65
Queue Length 95th (ft)	#584	m9	m10
Internal Link Dist (ft)	133		295
Turn Bay Length (ft)			
Base Capacity (vph)	1092	974	2997
Starvation Cap Reductn	0	424	1381
Spillback Cap Reductn	118	2	1
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.33	0.52	0.55

Intersection Summary

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

8: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↑	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1150	0	319	708	0	0	0	0
Future Volume (vph)	0	0	0	0	1150	0	319	708	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0		6.0	6.0				
Lane Util. Factor					0.91		0.86	0.86				
Frt					1.00		1.00	1.00				
Flt Protected					1.00		0.95	0.99				
Satd. Flow (prot)					5085		1537	4867				
Flt Permitted					1.00		0.95	0.99				
Satd. Flow (perm)					5085		1537	4867				
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.89	0.89	0.82	0.91	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1292	0	389	778	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	40	40	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1292	0	244	843	0	0	0	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	0%	2%	2%	2%	2%
Turn Type					NA		custom	NA				
Protected Phases					1 7 8		2 3 4 5	2 3 4 5				
Permitted Phases							6	6				
Actuated Green, G (s)					32.0		85.0	85.0				
Effective Green, g (s)					30.0		83.0	83.0				
Actuated g/C Ratio					0.22		0.61	0.61				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)					1130		1013	3208				
v/s Ratio Prot					c0.25		0.07	c0.08				
v/s Ratio Perm							0.08	0.09				
v/c Ratio					1.14		0.24	0.26				
Uniform Delay, d1					52.5		11.8	11.9				
Progression Factor					0.84		0.47	0.30				
Incremental Delay, d2					75.1		0.0	0.0				
Delay (s)					119.4		5.6	3.6				
Level of Service					F		A	A				
Approach Delay (s)		0.0			119.4			4.1			0.0	
Approach LOS		A			F			A			A	
Intersection Summary												
HCM 2000 Control Delay			64.7				HCM 2000 Level of Service		E			
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			135.0				Sum of lost time (s)		40.0			
Intersection Capacity Utilization			66.2%				ICU Level of Service		C			
Analysis Period (min)			15									
c Critical Lane Group												















Lane Group	EBT	SBL	SBT
Lane Group Flow (vph)	1160	430	1357
v/c Ratio	0.97	0.42	0.43
Control Delay	72.0	2.8	3.2
Queue Delay	14.1	0.3	0.1
Total Delay	86.1	3.1	3.3
Queue Length 50th (ft)	372	0	13
Queue Length 95th (ft)	#463	26	40
Internal Link Dist (ft)	69		291
Turn Bay Length (ft)			
Base Capacity (vph)	1191	1018	3160
Starvation Cap Reductn	0	172	581
Spillback Cap Reductn	66	31	47
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.03	0.51	0.53

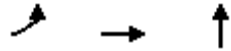
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

9: S Lamar Blvd & Capity of Texas Hwy
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing PM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↑↑↑								↘	↑↑↑		
Traffic Volume (vph)	0	1032	0	0	0	0	0	0	0	574	1033	0	
Future Volume (vph)	0	1032	0	0	0	0	0	0	0	574	1033	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		2.0								6.0	6.0		
Lane Util. Factor		0.91								0.86	0.86		
Frbp, ped/bikes		1.00								1.00	1.00		
Flpb, ped/bikes		1.00								1.00	1.00		
Frt		1.00								1.00	1.00		
Flt Protected		1.00								0.95	0.99		
Satd. Flow (prot)		5187								1522	4846		
Flt Permitted		1.00								0.95	0.99		
Satd. Flow (perm)		5187								1522	4846		
Peak-hour factor, PHF	0.92	0.89	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.88	0.91	0.92	
Adj. Flow (vph)	0	1160	0	0	0	0	0	0	0	652	1135	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	37	37	0	
Lane Group Flow (vph)	0	1160	0	0	0	0	0	0	0	393	1320	0	
Confl. Bikes (#/hr)			1										
Heavy Vehicles (%)	2%	0%	0%	2%	2%	2%	2%	2%	2%	2%	0%	0%	
Turn Type		NA								custom	NA		
Protected Phases		3 4 5								1 2 6 8	1 2 6 8		
Permitted Phases										7	7		
Actuated Green, G (s)		27.0								88.0	88.0		
Effective Green, g (s)		21.0								88.0	88.0		
Actuated g/C Ratio		0.16								0.65	0.65		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)		806								1059	3374		
v/s Ratio Prot		c0.22								0.24	c0.25		
v/s Ratio Perm										0.02	0.02		
v/c Ratio		1.44								0.37	0.39		
Uniform Delay, d1		57.0								10.8	11.0		
Progression Factor		1.00								0.29	0.38		
Incremental Delay, d2		204.7								0.1	0.0		
Delay (s)		261.7								3.2	4.2		
Level of Service		F								A	A		
Approach Delay (s)		261.7			0.0			0.0			4.0		
Approach LOS		F			A			A			A		
Intersection Summary													
HCM 2000 Control Delay			105.4		HCM 2000 Level of Service						F		
HCM 2000 Volume to Capacity ratio			0.71										
Actuated Cycle Length (s)			135.0		Sum of lost time (s)					40.0			
Intersection Capacity Utilization			52.3%		ICU Level of Service					A			
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBL	EBT	NBT
Lane Group Flow (vph)	438	1239	1225
v/c Ratio	0.38	0.52	1.32
Control Delay	0.9	5.1	194.6
Queue Delay	2.9	2.5	0.0
Total Delay	3.7	7.6	194.6
Queue Length 50th (ft)	2	31	~392
Queue Length 95th (ft)	m0	m468	#413
Internal Link Dist (ft)		38	673
Turn Bay Length (ft)			
Base Capacity (vph)	1166	2362	927
Starvation Cap Reductn	599	957	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.77	0.88	1.32

Intersection Summary

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

10: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↖↗						↑↑↑				
Traffic Volume (vph)	433	1154	0	0	0	0	0	759	258	0	0	0
Future Volume (vph)	433	1154	0	0	0	0	0	759	258	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0						6.0				
Lane Util. Factor	0.91	0.91						0.86				
Frbp, ped/bikes	1.00	1.00						1.00				
Flpb, ped/bikes	1.00	1.00						1.00				
Frt	1.00	1.00						0.96				
Flt Protected	0.95	1.00						1.00				
Satd. Flow (prot)	1643	3418						6264				
Flt Permitted	0.95	1.00						1.00				
Satd. Flow (perm)	1643	3418						6264				
Peak-hour factor, PHF	0.89	0.97	0.92	0.92	0.92	0.92	0.92	0.83	0.83	0.92	0.92	0.92
Adj. Flow (vph)	487	1190	0	0	0	0	0	914	311	0	0	0
RTOR Reduction (vph)	45	33	0	0	0	0	0	43	0	0	0	0
Lane Group Flow (vph)	393	1206	0	0	0	0	0	1182	0	0	0	0
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	0%	1%	2%	2%	2%	2%	2%	0%	0%	2%	2%	2%
Turn Type	custom	NA						NA				
Protected Phases	4 5 6 8	4 5 6 8						1 2 3				
Permitted Phases	7	7										
Actuated Green, G (s)	93.0	93.0						26.0				
Effective Green, g (s)	93.0	93.0						26.0				
Actuated g/C Ratio	0.69	0.69						0.19				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	1204	2506						1206				
v/s Ratio Prot	0.22	c0.33						c0.19				
v/s Ratio Perm	0.02	0.02										
v/c Ratio	0.33	0.48						0.98				
Uniform Delay, d1	8.4	9.8						54.2				
Progression Factor	0.08	0.72						1.00				
Incremental Delay, d2	0.0	0.0						21.6				
Delay (s)	0.7	7.0						75.8				
Level of Service	A	A						E				
Approach Delay (s)		5.4			0.0			75.8			0.0	
Approach LOS		A			A			E			A	
Intersection Summary												
HCM 2000 Control Delay			35.1					HCM 2000 Level of Service		D		
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			135.0					Sum of lost time (s)		40.0		
Intersection Capacity Utilization			55.0%					ICU Level of Service		A		
Analysis Period (min)			15									
c Critical Lane Group												






















Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	641	1325	23	136	164	151
v/c Ratio	2.26	2.27	0.06	0.29	0.10	0.11
Control Delay	602.2	603.4	0.3	9.0	1.4	23.8
Queue Delay	0.4	0.2	0.0	0.0	0.0	0.0
Total Delay	602.5	603.5	0.3	9.0	1.4	23.8
Queue Length 50th (ft)	~959	~993	0	20	4	21
Queue Length 95th (ft)	#1182	#1139	0	m19	m4	34
Internal Link Dist (ft)		364			236	206
Turn Bay Length (ft)						
Base Capacity (vph)	284	583	392	544	1651	1376
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	8	13	0	0	0	1
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	2.32	2.32	0.06	0.25	0.10	0.11

Intersection Summary

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

11: West Gate Blvd & US 290 WBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing PM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	0	0	1026	752	16	245	22	0	0	71	38	
Future Volume (vph)	0	0	0	1026	752	16	245	22	0	0	71	38	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				5.5	5.5	5.5	5.5	6.0			6.0		
Lane Util. Factor				0.91	0.91	1.00	0.91	0.91			0.91		
Frbp, ped/bikes				1.00	1.00	0.99	1.00	1.00			0.99		
Flpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00		
Frt				1.00	1.00	0.85	1.00	1.00			0.95		
Flt Protected				0.95	0.98	1.00	0.95	0.96			1.00		
Satd. Flow (prot)				1643	3370	1487	1624	3263			4774		
Flt Permitted				0.95	0.98	1.00	0.65	0.67			1.00		
Satd. Flow (perm)				1643	3370	1487	1115	2276			4774		
Peak-hour factor, PHF	0.92	0.92	0.92	0.88	0.94	0.70	0.90	0.79	0.92	0.92	0.74	0.69	
Adj. Flow (vph)	0	0	0	1166	800	23	272	28	0	0	96	55	
RTOR Reduction (vph)	0	0	0	0	0	19	0	0	0	0	39	0	
Lane Group Flow (vph)	0	0	0	641	1325	4	136	164	0	0	112	0	
Confl. Peds. (#/hr)							2					2	
Confl. Bikes (#/hr)						2							
Heavy Vehicles (%)	2%	2%	2%	0%	1%	7%	1%	5%	2%	2%	0%	6%	
Turn Type				Perm	NA	Perm	custom	NA				NA	
Protected Phases					4 5			1 2 6 7				1 2	
Permitted Phases				4 5		4 5	6 7						
Actuated Green, G (s)				22.0	22.0	22.0	54.1	96.5				36.9	
Effective Green, g (s)				22.0	22.0	22.0	54.1	85.5				36.9	
Actuated g/C Ratio				0.17	0.17	0.17	0.42	0.66				0.28	
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				278	570	251	464	1496				1355	
v/s Ratio Prot												0.02	
v/s Ratio Perm				0.39	0.39	0.00	c0.12	c0.07					
v/c Ratio				2.31	2.32	0.02	0.29	0.11				0.08	
Uniform Delay, d1				54.0	54.0	45.0	25.2	8.2				34.1	
Progression Factor				1.00	1.00	1.00	0.32	0.28				1.00	
Incremental Delay, d2				598.8	601.5	0.1	0.1	0.0				0.0	
Delay (s)				652.8	655.5	45.1	8.2	2.3				34.1	
Level of Service				F	F	D	A	A				C	
Approach Delay (s)		0.0			647.6			5.0				34.1	
Approach LOS		A			F			A				C	
Intersection Summary													
HCM 2000 Control Delay			530.6									HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			0.74										
Actuated Cycle Length (s)			130.0									Sum of lost time (s)	34.0
Intersection Capacity Utilization			81.8%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	27	807	529	247	101	1181
v/c Ratio	0.04	0.68	0.78	0.54	0.16	0.57
Control Delay	26.1	36.7	45.1	10.3	55.9	15.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	31.4
Total Delay	26.1	36.7	45.1	10.3	55.9	47.2
Queue Length 50th (ft)	15	284	171	0	66	221
Queue Length 95th (ft)	25	290	241	57	m33	m4
Internal Link Dist (ft)		52	369			236
Turn Bay Length (ft)						
Base Capacity (vph)	631	1222	682	456	625	2056
Starvation Cap Reductn	0	0	0	0	0	936
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.66	0.78	0.54	0.16	1.05

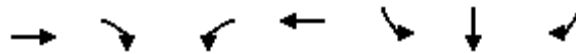
Intersection Summary

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

12: West Gate Blvd & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	18	475	216	0	0	0	0	256	411	83	1039	0	
Future Volume (vph)	18	475	216	0	0	0	0	256	411	83	1039	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.0	6.0						6.0	6.0	5.5	5.5		
Lane Util. Factor	1.00	0.95						0.91	0.91	1.00	0.95		
Frbp, ped/bikes	1.00	1.00						0.99	0.99	1.00	1.00		
Flpb, ped/bikes	1.00	1.00						1.00	1.00	1.00	1.00		
Frt	1.00	0.96						0.93	0.85	1.00	1.00		
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1805	3404						3161	1433	1805	3610		
Flt Permitted	0.95	1.00						1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1805	3404						3161	1433	1805	3610		
Peak-hour factor, PHF	0.67	0.83	0.92	0.92	0.92	0.92	0.92	0.91	0.83	0.82	0.88	0.92	
Adj. Flow (vph)	27	572	235	0	0	0	0	281	495	101	1181	0	
RTOR Reduction (vph)	0	34	0	0	0	0	0	122	202	0	0	0	
Lane Group Flow (vph)	27	773	0	0	0	0	0	407	45	101	1181	0	
Confl. Peds. (#/hr)			1						1	1			
Confl. Bikes (#/hr)			1						1				
Heavy Vehicles (%)	0%	1%	1%	2%	2%	2%	2%	1%	1%	0%	0%	0%	
Turn Type	Split	NA						NA	Perm	Prot	NA		
Protected Phases	1 7	1 7						5 6		2 4	2 4 5 6		
Permitted Phases									5 6				
Actuated Green, G (s)	44.5	44.5						23.5	23.5	45.0	74.0		
Effective Green, g (s)	39.0	39.0						23.5	23.5	45.0	68.0		
Actuated g/C Ratio	0.30	0.30						0.18	0.18	0.35	0.52		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)	541	1021						571	259	624	1888		
v/s Ratio Prot	0.01	c0.23						c0.13		0.06	c0.33		
v/s Ratio Perm									0.03				
v/c Ratio	0.05	0.76						0.71	0.17	0.16	0.63		
Uniform Delay, d1	32.3	41.2						50.1	45.0	29.4	22.0		
Progression Factor	1.00	1.00						1.00	1.00	1.75	0.82		
Incremental Delay, d2	0.0	2.9						7.4	1.4	0.1	0.1		
Delay (s)	32.3	44.1						57.5	46.5	51.6	18.2		
Level of Service	C	D						E	D	D	B		
Approach Delay (s)		43.7			0.0			54.0			20.9		
Approach LOS		D			A			D			C		
Intersection Summary													
HCM 2000 Control Delay			36.3									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.79										
Actuated Cycle Length (s)			130.0									Sum of lost time (s)	34.0
Intersection Capacity Utilization			81.8%									ICU Level of Service	D
Analysis Period (min)			15										
c	Critical Lane Group												



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	2531	1302	216	2409	276	291	277
v/c Ratio	0.78	1.23	0.98	0.61	1.05	1.08	0.17
Control Delay	26.0	139.5	115.4	14.0	140.0	145.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.0	139.5	115.4	14.0	140.0	145.0	0.2
Queue Length 50th (ft)	761	~1835	218	963	~373	~400	0
Queue Length 95th (ft)	810	#2102	m#310	731	#543	#593	0
Internal Link Dist (ft)	834			1419		192	
Turn Bay Length (ft)		515	950				
Base Capacity (vph)	3252	1060	220	3966	262	270	1595
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	1.23	0.98	0.61	1.05	1.08	0.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

13: Capital of Texas Hwy & Mopac SBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗	↘	↑↑↑					↘	↗	↗
Traffic Volume (vph)	0	2430	1224	171	2313	0	0	0	0	286	206	213
Future Volume (vph)	0	2430	1224	171	2313	0	0	0	0	286	206	213
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0	7.0	7.0					6.5	6.5	4.0
Lane Util. Factor		0.91	1.00	1.00	0.91					0.95	0.95	1.00
Frbp, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	0.99
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		5136	1599	1787	5136					1715	1773	1595
Flt Permitted		1.00	1.00	0.03	1.00					0.95	0.99	1.00
Satd. Flow (perm)		5136	1599	62	5136					1715	1773	1595
Peak-hour factor, PHF	0.92	0.96	0.94	0.79	0.96	0.92	0.92	0.92	0.92	0.86	0.88	0.77
Adj. Flow (vph)	0	2531	1302	216	2409	0	0	0	0	333	234	277
RTOR Reduction (vph)	0	0	47	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2531	1255	216	2409	0	0	0	0	276	291	277
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	1%	1%	1%	1%	2%	2%	2%	2%	0%	1%	0%
Turn Type		NA	Perm	pm+pt	NA					Perm	NA	Free
Protected Phases		2		1	6						8	
Permitted Phases			2	6						8		Free
Actuated Green, G (s)		114.0	114.0	139.0	139.0					27.5	27.5	180.0
Effective Green, g (s)		114.0	114.0	139.0	139.0					27.5	27.5	180.0
Actuated g/C Ratio		0.63	0.63	0.77	0.77					0.15	0.15	1.00
Clearance Time (s)		7.0	7.0	7.0	7.0					6.5	6.5	
Vehicle Extension (s)		4.0	4.0	2.0	4.0					2.0	2.0	
Lane Grp Cap (vph)		3252	1012	220	3966					262	270	1595
v/s Ratio Prot		0.49		c0.10	0.47							
v/s Ratio Perm			c0.78	0.66						0.16	0.16	0.17
v/c Ratio		0.78	1.24	0.98	0.61					1.05	1.08	0.17
Uniform Delay, d1		23.9	33.0	66.2	8.8					76.2	76.2	0.0
Progression Factor		1.00	1.00	1.27	1.53					1.00	1.00	1.00
Incremental Delay, d2		1.9	116.4	45.0	0.5					70.3	77.0	0.2
Delay (s)		25.8	149.4	128.9	13.9					146.6	153.2	0.2
Level of Service		C	F	F	B					F	F	A
Approach Delay (s)		67.8			23.3			0.0			100.9	
Approach LOS		E			C			A			F	
Intersection Summary												
HCM 2000 Control Delay			55.6			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			1.18									
Actuated Cycle Length (s)			180.0			Sum of lost time (s)				20.5		
Intersection Capacity Utilization			115.7%			ICU Level of Service				H		
Analysis Period (min)			15									

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	322	2661	1735	1997	908	97	354
v/c Ratio	0.60	1.03	0.84	1.25	0.89	0.25	0.96
Control Delay	37.6	46.5	44.1	136.9	81.4	62.0	93.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.6	46.5	44.1	136.9	81.4	62.0	93.6
Queue Length 50th (ft)	231	~806	612	~1271	371	97	347
Queue Length 95th (ft)	m350	m#870	m597	#1286	403	153	#453
Internal Link Dist (ft)		1419	756			675	
Turn Bay Length (ft)					300		
Base Capacity (vph)	540	2588	2596	1599	1060	395	381
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	1.03	0.67	1.25	0.86	0.25	0.93

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

























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

Queue shown is maximum after two cycles.

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

14: Mopac NBFR & Capital of Texas Hwy
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA
 2021 Existing PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			  		  					
Traffic Volume (veh/h)	283	2501	0	0	1700	1837	781	85	290	0	0	0
Future Volume (veh/h)	283	2501	0	0	1700	1837	781	85	290	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1881	0	0	1881	1881	1900	1900	1881			
Adj Flow Rate, veh/h	322	2661	0	0	1735	0	908	97	0			
Adj No. of Lanes	1	2	0	0	3	1	3	1	1			
Peak Hour Factor	0.88	0.94	0.92	0.92	0.98	0.92	0.86	0.88	0.82			
Percent Heavy Veh, %	2	1	0	0	1	1	0	0	1			
Cap, veh/h	638	2628	0	0	1869	582	969	361	304			
Arrive On Green	0.66	1.00	0.00	0.00	0.36	0.00	0.19	0.19	0.00			
Sat Flow, veh/h	1774	3668	0	0	5305	1599	5103	1900	1599			
Grp Volume(v), veh/h	322	2661	0	0	1735	0	908	97	0			
Grp Sat Flow(s),veh/h/ln	1774	1787	0	0	1712	1599	1701	1900	1599			
Q Serve(g_s), s	9.6	132.3	0.0	0.0	58.4	0.0	31.6	7.8	0.0			
Cycle Q Clear(g_c), s	9.6	132.3	0.0	0.0	58.4	0.0	31.6	7.8	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	638	2628	0	0	1869	582	969	361	304			
V/C Ratio(X)	0.51	1.01	0.00	0.00	0.93	0.00	0.94	0.27	0.00			
Avail Cap(c_a), veh/h	638	2628	0	0	2596	808	1063	396	333			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.49	0.49	0.00	0.00	1.00	0.00	1.00	1.00	0.00			
Uniform Delay (d), s/veh	21.0	0.0	0.0	0.0	55.0	0.0	71.9	62.2	0.0			
Incr Delay (d2), s/veh	1.4	15.6	0.0	0.0	4.3	0.0	13.7	0.1	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			
%ile BackOfQ(50%),veh/ln	7.2	5.7	0.0	0.0	28.4	0.0	16.1	4.1	0.0			
LnGrp Delay(d),s/veh	22.4	15.6	0.0	0.0	59.3	0.0	85.5	62.4	0.0			
LnGrp LOS	C	F			E		F	E				
Approach Vol, veh/h		2983			1735			1005				
Approach Delay, s/veh		16.3			59.3			83.3				
Approach LOS		B			E			F				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		139.3		40.7	66.8	72.5						
Change Period (Y+Rc), s		7.0		6.5	7.0	7.0						
Max Green Setting (Gmax), s		129.0		37.5	31.0	91.0						
Max Q Clear Time (g_c+1), s		134.3		33.6	11.6	60.4						
Green Ext Time (p_c), s		0.0		0.6	0.1	5.1						
Intersection Summary												
HCM 2010 Ctrl Delay				41.1								
HCM 2010 LOS				D								



Lane Group	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	248	3623	50	314	4799
v/c Ratio	0.48	0.95	0.04	0.95	1.25
Control Delay	68.4	27.1	1.5	101.1	142.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	68.4	27.1	1.5	101.1	142.1
Queue Length 50th (ft)	148	1283	0	365	~2603
Queue Length 95th (ft)	170	1329	4	m379	m#2534
Internal Link Dist (ft)		1281			1273
Turn Bay Length (ft)			430	550	
Base Capacity (vph)	538	3824	1169	340	3824
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.46	0.95	0.04	0.92	1.25

Intersection Summary

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

15: Capital of Texas Hwy & Barton Creek Plaza Driveway
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing PM

	↙	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗↗	↑↑↑	↗	↘	↑↑↑
Traffic Volume (vph)	0	191	3369	32	242	4559
Future Volume (vph)	0	191	3369	32	242	4559
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	7.0	7.0	6.0	7.0
Lane Util. Factor		0.88	0.91	1.00	1.00	0.91
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		2842	5136	1553	1805	5136
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		2842	5136	1553	1805	5136
Peak-hour factor, PHF	0.92	0.77	0.93	0.64	0.77	0.95
Adj. Flow (vph)	0	248	3623	50	314	4799
RTOR Reduction (vph)	0	2	0	13	0	0
Lane Group Flow (vph)	0	246	3623	37	314	4799
Heavy Vehicles (%)	2%	0%	1%	4%	0%	1%
Turn Type		Over	NA	Prot	Prot	NA
Protected Phases		5	6	6	5	6
Permitted Phases						
Actuated Green, G (s)		33.0	134.0	134.0	33.0	134.0
Effective Green, g (s)		33.0	134.0	134.0	33.0	134.0
Actuated g/C Ratio		0.18	0.74	0.74	0.18	0.74
Clearance Time (s)		6.0	7.0	7.0	6.0	7.0
Vehicle Extension (s)		2.0	4.0	4.0	2.0	4.0
Lane Grp Cap (vph)		521	3823	1156	330	3823
v/s Ratio Prot		0.09	0.71	0.02	c0.17	c0.93
v/s Ratio Perm						
v/c Ratio		0.47	0.95	0.03	0.95	1.26
Uniform Delay, d1		65.7	20.0	6.0	72.7	23.0
Progression Factor		1.00	1.00	1.00	0.94	1.08
Incremental Delay, d2		0.2	6.7	0.1	32.1	116.7
Delay (s)		66.0	26.6	6.1	100.1	141.6
Level of Service		E	C	A	F	F
Approach Delay (s)	66.0		26.3			139.0
Approach LOS	E		C			F
Intersection Summary						
HCM 2000 Control Delay			91.2		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.19			
Actuated Cycle Length (s)			180.0		Sum of lost time (s)	13.0
Intersection Capacity Utilization			93.9%		ICU Level of Service	F
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	120	1135	111	122	448	76
v/c Ratio	0.13	0.57	0.61	0.19	1.02	0.17
Control Delay	14.6	20.3	36.6	15.4	97.8	3.0
Queue Delay	0.0	0.0	0.0	1.3	13.2	0.0
Total Delay	14.6	20.3	36.6	16.8	111.0	3.0
Queue Length 50th (ft)	48	315	40	44	~423	0
Queue Length 95th (ft)	m79	m379	40	m57	#625	0
Internal Link Dist (ft)		522		175	200	
Turn Bay Length (ft)			70			90
Base Capacity (vph)	925	1986	189	626	440	447
Starvation Cap Reductn	0	0	0	349	0	0
Spillback Cap Reductn	35	0	0	0	17	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.57	0.59	0.44	1.06	0.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.



















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

Queue shown is maximum after two cycles.

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

16: US 290 WBFR & Victory Drive
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	116	957	110	63	96	0	0	399	57
Future Volume (vph)	0	0	0	116	957	110	63	96	0	0	399	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.5	5.5		5.5	4.5			4.5	4.5
Lane Util. Factor				1.00	0.95		1.00	1.00			1.00	1.00
Frbp, ped/bikes				1.00	1.00		1.00	1.00			1.00	0.98
Flpb, ped/bikes				1.00	1.00		1.00	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1612	3448		1805	1827			1792	1476
Flt Permitted				0.95	1.00		0.14	1.00			1.00	1.00
Satd. Flow (perm)				1612	3448		266	1827			1792	1476
Peak-hour factor, PHF	0.92	0.92	0.92	0.97	0.95	0.86	0.57	0.79	0.92	0.92	0.89	0.75
Adj. Flow (vph)	0	0	0	120	1007	128	111	122	0	0	448	76
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	0	0	0	57
Lane Group Flow (vph)	0	0	0	120	1128	0	111	122	0	0	448	19
Confl. Peds. (#/hr)						1	6					6
Confl. Bikes (#/hr)												3
Heavy Vehicles (%)	2%	2%	2%	12%	2%	8%	0%	4%	2%	2%	6%	7%
Turn Type				Split	NA		pm+pt	NA			NA	Perm
Protected Phases				7 8	7 8		2	1 2 6			1 6	
Permitted Phases							1 2 6					1 6
Actuated Green, G (s)				77.0	77.0		42.0	47.5			33.1	33.1
Effective Green, g (s)				77.0	77.0		37.5	42.0			33.1	33.1
Actuated g/C Ratio				0.57	0.57		0.28	0.31			0.25	0.25
Clearance Time (s)							5.5					
Vehicle Extension (s)							1.5					
Lane Grp Cap (vph)				919	1966		175	568			439	361
v/s Ratio Prot				0.07	c0.33		c0.04	0.07			c0.25	
v/s Ratio Perm							0.13					0.01
v/c Ratio				0.13	0.57		0.63	0.21			1.02	0.05
Uniform Delay, d1				13.5	18.5		39.9	34.3			51.0	39.0
Progression Factor				1.07	1.05		0.72	0.48			1.00	1.00
Incremental Delay, d2				0.0	0.3		5.1	0.1			48.2	0.0
Delay (s)				14.4	19.7		33.9	16.6			99.2	39.0
Level of Service				B	B		C	B			F	D
Approach Delay (s)		0.0			19.2			24.8			90.5	
Approach LOS		A			B			C			F	
Intersection Summary												
HCM 2000 Control Delay			38.4									HCM 2000 Level of Service D
HCM 2000 Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			135.0								26.0	
Intersection Capacity Utilization			74.5%									ICU Level of Service D
Analysis Period (min)			15									
c Critical Lane Group												
























Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1889	136	111	441	133
v/c Ratio	0.93	0.20	0.20	0.72	0.14
Control Delay	55.4	31.6	13.7	16.8	3.6
Queue Delay	0.0	0.0	0.0	0.6	1.5
Total Delay	55.4	31.6	13.7	17.4	5.1
Queue Length 50th (ft)	624	83	25	123	12
Queue Length 95th (ft)	m627	118	58	m135	m13
Internal Link Dist (ft)	53	253			175
Turn Bay Length (ft)			125	70	
Base Capacity (vph)	2033	652	549	610	903
Starvation Cap Reductn	0	0	0	29	616
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.93	0.21	0.20	0.76	0.46

Intersection Summary

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

17: Pack Saddle Pass & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing PM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  							 	 			
Traffic Volume (vph)	50	1633	71	0	0	0	0	109	91	384	118	0	
Future Volume (vph)	50	1633	71	0	0	0	0	109	91	384	118	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.0						4.5	4.5	5.5	4.5		
Lane Util. Factor		0.91						1.00	1.00	1.00	1.00		
Frbp, ped/bikes		1.00						1.00	1.00	1.00	1.00		
Flpb, ped/bikes		1.00						1.00	1.00	1.00	1.00		
Frt		0.99						1.00	0.85	1.00	1.00		
Flt Protected		1.00						1.00	1.00	0.95	1.00		
Satd. Flow (prot)		5073						1900	1468	1719	1759		
Flt Permitted		1.00						1.00	1.00	0.62	1.00		
Satd. Flow (perm)		5073						1900	1468	1125	1759		
Peak-hour factor, PHF	0.81	0.94	0.79	0.92	0.92	0.92	0.92	0.80	0.82	0.87	0.89	0.92	
Adj. Flow (vph)	62	1737	90	0	0	0	0	136	111	441	133	0	
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	48	0	0	0	
Lane Group Flow (vph)	0	1885	0	0	0	0	0	136	63	441	133	0	
Confl. Bikes (#/hr)			3						1				
Heavy Vehicles (%)	10%	1%	0%	2%	2%	2%	2%	0%	10%	5%	8%	2%	
Turn Type	Split	NA						NA	Prot	D.P+P	NA		
Protected Phases	8	8						1 2 6	1 2 6	7	1 2 6 7		
Permitted Phases										1 2 6			
Actuated Green, G (s)		54.0						47.5	47.5	65.0	69.5		
Effective Green, g (s)		54.0						42.0	42.0	60.5	64.0		
Actuated g/C Ratio		0.40						0.31	0.31	0.45	0.47		
Clearance Time (s)		6.0								5.5			
Vehicle Extension (s)		1.5								1.5			
Lane Grp Cap (vph)		2029						591	456	581	833		
v/s Ratio Prot		c0.37						0.07	0.04	c0.10	0.08		
v/s Ratio Perm										c0.24			
v/c Ratio		0.93						0.23	0.14	0.76	0.16		
Uniform Delay, d1		38.7						34.5	33.5	34.0	20.2		
Progression Factor		1.23						1.00	1.00	0.46	0.20		
Incremental Delay, d2		6.8						0.1	0.1	2.8	0.0		
Delay (s)		54.5						34.6	33.5	18.4	4.0		
Level of Service		D						C	C	B	A		
Approach Delay (s)		54.5			0.0			34.1			15.1		
Approach LOS		D			A			C			B		
Intersection Summary													
HCM 2000 Control Delay			44.3									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.88										
Actuated Cycle Length (s)			135.0									Sum of lost time (s)	26.0
Intersection Capacity Utilization			74.5%									ICU Level of Service	D
Analysis Period (min)			15										

c Critical Lane Group



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	486	1013	505	301	599	1165
v/c Ratio	1.12	1.13	0.75	0.47	0.25	0.86
Control Delay	130.1	120.4	25.3	10.1	3.5	58.7
Queue Delay	0.1	0.0	0.0	5.2	1.4	0.0
Total Delay	130.2	120.4	25.3	15.3	4.9	58.7
Queue Length 50th (ft)	~600	~628	169	36	23	392
Queue Length 95th (ft)	#849	#771	318	m54	m42	453
Internal Link Dist (ft)		53			174	314
Turn Bay Length (ft)						
Base Capacity (vph)	433	899	669	637	2358	1357
Starvation Cap Reductn	0	0	0	267	1511	0
Spillback Cap Reductn	3	6	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.13	1.13	0.75	0.81	0.71	0.86

Intersection Summary

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

18: US 290 WBFR & Menchaca Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↙	↕	↗	↙	↕			↕	↗
Traffic Volume (vph)	0	0	0	749	660	490	256	545	0	0	937	147
Future Volume (vph)	0	0	0	749	660	490	256	545	0	0	937	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0	6.0	6.0	6.0	5.0			5.0	
Lane Util. Factor				0.91	0.91	1.00	1.00	0.95			0.91	
Frt				1.00	1.00	0.85	1.00	1.00			0.98	
Flt Protected				0.95	0.98	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1626	3372	1615	1805	3574			5025	
Flt Permitted				0.95	0.98	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1626	3372	1615	1805	3574			5025	
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.97	0.85	0.91	0.92	0.92	0.95	0.82
Adj. Flow (vph)	0	0	0	797	702	505	301	599	0	0	986	179
RTOR Reduction (vph)	0	0	0	0	0	237	0	0	0	0	18	0
Lane Group Flow (vph)	0	0	0	486	1013	268	301	599	0	0	1147	0
Heavy Vehicles (%)	2%	2%	2%	1%	1%	0%	0%	1%	2%	2%	1%	0%
Turn Type				Perm	NA	Perm	Prot	NA			NA	
Protected Phases					8 9		4 13	1 4 13				1
Permitted Phases				8 9		8 9						
Actuated Green, G (s)				41.0	41.0	41.0	53.0	98.0			40.0	
Effective Green, g (s)				41.0	41.0	41.0	48.0	98.0			40.0	
Actuated g/C Ratio				0.27	0.27	0.27	0.32	0.65			0.27	
Clearance Time (s)											5.0	
Vehicle Extension (s)											1.0	
Lane Grp Cap (vph)				444	921	441	577	2335			1340	
v/s Ratio Prot							c0.17	0.17			c0.23	
v/s Ratio Perm				0.30	0.30	0.17						
v/c Ratio				1.09	1.10	0.61	0.52	0.26			0.86	
Uniform Delay, d1				54.5	54.5	47.5	41.6	10.8			52.3	
Progression Factor				1.00	1.00	1.00	0.24	0.32			1.00	
Incremental Delay, d2				70.8	60.8	1.6	0.2	0.0			5.4	
Delay (s)				125.3	115.3	49.1	10.1	3.5			57.7	
Level of Service				F	F	D	B	A			E	
Approach Delay (s)		0.0			101.1			5.7			57.7	
Approach LOS		A			F			A			E	
Intersection Summary												
HCM 2000 Control Delay			67.5	HCM 2000 Level of Service				E				
HCM 2000 Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			150.0	Sum of lost time (s)				27.0				
Intersection Capacity Utilization			105.4%	ICU Level of Service				G				
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	185	493	412	1089	514	1365
v/c Ratio	0.67	0.90	1.24	0.99	0.55	0.49
Control Delay	72.9	82.5	167.4	78.6	4.4	0.6
Queue Delay	0.0	0.0	0.0	0.0	7.6	3.4
Total Delay	72.9	82.5	167.4	78.6	12.0	4.0
Queue Length 50th (ft)	173	253	~407	366	24	8
Queue Length 95th (ft)	248	#353	#625	#472	m54	m8
Internal Link Dist (ft)		62		300		174
Turn Bay Length (ft)						
Base Capacity (vph)	276	548	333	1099	932	2763
Starvation Cap Reductn	0	0	0	0	369	1271
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.90	1.24	0.99	0.91	0.91

Intersection Summary

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

19: Menchaca Road & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 2021 Existing PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	159	473	379	0	0	0	0	642	343	437	1283	0	
Future Volume (vph)	159	473	379	0	0	0	0	642	343	437	1283	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.0	6.0	6.0					5.0		5.0	5.0		
Lane Util. Factor	1.00	0.95	1.00					0.91		1.00	0.95		
Frpb, ped/bikes	1.00	1.00	0.99					1.00		1.00	1.00		
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00		
Frt	1.00	1.00	0.85					0.95		1.00	1.00		
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00		
Satd. Flow (prot)	1805	3574	1593					4830		1770	3574		
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00		
Satd. Flow (perm)	1805	3574	1593					4830		1770	3574		
Peak-hour factor, PHF	0.86	0.96	0.92	0.92	0.92	0.92	0.92	0.93	0.86	0.85	0.94	0.92	
Adj. Flow (vph)	185	493	412	0	0	0	0	690	399	514	1365	0	
RTOR Reduction (vph)	0	0	89	0	0	0	0	69	0	0	0	0	
Lane Group Flow (vph)	185	493	323	0	0	0	0	1020	0	514	1365	0	
Confl. Bikes (#/hr)			1							1			
Heavy Vehicles (%)	0%	1%	0%	2%	2%	2%	2%	1%	1%	2%	1%	2%	
Turn Type	Perm	NA	Perm					NA		Prot	NA		
Protected Phases		4 8						13		1 9	1 9 13		
Permitted Phases	4 8		4 8										
Actuated Green, G (s)	23.0	23.0	23.0					32.0		79.0	116.0		
Effective Green, g (s)	23.0	23.0	23.0					32.0		79.0	116.0		
Actuated g/C Ratio	0.15	0.15	0.15					0.21		0.53	0.77		
Clearance Time (s)								5.0					
Vehicle Extension (s)								1.0					
Lane Grp Cap (vph)	276	548	244					1030		932	2763		
v/s Ratio Prot		0.14						c0.21		c0.29	0.38		
v/s Ratio Perm	0.10		c0.20										
v/c Ratio	0.67	0.90	1.32					0.99		0.55	0.49		
Uniform Delay, d1	59.9	62.4	63.5					58.8		23.7	6.2		
Progression Factor	1.00	1.00	1.00					1.00		0.15	0.06		
Incremental Delay, d2	5.0	17.1	171.5					25.8		0.1	0.0		
Delay (s)	64.9	79.5	235.0					84.6		3.6	0.4		
Level of Service	E	E	F					F		A	A		
Approach Delay (s)		135.8			0.0			84.6			1.3		
Approach LOS		F			A			F			A		
Intersection Summary													
HCM 2000 Control Delay			59.8									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			0.86										
Actuated Cycle Length (s)			150.0									Sum of lost time (s)	27.0
Intersection Capacity Utilization			105.4%									ICU Level of Service	G
Analysis Period (min)			15										

c Critical Lane Group

Intersection												
Int Delay, s/veh	10.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	47	89	152	14	86	5	139	14	36	3	21	28
Future Vol, veh/h	47	89	152	14	86	5	139	14	36	3	21	28
Conflicting Peds, #/hr	14	0	9	9	0	14	6	0	11	11	0	6
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	87	87	50	76	50	80	75	60	60	56	75
Heavy Vehicles, %	0	0	7	0	0	0	5	0	0	0	0	0
Mvmt Flow	69	102	175	28	113	10	174	19	60	5	38	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	137	0	0	286	0	0	554	530	210	566	612	138
Stage 1	-	-	-	-	-	-	337	337	-	188	188	-
Stage 2	-	-	-	-	-	-	217	193	-	378	424	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.15	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.545	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1459	-	-	1288	-	-	438	457	835	438	411	916
Stage 1	-	-	-	-	-	-	671	645	-	818	748	-
Stage 2	-	-	-	-	-	-	779	745	-	648	590	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1440	-	-	1277	-	-	358	411	819	359	369	899
Mov Cap-2 Maneuver	-	-	-	-	-	-	358	411	-	359	369	-
Stage 1	-	-	-	-	-	-	627	602	-	760	720	-
Stage 2	-	-	-	-	-	-	687	717	-	542	551	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.5			1.5			25.9			13.4		
HCM LOS							D			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	418	1440	-	-	1277	-	-	508
HCM Lane V/C Ratio	0.604	0.048	-	-	0.022	-	-	0.157
HCM Control Delay (s)	25.9	7.6	0	-	7.9	0	-	13.4
HCM Lane LOS	D	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	3.9	0.2	-	-	0.1	-	-	0.6



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	416	551	2191	345	347	1011
v/c Ratio	0.47	0.94	1.11	0.37	1.87	0.43
Control Delay	44.3	65.6	79.6	2.9	434.6	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.3	65.6	79.6	2.9	434.6	11.2
Queue Length 50th (ft)	159	460	~1153	30	~415	202
Queue Length 95th (ft)	211	#652	#1193	15	#511	245
Internal Link Dist (ft)	497		121			322
Turn Bay Length (ft)		125			125	
Base Capacity (vph)	881	588	1966	934	186	2336
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.94	1.11	0.37	1.87	0.43
















Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

1: S Lamar Blvd & W Oltorf Street
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted AM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		 			 
Traffic Volume (vph)	374	479	1884	276	274	981
Future Volume (vph)	374	479	1884	276	274	981
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1583	3539	1525	1770	3505
Flt Permitted	0.95	1.00	1.00	1.00	0.05	1.00
Satd. Flow (perm)	3400	1583	3539	1525	93	3505
Peak-hour factor, PHF	0.90	0.87	0.86	0.80	0.79	0.97
Adj. Flow (vph)	416	551	2191	345	347	1011
RTOR Reduction (vph)	0	3	0	88	0	0
Lane Group Flow (vph)	416	548	2191	257	347	1011
Confl. Peds. (#/hr)		4		2	2	
Confl. Bikes (#/hr)		1		5		
Heavy Vehicles (%)	3%	2%	2%	4%	2%	3%
Turn Type	Prot	pt+ov	NA	Perm	pm+pt	NA
Protected Phases	4	1 4	2		1	6
Permitted Phases		4		2	6	
Actuated Green, G (s)	35.0	50.0	75.0	75.0	90.0	90.0
Effective Green, g (s)	35.0	50.0	75.0	75.0	90.0	90.0
Actuated g/C Ratio	0.26	0.37	0.56	0.56	0.67	0.67
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	1.0		1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	881	586	1966	847	186	2336
v/s Ratio Prot	0.12	c0.35	0.62		c0.14	0.29
v/s Ratio Perm				0.17	c1.10	
v/c Ratio	0.47	0.94	1.11	0.30	1.87	0.43
Uniform Delay, d1	42.2	41.0	30.0	16.0	47.1	10.5
Progression Factor	1.00	1.00	0.69	0.31	1.00	1.00
Incremental Delay, d2	1.8	24.3	57.1	0.7	409.4	0.6
Delay (s)	44.0	65.3	78.0	5.7	456.4	11.1
Level of Service	D	E	E	A	F	B
Approach Delay (s)	56.1		68.2			124.9
Approach LOS	E		E			F
Intersection Summary						
HCM 2000 Control Delay			81.6		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.65			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			90.5%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	111	242	116	162	2049	85	43	1626
v/c Ratio	0.47	0.56	0.69	0.46	0.83	0.08	0.80	0.93
Control Delay	52.4	30.8	55.3	31.4	12.2	1.8	107.8	47.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.4	30.8	55.3	31.4	12.2	1.8	107.8	47.4
Queue Length 50th (ft)	86	106	57	78	267	1	26	670
Queue Length 95th (ft)	111	121	111	m111	532	m7	#55	678
Internal Link Dist (ft)		215	74		201			588
Turn Bay Length (ft)	75			50		125	50	
Base Capacity (vph)	237	557	359	352	2474	1018	57	1849
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.43	0.32	0.46	0.83	0.08	0.75	0.88

Intersection Summary

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

Queue shown is maximum after two cycles.

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

2: S Lamar Blvd & Bluebonnet Lane
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↘			↘		↗	↑↑	↗	↗	↑↑	
Traffic Volume (vph)	82	31	162	0	37	52	147	1680	69	26	1328	3
Future Volume (vph)	82	31	162	0	37	52	147	1680	69	26	1328	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	0.98			0.99		1.00	1.00	0.96	1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.88			0.92		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1769	1615			1718		1787	3505	1412	1703	3469	
Flt Permitted	0.30	1.00			1.00		0.05	1.00	1.00	0.06	1.00	
Satd. Flow (perm)	567	1615			1718		103	3505	1412	107	3469	
Peak-hour factor, PHF	0.74	0.71	0.82	0.87	0.86	0.71	0.91	0.82	0.81	0.61	0.82	0.50
Adj. Flow (vph)	111	44	198	0	43	73	162	2049	85	43	1620	6
RTOR Reduction (vph)	0	88	0	0	46	0	0	0	21	0	0	0
Lane Group Flow (vph)	111	154	0	0	70	0	162	2049	64	43	1626	0
Confl. Peds. (#/hr)	1		4	4			1	7		6		7
Confl. Bikes (#/hr)							1					1
Heavy Vehicles (%)	2%	0%	2%	3%	0%	0%	1%	3%	10%	6%	4%	0%
Turn Type	pm+pt	NA			NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4						2		2	6		
Actuated Green, G (s)	28.7	28.7			9.6		95.3	95.3	95.3	67.9	67.9	
Effective Green, g (s)	28.7	28.7			9.6		95.3	95.3	95.3	67.9	67.9	
Actuated g/C Ratio	0.21	0.21			0.07		0.71	0.71	0.71	0.50	0.50	
Clearance Time (s)	6.0	6.0			6.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0			2.0		1.0	1.0	1.0	1.0	1.0	
Lane Grp Cap (vph)	237	343			122		352	2474	996	53	1744	
v/s Ratio Prot	0.05	c0.10			0.04		0.08	c0.58			c0.47	
v/s Ratio Perm	c0.05						0.25		0.04	0.40		
v/c Ratio	0.47	0.45			0.57		0.46	0.83	0.06	0.81	0.93	
Uniform Delay, d1	45.0	46.3			60.7		32.8	14.1	6.1	28.2	31.4	
Progression Factor	1.00	1.00			1.00		1.15	0.73	0.98	1.16	1.19	
Incremental Delay, d2	0.5	0.3			4.0		2.1	1.7	0.1	73.7	10.1	
Delay (s)	45.5	46.6			64.7		40.0	11.9	6.0	106.4	47.4	
Level of Service	D	D			E		D	B	A	F	D	
Approach Delay (s)		46.3			64.7			13.7			48.9	
Approach LOS		D			E			B			D	
Intersection Summary												
HCM 2000 Control Delay			30.9				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			135.0				Sum of lost time (s)		22.0			
Intersection Capacity Utilization			93.1%				ICU Level of Service		F			
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	841	1683	8	455	1307
v/c Ratio	0.99	0.78	0.01	0.87	0.58
Control Delay	73.3	12.1	1.0	50.9	15.6
Queue Delay	0.0	0.1	0.0	0.0	0.0
Total Delay	73.3	12.3	1.0	50.9	15.6
Queue Length 50th (ft)	~403	526	0	419	228
Queue Length 95th (ft)	#561	316	m1	m#480	311
Internal Link Dist (ft)		324			498
Turn Bay Length (ft)				100	
Base Capacity (vph)	850	2146	985	523	2314
Starvation Cap Reductn	0	45	0	0	0
Spillback Cap Reductn	0	0	0	0	53
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.99	0.80	0.01	0.87	0.58

Intersection Summary

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

3: S Lamar Blvd & Menchaca Road
 HCM Signalized Intersection Capacity Analysis



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗↗	↕↕	↘	↙	↕↕
Traffic Volume (vph)	0	799	1262	5	387	1163
Future Volume (vph)	0	799	1262	5	387	1163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0
Lane Util. Factor		0.88	0.95	1.00	1.00	0.95
Frbp, ped/bikes		1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		2787	3471	1589	1787	3471
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		2787	3471	1589	1787	3471
Peak-hour factor, PHF	0.92	0.95	0.75	0.60	0.85	0.89
Adj. Flow (vph)	0	841	1683	8	455	1307
RTOR Reduction (vph)	0	34	0	3	0	0
Lane Group Flow (vph)	0	807	1683	5	455	1307
Confl. Peds. (#/hr)		1		4	4	
Heavy Vehicles (%)	2%	2%	4%	0%	1%	4%
Turn Type		pt+ov	NA	Perm	Prot	NA
Protected Phases		1 4	2 3		1 4	1 2
Permitted Phases				2 3		
Actuated Green, G (s)		39.5	83.5	83.5	39.5	88.0
Effective Green, g (s)		39.5	83.5	83.5	39.5	88.0
Actuated g/C Ratio		0.29	0.62	0.62	0.29	0.65
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		815	2146	982	522	2262
v/s Ratio Prot		c0.29	c0.48		0.25	0.38
v/s Ratio Perm				0.00		
v/c Ratio		0.99	0.78	0.01	0.87	0.58
Uniform Delay, d1		47.6	19.1	9.9	45.3	13.1
Progression Factor		1.00	0.51	0.17	0.88	1.15
Incremental Delay, d2		29.0	1.3	0.0	8.3	0.6
Delay (s)		76.5	11.1	1.7	48.0	15.6
Level of Service		E	B	A	D	B
Approach Delay (s)	76.5		11.1			24.0
Approach LOS	E		B			C
Intersection Summary						
HCM 2000 Control Delay			29.2		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.94			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	24.0
Intersection Capacity Utilization			83.0%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						





























Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	173	382	117	166	171	1553	53	50	1304
v/c Ratio	0.79	0.52	0.93	0.25	1.63	0.69	0.05	0.94	0.61
Control Delay	77.3	29.0	117.2	47.6	342.3	18.8	2.4	149.6	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0
Total Delay	77.3	29.0	117.2	47.6	342.3	19.0	2.4	149.6	3.8
Queue Length 50th (ft)	146	84	102	65	~218	389	1	~66	229
Queue Length 95th (ft)	153	127	#136	88	m#296	372	m4	#88	84
Internal Link Dist (ft)		257		238		436			324
Turn Bay Length (ft)	90		100		125		160	100	
Base Capacity (vph)	220	740	126	654	105	2314	1045	53	2143
Starvation Cap Reductn	0	0	0	0	0	0	0	0	23
Spillback Cap Reductn	0	0	0	0	0	215	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.52	0.93	0.25	1.63	0.74	0.05	0.94	0.62

Intersection Summary

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

4: S Lamar Blvd & Barton Skyway/Lightsey Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (vph)	109	128	205	77	128	6	145	1149	49	28	1066	65
Future Volume (vph)	109	128	205	77	128	6	145	1149	49	28	1066	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.91		1.00	0.99		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1748	3228		1799	3523		1787	3471	1531	1805	3440	
Flt Permitted	0.65	1.00		0.36	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1190	3228		683	3523		1787	3471	1531	1805	3440	
Peak-hour factor, PHF	0.63	0.86	0.88	0.66	0.80	0.95	0.85	0.74	0.93	0.56	0.88	0.70
Adj. Flow (vph)	173	149	233	117	160	6	171	1553	53	50	1211	93
RTOR Reduction (vph)	0	143	0	0	2	0	0	0	18	0	4	0
Lane Group Flow (vph)	173	239	0	117	164	0	171	1553	35	50	1300	0
Confl. Peds. (#/hr)	2		4	4		2	2		4	4		2
Confl. Bikes (#/hr)			1						1			2
Heavy Vehicles (%)	3%	1%	0%	0%	1%	25%	1%	4%	4%	0%	4%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		8			8		5	5 6		7	6 7	
Permitted Phases	8			8					5 6			
Actuated Green, G (s)	25.0	25.0		25.0	25.0		8.0	88.0	88.0	4.0	84.0	
Effective Green, g (s)	25.0	25.0		25.0	25.0		8.0	88.0	88.0	4.0	84.0	
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.06	0.65	0.65	0.03	0.62	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0			6.0		
Vehicle Extension (s)	2.0	2.0		2.0	2.0		1.0			1.0		
Lane Grp Cap (vph)	220	597		126	652		105	2262	997	53	2140	
v/s Ratio Prot		0.07			0.05		c0.10	c0.45		0.03	c0.38	
v/s Ratio Perm	0.15			c0.17					0.02			
v/c Ratio	0.79	0.40		0.93	0.25		1.63	0.69	0.03	0.94	0.61	
Uniform Delay, d1	52.5	48.4		54.1	47.0		63.5	14.8	8.4	65.4	15.5	
Progression Factor	1.00	1.00		1.00	1.00		0.90	1.20	2.96	0.67	0.17	
Incremental Delay, d2	24.1	2.0		62.8	0.9		306.5	1.0	0.0	92.4	0.3	
Delay (s)	76.5	50.4		117.0	47.9		363.7	18.8	24.8	136.4	2.9	
Level of Service	E	D		F	D		F	B	C	F	A	
Approach Delay (s)		58.6			76.5			52.1			7.9	
Approach LOS		E			E			D			A	
Intersection Summary												
HCM 2000 Control Delay			39.7				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.83									
Actuated Cycle Length (s)			135.0				Sum of lost time (s)			24.0		
Intersection Capacity Utilization			92.1%				ICU Level of Service			F		
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	99	175	234	25	2056	228	1288
v/c Ratio	0.50	0.68	0.69	0.11	0.82	3.93	0.51
Control Delay	50.0	64.3	53.9	7.0	16.5	1363.9	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.0	64.3	53.9	7.0	16.5	1363.9	8.6
Queue Length 50th (ft)	66	143	165	6	581	~361	316
Queue Length 95th (ft)	79	152	150	12	387	m#426	m324
Internal Link Dist (ft)	270		212		208		469
Turn Bay Length (ft)		120		95		125	
Base Capacity (vph)	197	256	340	238	2505	58	2508
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.68	0.69	0.11	0.82	3.93	0.51

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.




















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

Queue shown is maximum after two cycles.

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

5: S Lamar Blvd & Private Driveway/Panther Trail
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	8	20	112	3	176	17	1297	144	173	1175	19
Future Volume (veh/h)	31	8	20	112	3	176	17	1297	144	173	1175	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1854	1900	1827	1811	1900	1900	1865	1900	1810	1843	1900
Adj Flow Rate, veh/h	55	13	31	175	5	229	25	1853	203	228	1263	25
Adj No. of Lanes	0	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.56	0.62	0.65	0.64	0.60	0.77	0.69	0.70	0.71	0.76	0.93	0.75
Percent Heavy Veh, %	0	0	8	4	0	5	0	2	1	5	3	8
Cap, veh/h	88	25	33	265	7	311	297	2318	249	117	2522	50
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.72	0.72	0.72	0.72	0.72	0.72
Sat Flow, veh/h	226	122	159	1325	33	1499	435	3227	347	197	3510	69
Grp Volume(v), veh/h	99	0	0	175	0	234	25	1002	1054	228	630	658
Grp Sat Flow(s),veh/h/ln	508	0	0	1325	0	1531	435	1771	1802	197	1751	1829
Q Serve(g_s), s	8.0	0.0	0.0	0.0	0.0	19.3	3.6	49.5	53.6	43.4	21.3	21.4
Cycle Q Clear(g_c), s	27.3	0.0	0.0	22.3	0.0	19.3	25.0	49.5	53.6	97.0	21.3	21.4
Prop In Lane	0.56		0.31	1.00		0.98	1.00		0.19	1.00		0.04
Lane Grp Cap(c), veh/h	147	0	0	265	0	318	297	1273	1295	117	1258	1314
V/C Ratio(X)	0.67	0.00	0.00	0.66	0.00	0.74	0.08	0.79	0.81	1.95	0.50	0.50
Avail Cap(c_a), veh/h	147	0	0	265	0	318	297	1273	1295	117	1258	1314
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.1	0.0	0.0	51.3	0.0	50.1	13.9	12.3	12.9	55.7	8.4	8.4
Incr Delay (d2), s/veh	22.1	0.0	0.0	12.2	0.0	14.2	0.6	5.0	5.7	458.4	1.4	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	4.6	0.0	0.0	7.2	0.0	9.4	0.5	25.7	28.4	19.2	10.6	11.1
LnGrp Delay(d),s/veh	80.2	0.0	0.0	63.5	0.0	64.2	14.4	17.3	18.6	514.1	9.8	9.7
LnGrp LOS	F			E		E	B	B	B	F	A	A
Approach Vol, veh/h		99			409			2081			1516	
Approach Delay, s/veh		80.2			63.9			17.9			85.6	
Approach LOS		F			E			B			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		102.0		33.0		102.0		33.0				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		97.0		28.0		97.0		28.0				
Max Q Clear Time (g_c+I1), s		55.6		29.3		99.0		24.3				
Green Ext Time (p_c), s		6.7		0.0		0.0		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				49.0								
HCM 2010 LOS				D								

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Private Driveway

Queues

Phase 1-2026 Forecasted AM



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL2	SBT	NWL	NWR
Lane Group Flow (vph)	313	208	100	127	1113	119	1206	377	1363
v/c Ratio	1.11	0.51	0.48	0.40	0.92	0.82	0.42	1.86	1.27
Control Delay	131.5	12.9	46.8	18.5	54.8	96.2	22.0	435.6	162.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	131.5	12.9	46.8	18.5	54.8	96.2	22.0	435.6	162.2
Queue Length 50th (ft)	~273	8	67	20	473	100	181	~482	~757
Queue Length 95th (ft)	180	7	86	30	322	122	211	#519	#638
Internal Link Dist (ft)		165		155	240		599	179	
Turn Bay Length (ft)						160			
Base Capacity (vph)	281	404	211	321	1207	146	2906	203	1070
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.11	0.51	0.47	0.40	0.92	0.82	0.42	1.86	1.27

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.


























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

Queue shown is maximum after two cycles.

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Private Driveway

HCM Signalized Intersection Capacity Analysis

Phase 1-2026 Forecasted AM

												
Movement	EBL	EBT	EBR2	WBL	WBT	WBR	NBT	SBL2	SBT	SBR	NWL	NWR
Lane Configurations									   			 
Traffic Volume (vph)	166	8	150	68	17	58	668	80	924	111	275	940
Future Volume (vph)	166	8	150	68	17	58	668	80	924	111	275	940
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		5.5	7.0	5.5		7.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		0.95	1.00	0.86		1.00	0.88
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.86		1.00	0.88		1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1804	1633		1770	1657		3610	1736	6092		1703	2790
Flt Permitted	0.60	1.00		0.36	1.00		1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	1135	1633		674	1657		3610	1736	6092		1703	2790
Peak-hour factor, PHF	0.53	0.62	0.77	0.68	0.62	0.58	0.60	0.67	0.90	0.62	0.73	0.74
Adj. Flow (vph)	313	13	195	100	27	100	1113	119	1027	179	377	1270
RTOR Reduction (vph)	0	169	0	0	86	0	0	0	24	0	0	137
Lane Group Flow (vph)	313	39	0	100	41	0	1113	119	1182	0	377	1226
Confl. Peds. (#/hr)	1						1	1		3	3	
Confl. Bikes (#/hr)							1			2		
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	4%	2%	20%	6%	2%
Turn Type	pm+pt	NA		pm+pt	NA		NA	Prot	NA		Prot	Prot
Protected Phases	7	4		3	8		2!	1	6		5	2!
Permitted Phases	4			8								
Actuated Green, G (s)	27.2	18.7		26.8	18.5		43.5	11.0	61.5		15.5	43.5
Effective Green, g (s)	27.2	18.7		26.8	18.5		43.5	11.0	61.5		15.5	43.5
Actuated g/C Ratio	0.21	0.14		0.21	0.14		0.33	0.08	0.47		0.12	0.33
Clearance Time (s)	6.5	6.5		6.5	6.5		5.5	7.0	5.5		7.5	5.5
Vehicle Extension (s)	1.0	3.0		3.0	3.0		3.0	2.0	2.0		3.0	3.0
Lane Grp Cap (vph)	281	234		208	235		1207	146	2881		203	933
v/s Ratio Prot	c0.07	0.02		0.03	0.02		0.31	c0.07	0.19		c0.22	c0.44
v/s Ratio Perm	c0.16			0.07								
v/c Ratio	1.11	0.17		0.48	0.18		0.92	0.82	0.41		1.86	1.31
Uniform Delay, d1	50.6	48.8		43.7	49.0		41.6	58.5	22.4		57.2	43.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	87.8	1.5		1.7	1.6		12.9	37.5	0.4		404.1	148.9
Delay (s)	138.4	50.4		45.4	50.7		54.5	96.0	22.8		461.3	192.2
Level of Service	F	D		D	D		D	F	C		F	F
Approach Delay (s)		103.2			48.4		54.5		29.4		250.5	
Approach LOS		F			D		D		C		F	

Intersection Summary		
HCM 2000 Control Delay	121.9	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	1.29	F
Actuated Cycle Length (s)	130.0	Sum of lost time (s)
Intersection Capacity Utilization	130.1%	33.0
Analysis Period (min)	15	ICU Level of Service
		H

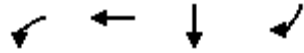
! Phase conflict between lane groups.
 c Critical Lane Group

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Private Driveway
 HCM Signalized Intersection Capacity Analysis

Phase 1-2026 Forecasted AM



Movement	NWR2
Lane Configurations	
Traffic Volume (vph)	51
Future Volume (vph)	51
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frbp, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.55
Adj. Flow (vph)	93
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	1
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



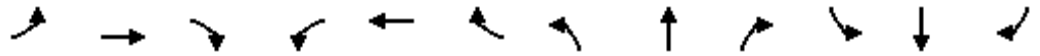
Lane Group	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	533	1704	706	307
v/c Ratio	0.51	0.79	0.59	0.20
Control Delay	1.6	9.9	52.1	0.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	1.6	9.9	52.1	0.3
Queue Length 50th (ft)	3	769	165	0
Queue Length 95th (ft)	m0	m568	194	0
Internal Link Dist (ft)		23	453	
Turn Bay Length (ft)				
Base Capacity (vph)	1043	2168	1187	1564
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.51	0.79	0.59	0.20

Intersection Summary

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

7: S Lamar Blvd & Capity of Texas Hwy
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations				↖	↕						↑↑↑	↗	
Traffic Volume (vph)	0	0	0	497	1530	0	0	0	0	0	614	270	
Future Volume (vph)	0	0	0	497	1530	0	0	0	0	0	614	270	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				6.0	6.0						6.0	4.0	
Lane Util. Factor				0.91	0.91						0.86	1.00	
Frbp, ped/bikes				1.00	1.00						1.00	0.99	
Flpb, ped/bikes				1.00	1.00						1.00	1.00	
Frt				1.00	1.00						1.00	0.85	
Flt Protected				0.95	1.00						1.00	1.00	
Satd. Flow (prot)				1595	3383						6166	1564	
Flt Permitted				0.95	1.00						1.00	1.00	
Satd. Flow (perm)				1595	3383						6166	1564	
Peak-hour factor, PHF	0.92	0.92	0.92	0.84	0.93	0.92	0.92	0.92	0.92	0.92	0.87	0.88	
Adj. Flow (vph)	0	0	0	592	1645	0	0	0	0	0	706	307	
RTOR Reduction (vph)	0	0	0	38	38	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	495	1666	0	0	0	0	0	706	307	
Confl. Peds. (#/hr)												1	
Heavy Vehicles (%)	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	6%	2%	
Turn Type				custom	NA						NA	Free	
Protected Phases				1 2 4 8	1 2 4 8						5 6 7		
Permitted Phases				3	3							Free	
Actuated Green, G (s)				86.0	86.0						33.0	135.0	
Effective Green, g (s)				86.0	86.0						33.0	135.0	
Actuated g/C Ratio				0.64	0.64						0.24	1.00	
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				1086	2305						1507	1564	
v/s Ratio Prot				0.29	0.45						0.11		
v/s Ratio Perm				0.02	0.04							0.20	
v/c Ratio				0.46	0.72						0.47	0.20	
Uniform Delay, d1				12.5	16.5						43.5	0.0	
Progression Factor				0.19	0.78						1.00	1.00	
Incremental Delay, d2				0.0	0.1						1.0	0.3	
Delay (s)				2.4	13.0						44.6	0.3	
Level of Service				A	B						D	A	
Approach Delay (s)		0.0			10.5			0.0			31.1		
Approach LOS		A			B			A			C		
Intersection Summary													
HCM 2000 Control Delay			16.9		HCM 2000 Level of Service						B		
HCM 2000 Volume to Capacity ratio			0.86										
Actuated Cycle Length (s)			135.0		Sum of lost time (s)					40.0			
Intersection Capacity Utilization			71.6%		ICU Level of Service					C			
Analysis Period (min)			15										

c Critical Lane Group















Lane Group	WBT	NBL	NBT
Lane Group Flow (vph)	1758	316	990
v/c Ratio	1.26	0.35	0.37
Control Delay	164.6	1.4	1.9
Queue Delay	0.1	0.4	0.2
Total Delay	164.7	1.8	2.0
Queue Length 50th (ft)	~701	5	7
Queue Length 95th (ft)	m#733	m6	8
Internal Link Dist (ft)	133		295
Turn Bay Length (ft)			
Base Capacity (vph)	1393	898	2673
Starvation Cap Reductn	0	222	686
Spillback Cap Reductn	24	16	23
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.28	0.47	0.50

Intersection Summary

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

8: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted AM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations					↑↑↑		↑	↑↑↑					
Traffic Volume (vph)	0	0	0	0	1670	0	365	681	0	0	0	0	
Future Volume (vph)	0	0	0	0	1670	0	365	681	0	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)					6.0		6.0	6.0					
Lane Util. Factor					0.91		0.86	0.86					
Frbp, ped/bikes					1.00		1.00	1.00					
Flpb, ped/bikes					1.00		1.00	1.00					
Frt					1.00		1.00	1.00					
Flt Protected					1.00		0.95	1.00					
Satd. Flow (prot)					5085		1552	4792					
Flt Permitted					1.00		0.95	1.00					
Satd. Flow (perm)					5085		1552	4792					
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.95	0.79	0.89	0.76	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	0	0	0	0	1758	0	410	896	0	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	0	47	47	0	0	0	0	
Lane Group Flow (vph)	0	0	0	0	1758	0	269	943	0	0	0	0	
Confl. Peds. (#/hr)						1							
Heavy Vehicles (%)	2%	2%	2%	2%	2%	6%	0%	2%	2%	2%	2%	2%	
Turn Type					NA		custom	NA					
Protected Phases					1 7 8		2 3 4 5	2 3 4 5					
Permitted Phases							6	6					
Actuated Green, G (s)					40.0		77.0	77.0					
Effective Green, g (s)					38.0		75.0	75.0					
Actuated g/C Ratio					0.28		0.56	0.56					
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)					1431		931	2875					
v/s Ratio Prot					c0.35		0.12	c0.14					
v/s Ratio Perm							0.05	0.06					
v/c Ratio					1.23		0.29	0.33					
Uniform Delay, d1					48.5		15.9	16.3					
Progression Factor					1.03		0.10	0.15					
Incremental Delay, d2					108.3		0.0	0.0					
Delay (s)					158.4		1.6	2.4					
Level of Service					F		A	A					
Approach Delay (s)		0.0			158.4			2.2			0.0		
Approach LOS		A			F			A			A		
Intersection Summary													
HCM 2000 Control Delay			91.8		HCM 2000 Level of Service				F				
HCM 2000 Volume to Capacity ratio			0.77										
Actuated Cycle Length (s)			135.0		Sum of lost time (s)				40.0				
Intersection Capacity Utilization			76.9%		ICU Level of Service				D				
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBT	SBL	SBT
Lane Group Flow (vph)	873	322	1006
v/c Ratio	0.91	0.34	0.33
Control Delay	67.4	2.3	2.0
Queue Delay	0.8	0.5	0.2
Total Delay	68.2	2.8	2.2
Queue Length 50th (ft)	277	1	5
Queue Length 95th (ft)	#354	m2	8
Internal Link Dist (ft)	69		291
Turn Bay Length (ft)			
Base Capacity (vph)	960	943	3046
Starvation Cap Reductn	0	300	1085
Spillback Cap Reductn	13	12	19
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.92	0.50	0.51

Intersection Summary

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

Queue shown is maximum after two cycles.

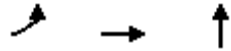
m Volume for 95th percentile queue is metered by upstream signal.

9: S Lamar Blvd & Capity of Texas Hwy
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↑↑↑								↘	↑↑↑		
Traffic Volume (vph)	0	794	0	0	0	0	0	0	0	325	830	0	
Future Volume (vph)	0	794	0	0	0	0	0	0	0	325	830	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.0								6.0	6.0		
Lane Util. Factor		0.91								0.86	0.86		
Frbp, ped/bikes		1.00								1.00	1.00		
Flpb, ped/bikes		1.00								1.00	1.00		
Frt		1.00								1.00	1.00		
Flt Protected		1.00								0.95	1.00		
Satd. Flow (prot)		4988								1437	4779		
Flt Permitted		1.00								0.95	1.00		
Satd. Flow (perm)		4988								1437	4779		
Peak-hour factor, PHF	0.92	0.91	0.88	0.92	0.92	0.92	0.92	0.92	0.92	0.87	0.87	0.92	
Adj. Flow (vph)	0	873	0	0	0	0	0	0	0	374	954	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	38	38	0	
Lane Group Flow (vph)	0	873	0	0	0	0	0	0	0	284	968	0	
Confl. Bikes (#/hr)			1										
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	8%	2%	2%	
Turn Type		NA								custom	NA		
Protected Phases		4 5								1 2 6 8	1 2 6 8		
Permitted Phases										7	7		
Actuated Green, G (s)		26.0								86.0	86.0		
Effective Green, g (s)		26.0								86.0	86.0		
Actuated g/C Ratio		0.19								0.64	0.64		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)		960								979	3256		
v/s Ratio Prot		c0.18								0.18	c0.19		
v/s Ratio Perm										0.02	0.02		
v/c Ratio		0.91								0.29	0.30		
Uniform Delay, d1		53.3								10.9	11.0		
Progression Factor		1.00								0.27	0.24		
Incremental Delay, d2		11.9								0.1	0.0		
Delay (s)		65.3								3.0	2.6		
Level of Service		E								A	A		
Approach Delay (s)		65.3			0.0			0.0			2.7		
Approach LOS		E			A			A			A		
Intersection Summary													
HCM 2000 Control Delay			27.5		HCM 2000 Level of Service						C		
HCM 2000 Volume to Capacity ratio			0.54										
Actuated Cycle Length (s)			135.0		Sum of lost time (s)					40.0			
Intersection Capacity Utilization			64.6%		ICU Level of Service					C			
Analysis Period (min)			15										
c Critical Lane Group													





















Lane Group	EBL	EBT	NBT
Lane Group Flow (vph)	433	901	1264
v/c Ratio	0.44	0.46	0.83
Control Delay	2.5	3.3	52.3
Queue Delay	4.1	3.2	0.0
Total Delay	6.6	6.5	52.3
Queue Length 50th (ft)	8	19	296
Queue Length 95th (ft)	5	m30	341
Internal Link Dist (ft)		38	673
Turn Bay Length (ft)			
Base Capacity (vph)	985	1949	1529
Starvation Cap Reductn	460	918	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.82	0.87	0.83

Intersection Summary

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

10: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 						  				
Traffic Volume (vph)	330	777	0	0	0	0	0	888	248	0	0	0
Future Volume (vph)	330	777	0	0	0	0	0	888	248	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0						6.0				
Lane Util. Factor	0.91	0.91						0.86				
Frt	1.00	1.00						0.97				
Flt Protected	0.95	1.00						1.00				
Satd. Flow (prot)	1610	3259						6284				
Flt Permitted	0.95	1.00						1.00				
Satd. Flow (perm)	1610	3259						6284				
Peak-hour factor, PHF	0.64	0.95	0.92	0.92	0.92	0.92	0.92	0.91	0.86	0.92	0.92	0.92
Adj. Flow (vph)	516	818	0	0	0	0	0	976	288	0	0	0
RTOR Reduction (vph)	43	43	0	0	0	0	0	37	0	0	0	0
Lane Group Flow (vph)	390	858	0	0	0	0	0	1227	0	0	0	0
Heavy Vehicles (%)	2%	6%	2%	2%	2%	2%	2%	0%	2%	2%	2%	2%
Turn Type	custom	NA						NA				
Protected Phases	4 5 6 8	4 5 6 8						1 2 3				
Permitted Phases	7	7										
Actuated Green, G (s)	80.0	80.0						39.0				
Effective Green, g (s)	80.0	80.0						39.0				
Actuated g/C Ratio	0.59	0.59						0.29				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	1025	2076						1815				
v/s Ratio Prot	0.22	c0.24						c0.20				
v/s Ratio Perm	0.02	0.02										
v/c Ratio	0.38	0.41						0.68				
Uniform Delay, d1	14.5	14.8						42.4				
Progression Factor	0.18	0.27						1.00				
Incremental Delay, d2	0.1	0.0						2.0				
Delay (s)	2.6	4.0						44.5				
Level of Service	A	A						D				
Approach Delay (s)		3.5			0.0			44.5			0.0	
Approach LOS		A			A			D			A	
Intersection Summary												
HCM 2000 Control Delay			23.5					HCM 2000 Level of Service		C		
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			135.0					Sum of lost time (s)		40.0		
Intersection Capacity Utilization			57.7%					ICU Level of Service		B		
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	399	836	144	176	262	25
v/c Ratio	1.17	1.18	0.24	0.60	0.17	0.02
Control Delay	131.6	123.1	1.0	22.2	2.4	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	131.6	123.1	1.0	22.2	2.4	11.1
Queue Length 50th (ft)	~216	~228	0	36	7	1
Queue Length 95th (ft)	#407	#328	0	m45	m7	6
Internal Link Dist (ft)		364			236	206
Turn Bay Length (ft)						
Base Capacity (vph)	342	709	589	295	1678	1445
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.17	1.18	0.24	0.60	0.16	0.02

Intersection Summary

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

11: West Gate Blvd & US 290 WBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations				↙	↕	↗	↙	↕			↕	↗	
Traffic Volume (vph)	0	0	0	521	572	79	324	76	0	0	11	9	
Future Volume (vph)	0	0	0	521	572	79	324	76	0	0	11	9	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				5.5	5.5	5.5	5.5	6.0			6.0		
Lane Util. Factor				0.91	0.91	1.00	0.91	0.91			0.91		
Frbp, ped/bikes				1.00	1.00	0.99	1.00	1.00			1.00		
Flpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00		
Frt				1.00	1.00	0.85	1.00	1.00			0.93		
Flt Protected				0.95	0.99	1.00	0.95	0.97			1.00		
Satd. Flow (prot)				1610	3332	1562	1595	3280			4450		
Flt Permitted				0.95	0.99	1.00	0.74	0.77			1.00		
Satd. Flow (perm)				1610	3332	1562	1241	2596			4450		
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.84	0.55	0.92	0.88	0.92	0.92	0.88	0.75	
Adj. Flow (vph)	0	0	0	554	681	144	352	86	0	0	12	12	
RTOR Reduction (vph)	0	0	0	0	0	115	0	0	0	0	8	0	
Lane Group Flow (vph)	0	0	0	399	836	29	176	262	0	0	17	0	
Confl. Peds. (#/hr)						1							
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	3%	0%	2%	2%	0%	17%	
Turn Type				Perm	NA	Perm	custom	NA			NA		
Protected Phases					4 5			1 2 6 7			1 2		
Permitted Phases				4 5		4 5	6 7						
Actuated Green, G (s)				13.3	13.3	13.3	15.5	40.2			19.2		
Effective Green, g (s)				13.3	13.3	13.3	15.5	29.2			19.2		
Actuated g/C Ratio				0.20	0.20	0.20	0.24	0.45			0.30		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				329	681	319	295	1166			1314		
v/s Ratio Prot											0.00		
v/s Ratio Perm				0.25	0.25	0.02	c0.14	c0.10					
v/c Ratio				1.21	1.23	0.09	0.60	0.22			0.01		
Uniform Delay, d1				25.9	25.9	21.0	22.0	11.0			16.2		
Progression Factor				1.00	1.00	1.00	0.67	0.43			1.00		
Incremental Delay, d2				120.5	115.1	0.6	1.6	0.0			0.0		
Delay (s)				146.4	141.0	21.5	16.4	4.8			16.2		
Level of Service				F	F	C	B	A			B		
Approach Delay (s)		0.0			130.1			9.4			16.2		
Approach LOS		A			F			A			B		
Intersection Summary													
HCM 2000 Control Delay			99.8		HCM 2000 Level of Service						F		
HCM 2000 Volume to Capacity ratio			0.96										
Actuated Cycle Length (s)			65.0		Sum of lost time (s)					34.0			
Intersection Capacity Utilization			75.9%		ICU Level of Service					D			
Analysis Period (min)			15										
c Critical Lane Group													

























Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	56	755	719	338	57	523
v/c Ratio	0.17	1.13	0.74	0.57	0.10	0.23
Control Delay	23.9	101.7	18.1	7.2	35.4	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.9	101.7	18.1	7.2	35.4	0.4
Queue Length 50th (ft)	19	~177	77	0	25	1
Queue Length 95th (ft)	37	#277	139	64	m22	m1
Internal Link Dist (ft)		52	369			236
Turn Bay Length (ft)						
Base Capacity (vph)	333	670	968	591	491	2143
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.17	1.13	0.74	0.57	0.12	0.24

Intersection Summary

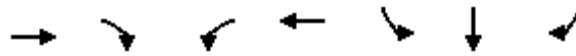
- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

12: West Gate Blvd & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted AM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 						 		 	 		
Traffic Volume (vph)	40	513	145	0	0	0	0	362	615	39	502	0	
Future Volume (vph)	40	513	145	0	0	0	0	362	615	39	502	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.0	6.0						6.0	6.0	5.5	5.5		
Lane Util. Factor	1.00	0.95						0.91	0.91	1.00	0.95		
Frbp, ped/bikes	1.00	1.00						0.99	0.99	1.00	1.00		
Flpb, ped/bikes	1.00	1.00						1.00	1.00	1.00	1.00		
Frt	1.00	0.96						0.93	0.85	1.00	1.00		
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1805	3383						3130	1436	1736	3539		
Flt Permitted	0.95	1.00						1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1805	3383						3130	1436	1736	3539		
Peak-hour factor, PHF	0.72	0.89	0.81	0.92	0.92	0.92	0.92	0.95	0.91	0.69	0.96	0.92	
Adj. Flow (vph)	56	576	179	0	0	0	0	381	676	57	523	0	
RTOR Reduction (vph)	0	50	0	0	0	0	0	244	257	0	0	0	
Lane Group Flow (vph)	56	705	0	0	0	0	0	475	81	57	523	0	
Confl. Peds. (#/hr)			2						1	1			
Heavy Vehicles (%)	0%	2%	4%	2%	2%	2%	2%	3%	1%	4%	2%	2%	
Turn Type	Split	NA						NA	Perm	Prot	NA		
Protected Phases	1 7	1 7						5 6		2 4	2 4 5 6		
Permitted Phases									5 6				
Actuated Green, G (s)	12.0	12.0						15.5	15.5	20.5	41.5		
Effective Green, g (s)	6.5	6.5						15.5	15.5	20.5	35.5		
Actuated g/C Ratio	0.10	0.10						0.24	0.24	0.32	0.55		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)	180	338						746	342	547	1932		
v/s Ratio Prot	0.03	c0.21						c0.15		0.03	c0.15		
v/s Ratio Perm									0.06				
v/c Ratio	0.31	2.08						0.64	0.24	0.10	0.27		
Uniform Delay, d1	27.2	29.2						22.2	20.0	15.8	7.9		
Progression Factor	1.00	1.00						1.00	1.00	2.20	0.08		
Incremental Delay, d2	0.4	498.1						4.1	1.6	0.0	0.0		
Delay (s)	27.5	527.4						26.4	21.6	34.6	0.6		
Level of Service	C	F						C	C	C	A		
Approach Delay (s)		492.8			0.0			24.8			4.0		
Approach LOS		F			A			C			A		
Intersection Summary													
HCM 2000 Control Delay			174.9									HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			0.96										
Actuated Cycle Length (s)			65.0									Sum of lost time (s)	34.0
Intersection Capacity Utilization			75.9%									ICU Level of Service	D
Analysis Period (min)			15										

c Critical Lane Group



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1521	610	168	4223	149	153	535
v/c Ratio	0.47	0.53	0.47	1.03	0.76	0.74	0.34
Control Delay	16.4	6.9	6.7	47.1	100.4	97.5	0.6
Queue Delay	0.0	0.0	0.0	29.2	0.0	0.0	0.0
Total Delay	16.4	6.9	6.7	76.3	100.4	97.5	0.6
Queue Length 50th (ft)	317	116	47	~1990	183	187	0
Queue Length 95th (ft)	349	160	m38	m1708	233	152	0
Internal Link Dist (ft)	834			1419		192	
Turn Bay Length (ft)		515	950				
Base Capacity (vph)	3242	1161	359	4096	196	207	1553
Starvation Cap Reductn	0	0	0	722	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.53	0.47	1.25	0.76	0.74	0.34

Intersection Summary

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

13: Capital of Texas Hwy & Mopac SBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗	↘	↑↑↑					↘	↗	↗
Traffic Volume (vph)	0	1460	512	99	3927	0	0	0	0	164	48	487
Future Volume (vph)	0	1460	512	99	3927	0	0	0	0	164	48	487
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0	7.0	7.0					6.5	6.5	4.0
Lane Util. Factor		0.91	1.00	1.00	0.91					0.95	0.95	1.00
Frbp, ped/bikes		1.00	0.99	1.00	1.00					1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.98	1.00
Satd. Flow (prot)		4988	1577	1752	5085					1649	1742	1553
Flt Permitted		1.00	1.00	0.12	1.00					0.95	0.98	1.00
Satd. Flow (perm)		4988	1577	226	5085					1649	1742	1553
Peak-hour factor, PHF	0.92	0.96	0.84	0.59	0.93	0.92	0.92	0.92	0.92	0.78	0.52	0.91
Adj. Flow (vph)	0	1521	610	168	4223	0	0	0	0	210	92	535
RTOR Reduction (vph)	0	0	137	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1521	474	168	4223	0	0	0	0	149	153	535
Confl. Bikes (#/hr)			6									
Heavy Vehicles (%)	2%	4%	1%	3%	2%	2%	2%	2%	2%	4%	0%	4%
Turn Type		NA	Perm	pm+pt	NA					Perm	NA	Free
Protected Phases		2		1	6						8	
Permitted Phases			2	6						8		Free
Actuated Green, G (s)		117.0	117.0	145.0	145.0					21.5	21.5	180.0
Effective Green, g (s)		117.0	117.0	145.0	145.0					21.5	21.5	180.0
Actuated g/C Ratio		0.65	0.65	0.81	0.81					0.12	0.12	1.00
Clearance Time (s)		7.0	7.0	7.0	7.0					6.5	6.5	
Vehicle Extension (s)		4.0	4.0	2.0	4.0					2.0	2.0	
Lane Grp Cap (vph)		3242	1025	360	4096					196	208	1553
v/s Ratio Prot		0.30		0.05	c0.83							
v/s Ratio Perm			0.30	0.32						c0.09	0.09	0.34
v/c Ratio		0.47	0.46	0.47	1.03					0.76	0.74	0.34
Uniform Delay, d1		15.9	15.8	9.0	17.5					76.8	76.5	0.0
Progression Factor		1.00	1.00	1.21	1.89					1.00	1.00	1.00
Incremental Delay, d2		0.5	1.5	0.4	15.2					23.8	20.5	0.6
Delay (s)		16.4	17.3	11.2	48.3					100.6	97.0	0.6
Level of Service		B	B	B	D					F	F	A
Approach Delay (s)		16.6			46.9			0.0			36.0	
Approach LOS		B			D			A			D	
Intersection Summary												
HCM 2000 Control Delay			36.9			HCM 2000 Level of Service					D	
HCM 2000 Volume to Capacity ratio			1.04									
Actuated Cycle Length (s)			180.0			Sum of lost time (s)				20.5		
Intersection Capacity Utilization			110.7%			ICU Level of Service				H		
Analysis Period (min)			15									

c Critical Lane Group






















Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	327	1440	2729	2742	1559	185	369
v/c Ratio	1.14	0.58	1.00	1.77	1.48	0.47	0.95
Control Delay	145.5	11.6	57.8	368.0	268.8	67.0	89.0
Queue Delay	0.0	0.0	39.6	0.0	0.0	0.0	0.0
Total Delay	145.5	11.6	97.4	368.0	268.8	67.0	89.0
Queue Length 50th (ft)	~401	313	1061	~4613	~896	194	360
Queue Length 95th (ft)	#612	337	m764	m#2894	#987	246	381
Internal Link Dist (ft)		1419	756			675	
Turn Bay Length (ft)					300		
Base Capacity (vph)	286	2487	2740	1549	1050	395	389
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	963	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.14	0.58	1.54	1.77	1.48	0.47	0.95

Intersection Summary

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

14: Mopac NBFR & Capital of Texas Hwy
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	301	1354	0	0	2538	2660	1465	148	277	0	0	0
Future Volume (veh/h)	301	1354	0	0	2538	2660	1465	148	277	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1827	0	0	1863	1845	1881	1900	1863			
Adj Flow Rate, veh/h	327	1440	0	0	2729	0	1559	185	0			
Adj No. of Lanes	1	2	0	0	3	1	3	1	1			
Peak Hour Factor	0.92	0.94	0.92	0.92	0.93	0.97	0.94	0.80	0.75			
Percent Heavy Veh, %	2	4	0	0	2	3	1	0	2			
Cap, veh/h	286	2488	0	0	2740	845	1053	396	330			
Arrive On Green	0.28	1.00	0.00	0.00	0.54	0.00	0.21	0.21	0.00			
Sat Flow, veh/h	1774	3563	0	0	5253	1568	5052	1900	1583			
Grp Volume(v), veh/h	327	1440	0	0	2729	0	1559	185	0			
Grp Sat Flow(s),veh/h/ln	1774	1736	0	0	1695	1568	1684	1900	1583			
Q Serve(g_s), s	25.0	0.0	0.0	0.0	96.1	0.0	37.5	15.4	0.0			
Cycle Q Clear(g_c), s	25.0	0.0	0.0	0.0	96.1	0.0	37.5	15.4	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	286	2488	0	0	2740	845	1053	396	330			
V/C Ratio(X)	1.14	0.58	0.00	0.00	1.00	0.00	1.48	0.47	0.00			
Avail Cap(c_a), veh/h	286	2488	0	0	2740	845	1053	396	330			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.86	0.86	0.00	0.00	1.00	0.00	1.00	1.00	0.00			
Uniform Delay (d), s/veh	63.3	0.0	0.0	0.0	41.3	0.0	71.3	62.5	0.0			
Incr Delay (d2), s/veh	93.5	0.9	0.0	0.0	16.2	0.0	221.7	0.3	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			
%ile BackOfQ(50%),veh/ln	21.6	0.3	0.0	0.0	48.8	0.0	39.0	8.1	0.0			
LnGrp Delay(d),s/veh	156.8	0.9	0.0	0.0	57.5	0.0	292.9	62.8	0.0			
LnGrp LOS	F	A			E		F	E				
Approach Vol, veh/h		1767			2729			1744				
Approach Delay, s/veh		29.7			57.5			268.5				
Approach LOS		C			E			F				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		136.0		44.0	32.0	104.0						
Change Period (Y+Rc), s		7.0		6.5	7.0	7.0						
Max Green Setting (Gmax), s		129.0		37.5	25.0	97.0						
Max Q Clear Time (g_c+1), s		2.0		39.5	27.0	98.1						
Green Ext Time (p_c), s		4.0		0.0	0.0	0.0						
Intersection Summary												
HCM 2010 Ctrl Delay				108.6								
HCM 2010 LOS				F								



Lane Group	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	144	5210	129	502	3756
v/c Ratio	0.27	1.39	0.11	1.48	1.01
Control Delay	64.0	200.0	5.3	278.6	40.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	64.0	200.0	5.3	278.6	40.6
Queue Length 50th (ft)	84	~2983	30	~819	~1678
Queue Length 95th (ft)	106	#2945	31	m#955	#1728
Internal Link Dist (ft)		1281			1273
Turn Bay Length (ft)			430	550	
Base Capacity (vph)	536	3757	1201	340	3721
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.27	1.39	0.11	1.48	1.01

Intersection Summary

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

15: Capital of Texas Hwy & Barton Creek Plaza Driveway
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted AM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↔↔	↑↑↑	↔	↔	↑↑↑
Traffic Volume (vph)	0	112	5106	80	422	3568
Future Volume (vph)	0	112	5106	80	422	3568
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	7.0	7.0	6.0	7.0
Lane Util. Factor		0.88	0.91	1.00	1.00	0.91
Frbp, ped/bikes		1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		2842	5085	1615	1805	5036
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		2842	5085	1615	1805	5036
Peak-hour factor, PHF	0.92	0.78	0.98	0.62	0.84	0.95
Adj. Flow (vph)	0	144	5210	129	502	3756
RTOR Reduction (vph)	0	0	0	8	0	0
Lane Group Flow (vph)	0	144	5210	121	502	3756
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	2%	0%	2%	0%	0%	3%
Turn Type		Over	NA	Prot	Prot	NA
Protected Phases		5	6	6	5	6
Permitted Phases						
Actuated Green, G (s)		34.0	133.0	133.0	34.0	133.0
Effective Green, g (s)		34.0	133.0	133.0	34.0	133.0
Actuated g/C Ratio		0.19	0.74	0.74	0.19	0.74
Clearance Time (s)		6.0	7.0	7.0	6.0	7.0
Vehicle Extension (s)		2.0	4.0	4.0	2.0	4.0
Lane Grp Cap (vph)		536	3757	1193	340	3721
v/s Ratio Prot		0.05	c1.02	0.08	c0.28	0.75
v/s Ratio Perm						
v/c Ratio		0.27	1.39	0.10	1.48	1.01
Uniform Delay, d1		62.4	23.5	6.6	73.0	23.5
Progression Factor		1.00	1.00	1.00	1.08	1.02
Incremental Delay, d2		0.1	175.7	0.2	229.4	16.9
Delay (s)		62.5	199.2	6.8	308.1	40.8
Level of Service		E	F	A	F	D
Approach Delay (s)	62.5		194.6			72.3
Approach LOS	E		F			E
Intersection Summary						
HCM 2000 Control Delay			139.2		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.40			
Actuated Cycle Length (s)			180.0		Sum of lost time (s)	13.0
Intersection Capacity Utilization			132.9%		ICU Level of Service	H
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	150	1521	89	321	363	184
v/c Ratio	0.22	1.03	0.21	0.36	0.79	0.36
Control Delay	26.8	71.5	11.5	14.1	61.3	11.3
Queue Delay	0.0	0.0	0.0	3.5	0.0	0.0
Total Delay	26.8	71.5	11.5	17.6	61.3	11.3
Queue Length 50th (ft)	84	~748	37	173	296	14
Queue Length 95th (ft)	m129	m#885	m49	143	#412	14
Internal Link Dist (ft)		522		175	200	
Turn Bay Length (ft)			70			90
Base Capacity (vph)	692	1472	524	899	457	505
Starvation Cap Reductn	0	0	0	475	0	0
Spillback Cap Reductn	24	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.22	1.03	0.17	0.76	0.79	0.36

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.



















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

Queue shown is maximum after two cycles.

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

16: US 290 WBFR & Victory Drive
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted AM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	0	0	132	1244	173	84	199	0	0	276	112	
Future Volume (vph)	0	0	0	132	1244	173	84	199	0	0	276	112	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				5.5	5.5		5.5	4.5			4.5	4.5	
Lane Util. Factor				1.00	0.95		1.00	1.00			1.00	1.00	
Frbp, ped/bikes				1.00	1.00		1.00	1.00			1.00	0.98	
Flpb, ped/bikes				1.00	1.00		1.00	1.00			1.00	1.00	
Frt				1.00	0.98		1.00	1.00			1.00	0.85	
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00	
Satd. Flow (prot)				1597	3375		1769	1827			1759	1490	
Flt Permitted				0.95	1.00		0.18	1.00			1.00	1.00	
Satd. Flow (perm)				1597	3375		327	1827			1759	1490	
Peak-hour factor, PHF	0.92	0.92	0.92	0.88	0.96	0.77	0.94	0.62	0.92	0.92	0.76	0.61	
Adj. Flow (vph)	0	0	0	150	1296	225	89	321	0	0	363	184	
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	120	
Lane Group Flow (vph)	0	0	0	150	1511	0	89	321	0	0	363	64	
Confl. Peds. (#/hr)						6	6					6	
Confl. Bikes (#/hr)												4	
Heavy Vehicles (%)	2%	2%	2%	13%	3%	11%	2%	4%	2%	2%	8%	6%	
Turn Type				Split	NA		pm+pt	NA			NA	Perm	
Protected Phases				7 8	7 8		2 10 1 2 6 10				1 6		
Permitted Phases							1 2 6 10					1 6	
Actuated Green, G (s)				58.0	58.0		61.0	66.5			35.1	35.1	
Effective Green, g (s)				58.0	58.0		50.5	55.0			35.1	35.1	
Actuated g/C Ratio				0.43	0.43		0.37	0.41			0.26	0.26	
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				686	1450		334	744			457	387	
v/s Ratio Prot				0.09	c0.45		0.04	c0.18			c0.21		
v/s Ratio Perm							0.06					0.04	
v/c Ratio				0.22	1.04		0.27	0.43			0.79	0.17	
Uniform Delay, d1				24.2	38.5		29.6	28.8			46.6	38.6	
Progression Factor				1.07	1.06		0.55	0.62			1.00	1.00	
Incremental Delay, d2				0.1	35.3		0.1	0.1			8.6	0.1	
Delay (s)				26.0	76.0		16.5	17.9			55.2	38.7	
Level of Service				C	E		B	B			E	D	
Approach Delay (s)		0.0			71.5			17.6			49.7		
Approach LOS		A			E			B			D		
Intersection Summary													
HCM 2000 Control Delay			58.6		HCM 2000 Level of Service						E		
HCM 2000 Volume to Capacity ratio			0.94										
Actuated Cycle Length (s)			135.0		Sum of lost time (s)						32.0		
Intersection Capacity Utilization			97.6%		ICU Level of Service						F		
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1558	172	173	334	112
v/c Ratio	0.95	0.23	0.26	0.51	0.12
Control Delay	64.2	26.9	9.8	9.0	3.4
Queue Delay	5.2	0.0	0.0	0.4	1.0
Total Delay	69.3	26.9	9.8	9.4	4.4
Queue Length 50th (ft)	513	97	29	31	10
Queue Length 95th (ft)	m#574	143	66	m134	m13
Internal Link Dist (ft)	53	253			175
Turn Bay Length (ft)			125	70	
Base Capacity (vph)	1640	758	668	661	932
Starvation Cap Reductn	0	0	0	71	631
Spillback Cap Reductn	66	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.99	0.23	0.26	0.57	0.37

Intersection Summary






















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

Queue shown is maximum after two cycles.

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

17: Pack Saddle Pass & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted AM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  							 	 			
Traffic Volume (vph)	122	1196	49	0	0	0	0	148	144	291	101	0	
Future Volume (vph)	122	1196	49	0	0	0	0	148	144	291	101	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.0						4.5	4.5	5.5	4.5		
Lane Util. Factor		0.91						1.00	1.00	1.00	1.00		
Frbp, ped/bikes		1.00						1.00	1.00	1.00	1.00		
Flpb, ped/bikes		1.00						1.00	1.00	1.00	1.00		
Frt		0.99						1.00	0.85	1.00	1.00		
Flt Protected		0.99						1.00	1.00	0.95	1.00		
Satd. Flow (prot)		4912						1845	1455	1702	1583		
Flt Permitted		0.99						1.00	1.00	0.59	1.00		
Satd. Flow (perm)		4912						1845	1455	1060	1583		
Peak-hour factor, PHF	0.54	0.94	0.81	0.92	0.92	0.92	0.92	0.86	0.83	0.87	0.90	0.92	
Adj. Flow (vph)	226	1272	60	0	0	0	0	172	173	334	112	0	
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	75	0	0	0	
Lane Group Flow (vph)	0	1555	0	0	0	0	0	172	98	334	112	0	
Confl. Peds. (#/hr)			3						1	1			
Confl. Bikes (#/hr)			1										
Heavy Vehicles (%)	6%	4%	0%	2%	2%	2%	2%	3%	11%	6%	20%	2%	
Turn Type	Split	NA						NA	Prot	D.P+P	NA		
Protected Phases	8 10	8 10						1 2 6	1 2 6	7	1 2 6 7		
Permitted Phases										1 2 6			
Actuated Green, G (s)		45.0						55.5	55.5	74.0	78.5		
Effective Green, g (s)		45.0						50.0	50.0	69.5	73.0		
Actuated g/C Ratio		0.33						0.37	0.37	0.51	0.54		
Clearance Time (s)										5.5			
Vehicle Extension (s)										1.5			
Lane Grp Cap (vph)		1637						683	538	633	855		
v/s Ratio Prot		c0.32						0.09	0.07	c0.07	0.07		
v/s Ratio Perm										c0.20			
v/c Ratio		0.95						0.25	0.18	0.53	0.13		
Uniform Delay, d1		43.9						29.5	28.7	25.5	15.3		
Progression Factor		1.19						1.00	1.00	0.38	0.26		
Incremental Delay, d2		11.4						0.1	0.1	0.3	0.0		
Delay (s)		63.5						29.6	28.8	9.9	4.0		
Level of Service		E						C	C	A	A		
Approach Delay (s)		63.5		0.0				29.2			8.4		
Approach LOS		E		A				C			A		
Intersection Summary													
HCM 2000 Control Delay			48.0									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.77										
Actuated Cycle Length (s)			135.0									Sum of lost time (s)	32.0
Intersection Capacity Utilization			97.6%									ICU Level of Service	F
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	476	991	760	589	901	1083
v/c Ratio	1.85	1.87	1.69	2.34	0.33	1.21
Control Delay	428.9	429.1	343.4	626.8	0.6	147.2
Queue Delay	0.0	0.0	0.0	0.0	1.1	1.5
Total Delay	428.9	429.1	343.4	626.8	1.7	148.7
Queue Length 50th (ft)	~668	~698	~772	~757	8	~400
Queue Length 95th (ft)	#865	#839	#930	m#856	m9	#460
Internal Link Dist (ft)		53			174	314
Turn Bay Length (ft)						
Base Capacity (vph)	257	530	450	252	2694	898
Starvation Cap Reductn	0	0	0	0	1458	0
Spillback Cap Reductn	0	1	0	0	0	199
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.85	1.87	1.69	2.34	0.73	1.55

Intersection Summary

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

18: US 290 WBFR & Menchaca Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations				↙	↕	↗	↙	↕			↕	↗		
Traffic Volume (vph)	0	0	0	493	846	646	501	829	0	0	767	170		
Future Volume (vph)	0	0	0	493	846	646	501	829	0	0	767	170		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)				6.0	6.0	6.0	5.0	5.0			5.0			
Lane Util. Factor				0.91	0.91	1.00	1.00	0.95			0.91			
Frbp, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00			
Flpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00			
Frt				1.00	1.00	0.85	1.00	1.00			0.97			
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00			
Satd. Flow (prot)				1595	3284	1599	1769	3574			4929			
Flt Permitted				0.95	1.00	1.00	0.25	1.00			1.00			
Satd. Flow (perm)				1595	3284	1599	469	3574			4929			
Peak-hour factor, PHF	0.92	0.92	0.92	0.87	0.94	0.85	0.85	0.92	0.92	0.92	0.86	0.89		
Adj. Flow (vph)	0	0	0	567	900	760	589	901	0	0	892	191		
RTOR Reduction (vph)	0	0	0	0	0	192	0	0	0	0	26	0		
Lane Group Flow (vph)	0	0	0	476	991	568	589	901	0	0	1057	0		
Confl. Peds. (#/hr)							1					1		
Confl. Bikes (#/hr)												1		
Heavy Vehicles (%)	2%	2%	2%	3%	5%	1%	2%	1%	2%	2%	2%	3%		
Turn Type				Perm	NA	Perm	custom	NA				NA		
Protected Phases					7 8			1 2 6 10				1 6		
Permitted Phases				7 8		7 8	2 10							
Actuated Green, G (s)				21.0	21.0	21.0	70.0	98.0				23.0		
Effective Green, g (s)				21.0	21.0	21.0	70.0	98.0				23.0		
Actuated g/C Ratio				0.16	0.16	0.16	0.54	0.75				0.18		
Clearance Time (s)														
Vehicle Extension (s)														
Lane Grp Cap (vph)				257	530	258	252	2694				872		
v/s Ratio Prot								0.25				c0.21		
v/s Ratio Perm				0.30	0.30	c0.36	c1.26							
v/c Ratio				1.85	1.87	2.20	2.34	0.33				1.21		
Uniform Delay, d1				54.5	54.5	54.5	30.0	5.3				53.5		
Progression Factor				1.00	1.00	1.00	0.58	0.08				1.00		
Incremental Delay, d2				398.1	398.6	553.2	608.9	0.0				106.3		
Delay (s)				452.6	453.1	607.7	626.4	0.5				159.8		
Level of Service				F	F	F	F	A				F		
Approach Delay (s)		0.0			505.7			247.9				159.8		
Approach LOS		A			F			F				F		
Intersection Summary														
HCM 2000 Control Delay			347.7									HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio			2.42											
Actuated Cycle Length (s)			130.0								32.0			
Intersection Capacity Utilization			115.5%										ICU Level of Service	H
Analysis Period (min)			15											
c Critical Lane Group														



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	244	434	200	1854	678	803
v/c Ratio	0.71	0.64	0.44	1.03dr	1.45	0.32
Control Delay	61.7	53.5	9.1	41.4	229.9	6.9
Queue Delay	0.8	0.0	0.0	46.1	3.5	13.3
Total Delay	62.5	53.5	9.1	87.4	233.4	20.3
Queue Length 50th (ft)	194	179	0	517	~759	80
Queue Length 95th (ft)	286	234	66	589	m#431	m57
Internal Link Dist (ft)		62		300		174
Turn Bay Length (ft)						
Base Capacity (vph)	343	674	456	2058	467	2534
Starvation Cap Reductn	0	0	0	0	138	1716
Spillback Cap Reductn	15	0	0	417	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.64	0.44	1.13	2.06	0.98

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

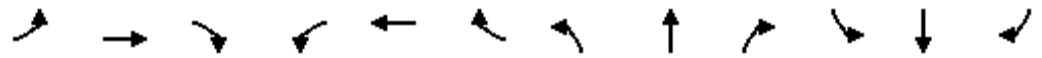
Queue shown is maximum after two cycles.

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

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

19: Menchaca Road & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↑↑	↖					↑↑↑		↗	↑↑	
Traffic Volume (vph)	217	386	194	0	0	0	0	1072	624	549	787	0
Future Volume (vph)	217	386	194	0	0	0	0	1072	624	549	787	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0					5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00					0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99					1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.94		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1787	3505	1533					4810		1787	3505	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1787	3505	1533					4810		1787	3505	
Peak-hour factor, PHF	0.89	0.89	0.97	0.92	0.92	0.92	0.92	0.95	0.86	0.81	0.98	0.92
Adj. Flow (vph)	244	434	200	0	0	0	0	1128	726	678	803	0
RTOR Reduction (vph)	0	0	160	0	0	0	0	24	0	0	0	0
Lane Group Flow (vph)	244	434	40	0	0	0	0	1830	0	678	803	0
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	3%	4%	2%	2%	2%	2%	1%	1%	1%	3%	2%
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		8 10						1 2		6 7	1 2 6 7	
Permitted Phases	8 10		8 10									
Actuated Green, G (s)	26.0	26.0	26.0					55.0		33.0	93.0	
Effective Green, g (s)	26.0	26.0	26.0					55.0		33.0	93.0	
Actuated g/C Ratio	0.20	0.20	0.20					0.42		0.25	0.72	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	357	701	306					2035		453	2507	
v/s Ratio Prot		0.12						c0.38		c0.38	0.23	
v/s Ratio Perm	c0.14		0.03									
v/c Ratio	0.68	0.62	0.13					1.03dr		1.50	0.32	
Uniform Delay, d1	48.2	47.5	42.7					34.9		48.5	6.8	
Progression Factor	1.00	1.00	1.00					1.00		0.55	1.06	
Incremental Delay, d2	4.3	1.2	0.1					5.6		224.6	0.0	
Delay (s)	52.5	48.6	42.8					40.6		251.5	7.2	
Level of Service	D	D	D					D		F	A	
Approach Delay (s)		48.4			0.0			40.6			119.0	
Approach LOS		D			A			D			F	

Intersection Summary	
HCM 2000 Control Delay	69.8 HCM 2000 Level of Service E
HCM 2000 Volume to Capacity ratio	1.19
Actuated Cycle Length (s)	130.0 Sum of lost time (s) 32.0
Intersection Capacity Utilization	115.5% ICU Level of Service H
Analysis Period (min)	15

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
 c Critical Lane Group

Intersection												
Int Delay, s/veh	18.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	12	147	147	13	131	3	143	9	96	2	19	28
Future Vol, veh/h	12	147	147	13	131	3	143	9	96	2	19	28
Conflicting Peds, #/hr	15	0	4	4	0	15	9	0	15	15	0	9
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	66	74	95	58	60	76	75	60	60	60	75
Heavy Vehicles, %	0	0	6	0	0	0	11	17	2	0	0	0
Mvmt Flow	24	223	199	14	226	5	188	12	160	3	32	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	246	0	0	426	0	0	675	649	342	744	746	253
Stage 1	-	-	-	-	-	-	375	375	-	272	272	-
Stage 2	-	-	-	-	-	-	300	274	-	472	474	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.21	6.67	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.21	5.67	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.21	5.67	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.599	4.153	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1332	-	-	1144	-	-	356	370	701	333	344	791
Stage 1	-	-	-	-	-	-	628	592	-	738	688	-
Stage 2	-	-	-	-	-	-	690	657	-	576	561	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1313	-	-	1140	-	-	301	349	688	235	325	773
Mov Cap-2 Maneuver	-	-	-	-	-	-	301	349	-	235	325	-
Stage 1	-	-	-	-	-	-	610	575	-	709	669	-
Stage 2	-	-	-	-	-	-	612	639	-	416	545	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.5			54.1			14.5		
HCM LOS							F			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	404	1313	-	-	1140	-	-	452
HCM Lane V/C Ratio	0.891	0.018	-	-	0.012	-	-	0.16
HCM Control Delay (s)	54.1	7.8	0	-	8.2	0	-	14.5
HCM Lane LOS	F	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	9.2	0.1	-	-	0	-	-	0.6



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	544	453	1777	705	433	2147
v/c Ratio	0.61	0.58	1.12	0.78	1.12	0.90
Control Delay	47.5	28.7	92.4	13.8	121.0	25.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.5	28.7	92.4	13.8	121.0	25.5
Queue Length 50th (ft)	217	277	~964	123	~384	766
Queue Length 95th (ft)	263	390	#1075	145	#508	905
Internal Link Dist (ft)	497		121			322
Turn Bay Length (ft)		125			125	
Base Capacity (vph)	890	779	1588	906	387	2382
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.58	1.12	0.78	1.12	0.90

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

1: S Lamar Blvd & W Oltorf Street
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔	↔	↕↕	↔	↔	↕↕
Traffic Volume (vph)	468	426	1670	599	355	1997
Future Volume (vph)	468	426	1670	599	355	1997
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1615	3574	1542	1787	3574
Flt Permitted	0.95	1.00	1.00	1.00	0.06	1.00
Satd. Flow (perm)	3433	1615	3574	1542	116	3574
Peak-hour factor, PHF	0.86	0.94	0.94	0.85	0.82	0.93
Adj. Flow (vph)	544	453	1777	705	433	2147
RTOR Reduction (vph)	0	2	0	221	0	0
Lane Group Flow (vph)	544	451	1777	484	433	2147
Confl. Peds. (#/hr)		10		6	6	
Confl. Bikes (#/hr)				5		
Heavy Vehicles (%)	2%	0%	1%	2%	1%	1%
Turn Type	Prot	pt+ov	NA	Perm	pm+pt	NA
Protected Phases	4	1 4	2		1	6
Permitted Phases		4		2	6	
Actuated Green, G (s)	35.0	65.0	60.0	60.0	90.0	90.0
Effective Green, g (s)	35.0	65.0	60.0	60.0	90.0	90.0
Actuated g/C Ratio	0.26	0.48	0.44	0.44	0.67	0.67
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	1.0		1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	890	777	1588	685	386	2382
v/s Ratio Prot	0.16	c0.28	0.50		c0.21	0.60
v/s Ratio Perm				0.31	c0.54	
v/c Ratio	0.61	0.58	1.12	0.71	1.12	0.90
Uniform Delay, d1	44.0	25.2	37.5	30.4	46.4	18.8
Progression Factor	1.00	1.00	0.89	0.68	1.00	1.00
Incremental Delay, d2	3.1	3.2	60.2	4.3	83.1	6.1
Delay (s)	47.1	28.3	93.4	25.0	129.5	24.9
Level of Service	D	C	F	C	F	C
Approach Delay (s)	38.6		74.0			42.4
Approach LOS	D		E			D

Intersection Summary

HCM 2000 Control Delay	54.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	91.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	133	341	122	208	2038	161	49	2256
v/c Ratio	0.59	0.83	0.65	0.85	0.81	0.15	0.84	1.13
Control Delay	55.2	54.5	59.2	52.1	19.8	6.8	85.1	93.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.2	54.5	59.2	52.1	19.8	6.8	85.1	93.0
Queue Length 50th (ft)	101	224	80	141	527	38	30	~1201
Queue Length 95th (ft)	125	108	109	m#276	846	m51	m#50	#1338
Internal Link Dist (ft)		215	74		201			588
Turn Bay Length (ft)	75			50		125	50	
Base Capacity (vph)	225	509	295	245	2524	1100	58	1992
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.67	0.41	0.85	0.81	0.15	0.84	1.13

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

2: S Lamar Blvd & Bluebonnet Lane
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↘			↘		↗	↕	↗	↘	↕	
Traffic Volume (vph)	101	43	215	0	48	53	175	1834	122	35	2164	1
Future Volume (vph)	101	43	215	0	48	53	175	1834	122	35	2164	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	0.97			0.97		1.00	1.00	0.95	1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.89			0.94		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1797	1633			1727		1787	3574	1529	1805	3539	
Flt Permitted	0.35	1.00			1.00		0.05	1.00	1.00	0.06	1.00	
Satd. Flow (perm)	670	1633			1727		93	3574	1529	105	3539	
Peak-hour factor, PHF	0.76	0.47	0.86	0.69	0.75	0.91	0.84	0.90	0.76	0.72	0.96	0.60
Adj. Flow (vph)	133	91	250	0	64	58	208	2038	161	49	2254	2
RTOR Reduction (vph)	0	66	0	0	26	0	0	0	21	0	0	0
Lane Group Flow (vph)	133	275	0	0	96	0	208	2038	140	49	2256	0
Confl. Peds. (#/hr)	12		12	12			8		9	9		8
Confl. Bikes (#/hr)			6				5		12			4
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%	1%	1%	0%	0%	2%	0%
Turn Type	pm+pt	NA			NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4						2		2	6		
Actuated Green, G (s)	28.6	28.6			12.6		95.4	95.4	95.4	76.0	76.0	
Effective Green, g (s)	28.6	28.6			12.6		95.4	95.4	95.4	76.0	76.0	
Actuated g/C Ratio	0.21	0.21			0.09		0.71	0.71	0.71	0.56	0.56	
Clearance Time (s)	6.0	6.0			6.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0			2.0		1.0	1.0	1.0	1.0	1.0	
Lane Grp Cap (vph)	225	345			161		246	2525	1080	59	1992	
v/s Ratio Prot	0.04	c0.17			0.06		0.09	c0.57			c0.64	
v/s Ratio Perm	0.08						0.51		0.09	0.47		
v/c Ratio	0.59	0.80			0.59		0.85	0.81	0.13	0.83	1.13	
Uniform Delay, d1	45.6	50.4			58.7		46.2	13.5	6.4	24.2	29.5	
Progression Factor	1.00	1.00			1.00		0.97	1.22	1.60	1.12	1.02	
Incremental Delay, d2	2.8	11.3			3.9		16.3	1.5	0.1	47.1	63.3	
Delay (s)	48.4	61.7			62.6		61.0	18.0	10.4	74.2	93.4	
Level of Service	D	E			E		E	B	B	E	F	
Approach Delay (s)		58.0			62.6			21.2			93.0	
Approach LOS		E			E			C			F	

Intersection Summary

HCM 2000 Control Delay	56.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	103.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	762	1823	32	708	2145
v/c Ratio	0.91	0.82	0.03	1.37	0.90
Control Delay	60.1	15.7	0.6	216.6	7.6
Queue Delay	0.0	0.2	0.0	0.0	2.0
Total Delay	60.1	15.9	0.6	216.6	9.6
Queue Length 50th (ft)	352	744	1	~842	151
Queue Length 95th (ft)	#481	877	m1	m#755	m142
Internal Link Dist (ft)		324			498
Turn Bay Length (ft)				100	
Base Capacity (vph)	837	2223	993	516	2385
Starvation Cap Reductn	0	47	0	0	0
Spillback Cap Reductn	0	0	0	0	130
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.91	0.84	0.03	1.37	0.95

Intersection Summary

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

3: S Lamar Blvd & Menchaca Road
 HCM Signalized Intersection Capacity Analysis



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↔↔	↕↕	↔	↔	↕↕
Traffic Volume (vph)	0	701	1641	24	609	1973
Future Volume (vph)	0	701	1641	24	609	1973
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0
Lane Util. Factor		0.88	0.95	1.00	1.00	0.95
Frbp, ped/bikes		1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		2814	3574	1581	1787	3539
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		2814	3574	1581	1787	3539
Peak-hour factor, PHF	0.92	0.92	0.90	0.75	0.86	0.92
Adj. Flow (vph)	0	762	1823	32	708	2145
RTOR Reduction (vph)	0	25	0	10	0	0
Lane Group Flow (vph)	0	737	1823	22	708	2145
Confl. Peds. (#/hr)		7		6	6	
Confl. Bikes (#/hr)		1		9		
Heavy Vehicles (%)	2%	1%	1%	0%	1%	2%
Turn Type		pt+ov	NA	Perm	Prot	NA
Protected Phases		1 4	2 3		1 4	1 2
Permitted Phases				2 3		
Actuated Green, G (s)		39.0	84.0	84.0	39.0	91.0
Effective Green, g (s)		39.0	84.0	84.0	39.0	91.0
Actuated g/C Ratio		0.29	0.62	0.62	0.29	0.67
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		812	2223	983	516	2385
v/s Ratio Prot		0.26	c0.51		c0.40	c0.61
v/s Ratio Perm				0.01		
v/c Ratio		0.91	0.82	0.02	1.37	0.90
Uniform Delay, d1		46.3	19.7	9.8	48.0	18.2
Progression Factor		1.00	0.65	0.12	1.31	0.28
Incremental Delay, d2		13.5	1.8	0.0	171.4	2.0
Delay (s)		59.8	14.6	1.2	234.2	7.1
Level of Service		E	B	A	F	A
Approach Delay (s)	59.8		14.4			63.5
Approach LOS	E		B			E
Intersection Summary						
HCM 2000 Control Delay			46.3		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			1.15			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	24.0
Intersection Capacity Utilization			105.8%		ICU Level of Service	G
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	117	403	101	176	227	1687	77	101	2106
v/c Ratio	0.54	0.59	0.93	0.28	1.89	0.70	0.07	4.04	0.96
Control Delay	61.1	38.8	123.0	45.7	453.9	6.6	0.3	1424.6	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	3.6
Total Delay	61.1	38.8	123.0	45.7	453.9	6.9	0.3	1424.6	14.9
Queue Length 50th (ft)	94	118	88	65	~302	275	1	~162	165
Queue Length 95th (ft)	154	141	#204	95	m#389	337	m2	m#184	#1100
Internal Link Dist (ft)		257		238		436			324
Turn Bay Length (ft)	90		100		125		160	100	
Base Capacity (vph)	215	682	109	636	120	2409	1088	25	2190
Starvation Cap Reductn	0	0	0	0	0	0	0	0	61
Spillback Cap Reductn	0	0	0	0	0	244	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.59	0.93	0.28	1.89	0.78	0.07	4.04	0.99

Intersection Summary

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

4: S Lamar Blvd & Barton Skyway/Lightsey Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↕		↘	↕		↘	↕	↘	↘	↕	↘
Traffic Volume (vph)	101	137	179	92	127	16	200	1518	68	76	1823	60
Future Volume (vph)	101	137	179	92	127	16	200	1518	68	76	1823	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.92		1.00	0.98		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1798	3263		1798	3518		1805	3574	1579	1736	3519	
Flt Permitted	0.64	1.00		0.33	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1211	3263		616	3518		1805	3574	1579	1736	3519	
Peak-hour factor, PHF	0.86	0.78	0.79	0.91	0.85	0.60	0.88	0.90	0.88	0.75	0.90	0.75
Adj. Flow (vph)	117	176	227	101	149	27	227	1687	77	101	2026	80
RTOR Reduction (vph)	0	102	0	0	11	0	0	0	24	0	2	0
Lane Group Flow (vph)	117	301	0	101	165	0	227	1687	53	101	2104	0
Confl. Peds. (#/hr)	3		5	5		3	5		18	18		5
Confl. Bikes (#/hr)			2						7			8
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	4%	2%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		8			8		5	5 6		7	6 7	
Permitted Phases	8			8					5 6			
Actuated Green, G (s)	24.0	24.0		24.0	24.0		9.0	91.0	91.0	2.0	84.0	
Effective Green, g (s)	24.0	24.0		24.0	24.0		9.0	91.0	91.0	2.0	84.0	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.07	0.67	0.67	0.01	0.62	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0			6.0		
Vehicle Extension (s)	2.0	2.0		2.0	2.0		1.0			1.0		
Lane Grp Cap (vph)	215	580		109	625		120	2409	1064	25	2189	
v/s Ratio Prot		0.09			0.05		c0.13	0.47		c0.06	c0.60	
v/s Ratio Perm	0.10			c0.16					0.03			
v/c Ratio	0.54	0.52		0.93	0.26		1.89	0.70	0.05	4.04	0.96	
Uniform Delay, d1	50.5	50.3		54.6	47.9		63.0	13.6	7.4	66.5	24.0	
Progression Factor	1.00	1.00		1.00	1.00		1.18	0.40	0.14	0.69	0.13	
Incremental Delay, d2	9.6	3.3		68.1	1.0		418.2	1.0	0.0	1410.6	6.4	
Delay (s)	60.1	53.6		122.7	48.9		492.6	6.5	1.1	1456.4	9.5	
Level of Service	E	D		F	D		F	A	A	F	A	
Approach Delay (s)		55.0			75.8			61.7			75.7	
Approach LOS		E			E			E			E	

Intersection Summary		
HCM 2000 Control Delay	68.0	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	1.11	E
Actuated Cycle Length (s)	135.0	Sum of lost time (s)
Intersection Capacity Utilization	115.9%	24.0
Analysis Period (min)	15	ICU Level of Service
c Critical Lane Group		H






















Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	115	158	237	37	1888	246	1919
v/c Ratio	0.50	0.60	0.58	0.46	0.86	1.72	0.76
Control Delay	48.0	58.9	32.5	35.8	25.9	365.4	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.0	58.9	32.5	35.8	25.9	365.4	4.7
Queue Length 50th (ft)	75	127	104	16	651	~275	113
Queue Length 95th (ft)	83	169	89	47	769	m#308	m123
Internal Link Dist (ft)	270		212		208		469
Turn Bay Length (ft)		120		95		125	
Base Capacity (vph)	229	264	409	81	2217	143	2562
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.60	0.58	0.46	0.85	1.72	0.75

Intersection Summary

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

5: S Lamar Blvd & Private Driveway/Panther Trail
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	12	33	120	8	179	29	1645	134	214	1821	15
Future Volume (veh/h)	37	12	33	120	8	179	29	1645	134	214	1821	15
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	1.00		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1814	1900	1900	1880	1900	1827	1881	1900
Adj Flow Rate, veh/h	53	20	42	158	13	224	37	1732	156	246	1897	22
Adj No. of Lanes	0	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.70	0.60	0.78	0.76	0.60	0.80	0.79	0.95	0.86	0.87	0.96	0.69
Percent Heavy Veh, %	0	0	0	0	0	5	0	1	2	4	1	0
Cap, veh/h	77	34	41	236	17	295	150	2084	185	193	2600	30
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.63	0.63	0.63	0.05	0.72	0.72
Sat Flow, veh/h	181	162	197	1362	82	1421	237	3309	293	1740	3618	42
Grp Volume(v), veh/h	115	0	0	158	0	237	37	922	966	246	935	984
Grp Sat Flow(s),veh/h/ln	541	0	0	1362	0	1503	237	1786	1817	1740	1787	1873
Q Serve(g_s), s	8.0	0.0	0.0	0.0	0.0	20.0	14.8	53.3	56.8	7.0	41.7	42.1
Cycle Q Clear(g_c), s	28.0	0.0	0.0	23.3	0.0	20.0	44.9	53.3	56.8	7.0	41.7	42.1
Prop In Lane	0.46		0.37	1.00		0.95	1.00		0.16	1.00		0.02
Lane Grp Cap(c), veh/h	151	0	0	236	0	312	150	1124	1144	193	1284	1345
V/C Ratio(X)	0.76	0.00	0.00	0.67	0.00	0.76	0.25	0.82	0.84	1.28	0.73	0.73
Avail Cap(c_a), veh/h	151	0	0	236	0	312	150	1124	1144	193	1284	1345
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.5	0.0	0.0	51.6	0.0	50.3	28.2	19.1	19.8	36.8	11.2	11.3
Incr Delay (d2), s/veh	29.8	0.0	0.0	14.0	0.0	15.9	3.9	6.7	7.7	158.7	3.6	3.5
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	5.5	0.0	0.0	6.6	0.0	9.7	1.1	28.2	30.6	15.7	21.6	22.6
LnGrp Delay(d),s/veh	87.3	0.0	0.0	65.7	0.0	66.3	32.1	25.9	27.5	195.5	14.9	14.8
LnGrp LOS	F			E		E	C	C	C	F	B	B
Approach Vol, veh/h		115			395			1925			2165	
Approach Delay, s/veh		87.3			66.0			26.8			35.4	
Approach LOS		F			E			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	12.0	90.0		33.0		102.0		33.0				
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s	7.0	85.0		28.0		97.0		28.0				
Max Q Clear Time (g_c+I1), s	9.0	58.8		30.0		44.1		25.3				
Green Ext Time (p_c), s	0.0	6.1		0.0		5.3		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay				35.7								
HCM 2010 LOS				D								

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Private Driveway

Queues

Phase 1-2026 Forecasted PM



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL2	SBT	NWL	NWR
Lane Group Flow (vph)	374	370	165	159	627	187	1787	621	1313
v/c Ratio	1.47	0.90	0.95	0.46	0.52	1.23	0.59	2.89	1.21
Control Delay	267.3	50.3	99.1	17.3	36.8	196.2	25.7	882.8	134.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	267.3	50.3	99.1	17.3	36.8	196.2	25.7	882.8	134.4
Queue Length 50th (ft)	~432	144	114	20	223	~194	309	~899	~698
Queue Length 95th (ft)	#555	162	#229	11	284	#325	347	#720	#785
Internal Link Dist (ft)		165		155	240		599	179	
Turn Bay Length (ft)						160			
Base Capacity (vph)	254	409	174	342	1195	152	3033	215	1088
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.47	0.90	0.95	0.46	0.52	1.23	0.59	2.89	1.21

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Private Driveway

HCM Signalized Intersection Capacity Analysis

Phase 1-2026 Forecasted PM

Movement	EBL	EBT	EBR2	WBL	WBT	WBR	NBT	SBL2	SBT	SBR	NWL	NWR
Lane Configurations												
Traffic Volume (vph)	307	36	278	157	15	90	577	161	1524	99	385	989
Future Volume (vph)	307	36	278	157	15	90	577	161	1524	99	385	989
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		5.5	7.0	5.5		7.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		0.95	1.00	0.86		1.00	0.88
Frbp, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.87		1.00	0.88		1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1804	1631		1787	1613		3574	1805	6386		1805	2842
Flt Permitted	0.50	1.00		0.22	1.00		1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	956	1631		407	1613		3574	1805	6386		1805	2842
Peak-hour factor, PHF	0.82	0.72	0.87	0.95	0.55	0.68	0.92	0.86	0.93	0.67	0.62	0.86
Adj. Flow (vph)	374	50	320	165	27	132	627	187	1639	148	621	1150
RTOR Reduction (vph)	0	178	0	0	113	0	0	0	11	0	0	137
Lane Group Flow (vph)	374	192	0	165	46	0	627	187	1776	0	621	1176
Confl. Peds. (#/hr)	2		1	1		2				10	10	
Confl. Bikes (#/hr)			1			2				1		
Heavy Vehicles (%)	0%	0%	0%	1%	0%	2%	1%	0%	1%	0%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA		NA	Prot	NA		Prot	Prot
Protected Phases	7	4		3	8		2!	1	6		5	2!
Permitted Phases	4			8								
Actuated Green, G (s)	27.0	18.5		27.0	18.5		43.5	11.0	61.5		15.5	43.5
Effective Green, g (s)	27.0	18.5		27.0	18.5		43.5	11.0	61.5		15.5	43.5
Actuated g/C Ratio	0.21	0.14		0.21	0.14		0.33	0.08	0.47		0.12	0.33
Clearance Time (s)	6.5	6.5		6.5	6.5		5.5	7.0	5.5		7.5	5.5
Vehicle Extension (s)	1.0	3.0		3.0	3.0		3.0	2.0	2.0		3.0	3.0
Lane Grp Cap (vph)	254	232		174	229		1195	152	3021		215	950
v/s Ratio Prot	c0.10	0.12		0.06	0.03		0.18	c0.10	0.28		c0.34	c0.41
v/s Ratio Perm	c0.21			0.13								
v/c Ratio	1.47	0.83		0.95	0.20		0.52	1.23	0.59		2.89	1.24
Uniform Delay, d1	50.6	54.2		48.2	49.2		34.9	59.5	25.0		57.2	43.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	232.8	27.7		52.6	2.0		1.7	147.9	0.8		862.4	116.1
Delay (s)	283.4	82.0		100.8	51.2		36.6	207.4	25.8		919.6	159.4
Level of Service	F	F		F	D		D	F	C		F	F
Approach Delay (s)		183.2			76.4		36.6		43.0		403.5	
Approach LOS		F			E		D		D		F	

Intersection Summary

HCM 2000 Control Delay	187.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.56		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	33.0
Intersection Capacity Utilization	143.2%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.

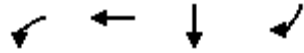
c Critical Lane Group

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Private Driveway
 HCM Signalized Intersection Capacity Analysis

Phase 1-2026 Forecasted PM



Movement	NWR2
Lane Configurations	
Traffic Volume (vph)	98
Future Volume (vph)	98
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frbp, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.60
Adj. Flow (vph)	163
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	2
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Lane Group	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	633	1318	1468	340
v/c Ratio	0.79	0.82	0.63	0.21
Control Delay	7.6	7.9	37.0	0.3
Queue Delay	0.0	0.0	0.1	0.0
Total Delay	7.6	7.9	37.1	0.3
Queue Length 50th (ft)	153	162	307	0
Queue Length 95th (ft)	m0	m14	338	0
Internal Link Dist (ft)		23	453	
Turn Bay Length (ft)				
Base Capacity (vph)	803	1607	2325	1595
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	1	1	149	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.79	0.82	0.67	0.21

Intersection Summary

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

7: S Lamar Blvd & Capity of Texas Hwy
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↕						↑↑↑↑	↗
Traffic Volume (vph)	0	0	0	626	986	0	0	0	0	0	1292	309
Future Volume (vph)	0	0	0	626	986	0	0	0	0	0	1292	309
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0	6.0						6.0	4.0
Lane Util. Factor				0.91	0.91						0.86	1.00
Frbp, ped/bikes				1.00	1.00						1.00	0.99
Flpb, ped/bikes				1.00	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1626	3377						6408	1595
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1626	3377						6408	1595
Peak-hour factor, PHF	0.92	0.92	0.92	0.82	0.83	0.92	0.92	0.92	0.92	0.92	0.88	0.91
Adj. Flow (vph)	0	0	0	763	1188	0	0	0	0	0	1468	340
RTOR Reduction (vph)	0	0	0	56	56	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	577	1262	0	0	0	0	0	1468	340
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	2%	2%	1%	2%	0%	2%	2%	2%	2%	2%	0%
Turn Type				custom	NA						NA	Free
Protected Phases				1 2 4 8	1 2 4 8						5 6 7	
Permitted Phases				3	3							Free
Actuated Green, G (s)				63.0	63.0						56.0	135.0
Effective Green, g (s)				63.0	63.0						56.0	135.0
Actuated g/C Ratio				0.47	0.47						0.41	1.00
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)				831	1726						2658	1595
v/s Ratio Prot				0.32	c0.34						c0.23	
v/s Ratio Perm				0.04	0.04							0.21
v/c Ratio				0.69	0.73						0.55	0.21
Uniform Delay, d1				28.4	29.1						30.0	0.0
Progression Factor				0.33	0.32						1.00	1.00
Incremental Delay, d2				0.2	0.1						0.8	0.3
Delay (s)				9.6	9.4						30.8	0.3
Level of Service				A	A						C	A
Approach Delay (s)		0.0			9.5			0.0			25.1	
Approach LOS		A			A			A			C	
Intersection Summary												
HCM 2000 Control Delay			17.0		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			135.0		Sum of lost time (s)				40.0			
Intersection Capacity Utilization			78.4%		ICU Level of Service					D		
Analysis Period (min)			15									

c Critical Lane Group















Lane Group	WBT	NBL	NBT
Lane Group Flow (vph)	1524	346	1078
v/c Ratio	1.40	0.36	0.36
Control Delay	218.6	4.3	4.3
Queue Delay	1.0	1.2	0.5
Total Delay	219.6	5.5	4.8
Queue Length 50th (ft)	~656	0	108
Queue Length 95th (ft)	#735	m12	m13
Internal Link Dist (ft)	133		295
Turn Bay Length (ft)			
Base Capacity (vph)	1092	974	3001
Starvation Cap Reductn	0	410	1340
Spillback Cap Reductn	206	20	28
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.72	0.61	0.65

Intersection Summary

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

8: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↑	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1356	0	369	886	0	0	0	0
Future Volume (vph)	0	0	0	0	1356	0	369	886	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0		6.0	6.0				
Lane Util. Factor					0.91		0.86	0.86				
Frt					1.00		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					5085		1537	4874				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					5085		1537	4874				
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.89	0.89	0.82	0.91	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1524	0	450	974	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	40	40	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1524	0	306	1038	0	0	0	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	0%	2%	2%	2%	2%
Turn Type					NA		custom	NA				
Protected Phases					1 7 8		2 3 4 5	2 3 4 5				
Permitted Phases							6	6				
Actuated Green, G (s)					32.0		85.0	85.0				
Effective Green, g (s)					30.0		83.0	83.0				
Actuated g/C Ratio					0.22		0.61	0.61				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)					1130		1013	3213				
v/s Ratio Prot					c0.30		0.09	c0.10				
v/s Ratio Perm							0.10	0.11				
v/c Ratio					1.35		0.30	0.32				
Uniform Delay, d1					52.5		12.3	12.5				
Progression Factor					0.85		0.63	0.48				
Incremental Delay, d2					162.5		0.0	0.0				
Delay (s)					207.0		7.7	6.0				
Level of Service					F		A	A				
Approach Delay (s)		0.0			207.0			6.4			0.0	
Approach LOS		A			F			A			A	
Intersection Summary												
HCM 2000 Control Delay			110.1				HCM 2000 Level of Service		F			
HCM 2000 Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			135.0				Sum of lost time (s)		40.0			
Intersection Capacity Utilization			76.1%				ICU Level of Service		D			
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	EBT	SBL	SBT
Lane Group Flow (vph)	1369	510	1586
v/c Ratio	1.15	0.50	0.50
Control Delay	123.4	4.6	4.6
Queue Delay	0.3	0.4	0.2
Total Delay	123.7	5.0	4.8
Queue Length 50th (ft)	~515	6	34
Queue Length 95th (ft)	#601	47	135
Internal Link Dist (ft)	69		291
Turn Bay Length (ft)			
Base Capacity (vph)	1191	1018	3160
Starvation Cap Reductn	0	170	585
Spillback Cap Reductn	68	38	58
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.22	0.60	0.62

Intersection Summary

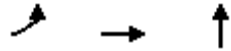
- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

9: S Lamar Blvd & Capity of Texas Hwy
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↑↑↑								↘	↑↑↑		
Traffic Volume (vph)	0	1218	0	0	0	0	0	0	0	680	1204	0	
Future Volume (vph)	0	1218	0	0	0	0	0	0	0	680	1204	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		2.0								6.0	6.0		
Lane Util. Factor		0.91								0.86	0.86		
Frbp, ped/bikes		1.00								1.00	1.00		
Flpb, ped/bikes		1.00								1.00	1.00		
Frt		1.00								1.00	1.00		
Flt Protected		1.00								0.95	0.99		
Satd. Flow (prot)		5187								1522	4846		
Flt Permitted		1.00								0.95	0.99		
Satd. Flow (perm)		5187								1522	4846		
Peak-hour factor, PHF	0.92	0.89	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.88	0.91	0.92	
Adj. Flow (vph)	0	1369	0	0	0	0	0	0	0	773	1323	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	37	37	0	
Lane Group Flow (vph)	0	1369	0	0	0	0	0	0	0	473	1549	0	
Confl. Bikes (#/hr)			1										
Heavy Vehicles (%)	2%	0%	0%	2%	2%	2%	2%	2%	2%	2%	0%	0%	
Turn Type		NA								custom	NA		
Protected Phases		3 4 5								1 2 6 8	1 2 6 8		
Permitted Phases										7	7		
Actuated Green, G (s)		27.0								88.0	88.0		
Effective Green, g (s)		21.0								88.0	88.0		
Actuated g/C Ratio		0.16								0.65	0.65		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)		806								1059	3374		
v/s Ratio Prot		c0.26								0.29	c0.30		
v/s Ratio Perm										0.02	0.02		
v/c Ratio		1.70								0.45	0.46		
Uniform Delay, d1		57.0								11.5	11.7		
Progression Factor		1.00								0.48	0.52		
Incremental Delay, d2		319.7								0.1	0.0		
Delay (s)		376.7								5.6	6.1		
Level of Service		F								A	A		
Approach Delay (s)		376.7			0.0			0.0			6.0		
Approach LOS		F			A			A			A		
Intersection Summary													
HCM 2000 Control Delay			152.4		HCM 2000 Level of Service						F		
HCM 2000 Volume to Capacity ratio			0.83										
Actuated Cycle Length (s)			135.0		Sum of lost time (s)					40.0			
Intersection Capacity Utilization			59.7%		ICU Level of Service					B			
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBL	EBT	NBT
Lane Group Flow (vph)	508	1472	1512
v/c Ratio	0.44	0.62	1.63
Control Delay	1.3	7.2	324.5
Queue Delay	4.6	7.3	0.0
Total Delay	5.9	14.6	324.5
Queue Length 50th (ft)	2	563	~547
Queue Length 95th (ft)	m0	m494	#556
Internal Link Dist (ft)		38	673
Turn Bay Length (ft)			
Base Capacity (vph)	1165	2362	926
Starvation Cap Reductn	571	848	0
Spillback Cap Reductn	0	0	2
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.86	0.97	1.64

Intersection Summary

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

10: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↙↘						↑↑↑				
Traffic Volume (vph)	502	1374	0	0	0	0	0	945	310	0	0	0
Future Volume (vph)	502	1374	0	0	0	0	0	945	310	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0						6.0				
Lane Util. Factor	0.91	0.91						0.86				
Frbp, ped/bikes	1.00	1.00						1.00				
Flpb, ped/bikes	1.00	1.00						1.00				
Frt	1.00	1.00						0.96				
Flt Protected	0.95	1.00						1.00				
Satd. Flow (prot)	1643	3419						6272				
Flt Permitted	0.95	1.00						1.00				
Satd. Flow (perm)	1643	3419						6272				
Peak-hour factor, PHF	0.89	0.97	0.92	0.92	0.92	0.92	0.92	0.83	0.83	0.92	0.92	0.92
Adj. Flow (vph)	564	1416	0	0	0	0	0	1139	373	0	0	0
RTOR Reduction (vph)	45	33	0	0	0	0	0	41	0	0	0	0
Lane Group Flow (vph)	463	1439	0	0	0	0	0	1471	0	0	0	0
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	0%	1%	2%	2%	2%	2%	2%	0%	0%	2%	2%	2%
Turn Type	custom	NA						NA				
Protected Phases	4 5 6 8	4 5 6 8						1 2 3				
Permitted Phases	7	7										
Actuated Green, G (s)	93.0	93.0						26.0				
Effective Green, g (s)	93.0	93.0						26.0				
Actuated g/C Ratio	0.69	0.69						0.19				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	1204	2507						1207				
v/s Ratio Prot	0.26	c0.39						c0.23				
v/s Ratio Perm	0.02	0.03										
v/c Ratio	0.38	0.57						1.22				
Uniform Delay, d1	8.9	10.8						54.5				
Progression Factor	0.18	0.91						1.00				
Incremental Delay, d2	0.0	0.1						106.1				
Delay (s)	1.6	10.0						160.6				
Level of Service	A	A						F				
Approach Delay (s)		7.8			0.0			160.6			0.0	
Approach LOS		A			A			F			A	
Intersection Summary												
HCM 2000 Control Delay			74.0					HCM 2000 Level of Service		E		
HCM 2000 Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			135.0					Sum of lost time (s)		40.0		
Intersection Capacity Utilization			63.9%					ICU Level of Service		B		
Analysis Period (min)			15									
c Critical Lane Group												






















Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	744	1542	27	158	190	176
v/c Ratio	2.62	2.64	0.07	0.32	0.12	0.15
Control Delay	761.0	766.9	0.3	7.9	1.3	25.9
Queue Delay	1.3	0.6	0.0	1.6	0.0	0.0
Total Delay	762.3	767.6	0.3	9.5	1.3	26.0
Queue Length 50th (ft)	~1158	~1202	0	19	4	27
Queue Length 95th (ft)	#1384	#1348	0	m18	m4	38
Internal Link Dist (ft)		364			236	206
Turn Bay Length (ft)						
Base Capacity (vph)	284	583	392	531	1630	1209
Starvation Cap Reductn	0	0	0	235	0	0
Spillback Cap Reductn	28	45	0	0	0	167
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	2.91	2.87	0.07	0.53	0.12	0.17

Intersection Summary

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

11: West Gate Blvd & US 290 WBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted PM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	0	0	1190	878	19	284	25	0	0	83	44	
Future Volume (vph)	0	0	0	1190	878	19	284	25	0	0	83	44	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				5.5	5.5	5.5	5.5	6.0			6.0		
Lane Util. Factor				0.91	0.91	1.00	0.91	0.91			0.91		
Frbp, ped/bikes				1.00	1.00	0.99	1.00	1.00			0.99		
Flpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00		
Frt				1.00	1.00	0.85	1.00	1.00			0.95		
Flt Protected				0.95	0.98	1.00	0.95	0.96			1.00		
Satd. Flow (prot)				1643	3371	1487	1625	3263			4774		
Flt Permitted				0.95	0.98	1.00	0.64	0.66			1.00		
Satd. Flow (perm)				1643	3371	1487	1088	2237			4774		
Peak-hour factor, PHF	0.92	0.92	0.92	0.88	0.94	0.70	0.90	0.79	0.92	0.92	0.74	0.69	
Adj. Flow (vph)	0	0	0	1352	934	27	316	32	0	0	112	64	
RTOR Reduction (vph)	0	0	0	0	0	22	0	0	0	0	48	0	
Lane Group Flow (vph)	0	0	0	744	1542	5	158	190	0	0	128	0	
Confl. Peds. (#/hr)							2					2	
Confl. Bikes (#/hr)						2							
Heavy Vehicles (%)	2%	2%	2%	0%	1%	7%	1%	5%	2%	2%	0%	6%	
Turn Type				Perm	NA	Perm	custom	NA				NA	
Protected Phases					4 5			1 2 6 7				1 2	
Permitted Phases				4 5		4 5	6 7						
Actuated Green, G (s)				22.0	22.0	22.0	58.9	96.5				32.1	
Effective Green, g (s)				22.0	22.0	22.0	58.9	85.5				32.1	
Actuated g/C Ratio				0.17	0.17	0.17	0.45	0.66				0.25	
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				278	570	251	492	1471				1178	
v/s Ratio Prot												0.03	
v/s Ratio Perm				0.45	0.46	0.00	c0.15	c0.08					
v/c Ratio				2.68	2.71	0.02	0.32	0.13				0.11	
Uniform Delay, d1				54.0	54.0	45.0	22.8	8.3				37.9	
Progression Factor				1.00	1.00	1.00	0.31	0.25				1.00	
Incremental Delay, d2				764.5	772.3	0.1	0.1	0.0				0.0	
Delay (s)				818.5	826.3	45.1	7.2	2.1				37.9	
Level of Service				F	F	D	A	A				D	
Approach Delay (s)		0.0			814.7			4.4				37.9	
Approach LOS		A			F			A				D	
Intersection Summary													
HCM 2000 Control Delay			667.1		HCM 2000 Level of Service							F	
HCM 2000 Volume to Capacity ratio			0.86										
Actuated Cycle Length (s)			130.0		Sum of lost time (s)						34.0		
Intersection Capacity Utilization			93.5%		ICU Level of Service						F		
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	31	948	614	287	117	1369
v/c Ratio	0.05	0.73	0.90	0.59	0.21	0.71
Control Delay	24.6	37.3	56.9	10.5	58.5	25.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	49.2
Total Delay	24.6	37.3	56.9	10.5	58.5	74.6
Queue Length 50th (ft)	16	339	218	0	76	305
Queue Length 95th (ft)	27	365	#329	59	m34	m4
Internal Link Dist (ft)		52	369			236
Turn Bay Length (ft)						
Base Capacity (vph)	676	1295	682	489	565	1937
Starvation Cap Reductn	0	0	0	0	0	837
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.73	0.90	0.59	0.21	1.24

Intersection Summary

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

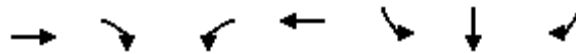
Queue shown is maximum after two cycles.

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

12: West Gate Blvd & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	560	251	0	0	0	0	297	477	96	1205	0
Future Volume (vph)	21	560	251	0	0	0	0	297	477	96	1205	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0						6.0	6.0	5.5	5.5	
Lane Util. Factor	1.00	0.95						0.91	0.91	1.00	0.95	
Frpb, ped/bikes	1.00	1.00						0.99	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00						1.00	1.00	1.00	1.00	
Frt	1.00	0.96						0.93	0.85	1.00	1.00	
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3407						3161	1433	1805	3610	
Flt Permitted	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3407						3161	1433	1805	3610	
Peak-hour factor, PHF	0.67	0.83	0.92	0.92	0.92	0.92	0.92	0.91	0.83	0.82	0.88	0.92
Adj. Flow (vph)	31	675	273	0	0	0	0	326	575	117	1369	0
RTOR Reduction (vph)	0	19	0	0	0	0	0	122	235	0	0	0
Lane Group Flow (vph)	31	929	0	0	0	0	0	492	52	117	1369	0
Confl. Peds. (#/hr)			1						1	1		
Confl. Bikes (#/hr)			1						1			
Heavy Vehicles (%)	0%	1%	1%	2%	2%	2%	2%	1%	1%	0%	0%	0%
Turn Type	Split	NA						NA	Perm	Prot	NA	
Protected Phases	1 7	1 7						5 6		2 4	2 4 5 6	
Permitted Phases									5 6			
Actuated Green, G (s)	48.8	48.8						23.5	23.5	40.7	69.7	
Effective Green, g (s)	43.3	43.3						23.5	23.5	40.7	63.7	
Actuated g/C Ratio	0.33	0.33						0.18	0.18	0.31	0.49	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	601	1134						571	259	565	1768	
v/s Ratio Prot	0.02	c0.27						c0.16		0.06	c0.38	
v/s Ratio Perm									0.04			
v/c Ratio	0.05	0.82						0.86	0.20	0.21	0.77	
Uniform Delay, d1	29.4	39.8						51.7	45.3	32.8	27.2	
Progression Factor	1.00	1.00						1.00	1.00	1.70	1.08	
Incremental Delay, d2	0.0	4.5						15.7	1.7	0.1	0.3	
Delay (s)	29.4	44.2						67.3	47.0	55.7	29.6	
Level of Service	C	D						E	D	E	C	
Approach Delay (s)		43.8			0.0			60.9			31.7	
Approach LOS		D			A			E			C	
Intersection Summary												
HCM 2000 Control Delay			43.0		HCM 2000 Level of Service						D	
HCM 2000 Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			130.0		Sum of lost time (s)					34.0		
Intersection Capacity Utilization			93.5%		ICU Level of Service					F		
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	2531	1302	216	2409	276	291	277
v/c Ratio	0.78	1.23	0.98	0.61	1.05	1.08	0.17
Control Delay	26.0	139.5	115.4	14.0	140.0	145.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.0	139.5	115.4	14.0	140.0	145.0	0.2
Queue Length 50th (ft)	761	~1835	218	963	~373	~400	0
Queue Length 95th (ft)	810	#2102	m#310	731	#543	#593	0
Internal Link Dist (ft)	834			1419		192	
Turn Bay Length (ft)		515	950				
Base Capacity (vph)	3252	1060	220	3966	262	270	1595
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	1.23	0.98	0.61	1.05	1.08	0.17

Intersection Summary

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

13: Capital of Texas Hwy & Mopac SBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗	↘	↑↑↑					↘	↗	↗
Traffic Volume (vph)	0	2430	1224	171	2313	0	0	0	0	286	206	213
Future Volume (vph)	0	2430	1224	171	2313	0	0	0	0	286	206	213
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0	7.0	7.0					6.5	6.5	4.0
Lane Util. Factor		0.91	1.00	1.00	0.91					0.95	0.95	1.00
Frbp, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	0.99
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		5136	1599	1787	5136					1715	1773	1595
Flt Permitted		1.00	1.00	0.03	1.00					0.95	0.99	1.00
Satd. Flow (perm)		5136	1599	62	5136					1715	1773	1595
Peak-hour factor, PHF	0.92	0.96	0.94	0.79	0.96	0.92	0.92	0.92	0.92	0.86	0.88	0.77
Adj. Flow (vph)	0	2531	1302	216	2409	0	0	0	0	333	234	277
RTOR Reduction (vph)	0	0	47	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2531	1255	216	2409	0	0	0	0	276	291	277
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	1%	1%	1%	1%	2%	2%	2%	2%	0%	1%	0%
Turn Type		NA	Perm	pm+pt	NA					Perm	NA	Free
Protected Phases		2		1	6						8	
Permitted Phases			2	6						8		Free
Actuated Green, G (s)		114.0	114.0	139.0	139.0					27.5	27.5	180.0
Effective Green, g (s)		114.0	114.0	139.0	139.0					27.5	27.5	180.0
Actuated g/C Ratio		0.63	0.63	0.77	0.77					0.15	0.15	1.00
Clearance Time (s)		7.0	7.0	7.0	7.0					6.5	6.5	
Vehicle Extension (s)		4.0	4.0	2.0	4.0					2.0	2.0	
Lane Grp Cap (vph)		3252	1012	220	3966					262	270	1595
v/s Ratio Prot		0.49		c0.10	0.47							
v/s Ratio Perm			c0.78	0.66						0.16	0.16	0.17
v/c Ratio		0.78	1.24	0.98	0.61					1.05	1.08	0.17
Uniform Delay, d1		23.9	33.0	66.2	8.8					76.2	76.2	0.0
Progression Factor		1.00	1.00	1.27	1.53					1.00	1.00	1.00
Incremental Delay, d2		1.9	116.4	45.0	0.5					70.3	77.0	0.2
Delay (s)		25.8	149.4	128.9	13.9					146.6	153.2	0.2
Level of Service		C	F	F	B					F	F	A
Approach Delay (s)		67.8			23.3			0.0			100.9	
Approach LOS		E			C			A			F	
Intersection Summary												
HCM 2000 Control Delay			55.6			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			1.18									
Actuated Cycle Length (s)			180.0			Sum of lost time (s)				20.5		
Intersection Capacity Utilization			115.7%			ICU Level of Service				H		
Analysis Period (min)			15									

c Critical Lane Group






















Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	322	2661	1735	1997	908	97	354
v/c Ratio	0.60	1.03	0.84	1.25	0.89	0.25	0.96
Control Delay	37.6	46.5	44.1	136.9	81.4	62.0	93.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.6	46.5	44.1	136.9	81.4	62.0	93.6
Queue Length 50th (ft)	231	~806	612	~1271	371	97	347
Queue Length 95th (ft)	m350	m#870	m597	#1286	403	153	#453
Internal Link Dist (ft)		1419	756			675	
Turn Bay Length (ft)					300		
Base Capacity (vph)	540	2588	2596	1599	1060	395	381
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	1.03	0.67	1.25	0.86	0.25	0.93

Intersection Summary

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

14: Mopac NBFR & Capital of Texas Hwy
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	283	2501	0	0	1700	1837	781	85	290	0	0	0
Future Volume (veh/h)	283	2501	0	0	1700	1837	781	85	290	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1881	0	0	1881	1881	1900	1900	1881			
Adj Flow Rate, veh/h	322	2661	0	0	1735	0	908	97	0			
Adj No. of Lanes	1	2	0	0	3	1	3	1	1			
Peak Hour Factor	0.88	0.94	0.92	0.92	0.98	0.92	0.86	0.88	0.82			
Percent Heavy Veh, %	2	1	0	0	1	1	0	0	1			
Cap, veh/h	638	2628	0	0	1869	582	969	361	304			
Arrive On Green	0.66	1.00	0.00	0.00	0.36	0.00	0.19	0.19	0.00			
Sat Flow, veh/h	1774	3668	0	0	5305	1599	5103	1900	1599			
Grp Volume(v), veh/h	322	2661	0	0	1735	0	908	97	0			
Grp Sat Flow(s),veh/h/ln	1774	1787	0	0	1712	1599	1701	1900	1599			
Q Serve(g_s), s	9.6	132.3	0.0	0.0	58.4	0.0	31.6	7.8	0.0			
Cycle Q Clear(g_c), s	9.6	132.3	0.0	0.0	58.4	0.0	31.6	7.8	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	638	2628	0	0	1869	582	969	361	304			
V/C Ratio(X)	0.51	1.01	0.00	0.00	0.93	0.00	0.94	0.27	0.00			
Avail Cap(c_a), veh/h	638	2628	0	0	2596	808	1063	396	333			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.49	0.49	0.00	0.00	1.00	0.00	1.00	1.00	0.00			
Uniform Delay (d), s/veh	21.0	0.0	0.0	0.0	55.0	0.0	71.9	62.2	0.0			
Incr Delay (d2), s/veh	1.4	15.6	0.0	0.0	4.3	0.0	13.7	0.1	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			
%ile BackOfQ(50%),veh/ln	7.2	5.7	0.0	0.0	28.4	0.0	16.1	4.1	0.0			
LnGrp Delay(d),s/veh	22.4	15.6	0.0	0.0	59.3	0.0	85.5	62.4	0.0			
LnGrp LOS	C	F			E		F	E				
Approach Vol, veh/h		2983			1735			1005				
Approach Delay, s/veh		16.3			59.3			83.3				
Approach LOS		B			E			F				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		139.3		40.7	66.8	72.5						
Change Period (Y+Rc), s		7.0		6.5	7.0	7.0						
Max Green Setting (Gmax), s		129.0		37.5	31.0	91.0						
Max Q Clear Time (g_c+I1), s		134.3		33.6	11.6	60.4						
Green Ext Time (p_c), s		0.0		0.6	0.1	5.1						
Intersection Summary												
HCM 2010 Ctrl Delay				41.1								
HCM 2010 LOS				D								



Lane Group	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	248	3623	50	314	4799
v/c Ratio	0.48	0.95	0.04	0.95	1.25
Control Delay	68.4	27.1	1.5	101.1	142.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	68.4	27.1	1.5	101.1	142.1
Queue Length 50th (ft)	148	1283	0	365	~2603
Queue Length 95th (ft)	170	1329	4	m379	m#2534
Internal Link Dist (ft)		1281			1273
Turn Bay Length (ft)			430	550	
Base Capacity (vph)	538	3824	1169	340	3824
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.46	0.95	0.04	0.92	1.25

Intersection Summary

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

15: Capital of Texas Hwy & Barton Creek Plaza Driveway
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↔↔	↕↕↕	↗	↘	↕↕↕
Traffic Volume (vph)	0	191	3369	32	242	4559
Future Volume (vph)	0	191	3369	32	242	4559
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	7.0	7.0	6.0	7.0
Lane Util. Factor		0.88	0.91	1.00	1.00	0.91
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		2842	5136	1553	1805	5136
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		2842	5136	1553	1805	5136
Peak-hour factor, PHF	0.92	0.77	0.93	0.64	0.77	0.95
Adj. Flow (vph)	0	248	3623	50	314	4799
RTOR Reduction (vph)	0	2	0	13	0	0
Lane Group Flow (vph)	0	246	3623	37	314	4799
Heavy Vehicles (%)	2%	0%	1%	4%	0%	1%
Turn Type		Over	NA	Prot	Prot	NA
Protected Phases		5	6	6	5	6
Permitted Phases						
Actuated Green, G (s)		33.0	134.0	134.0	33.0	134.0
Effective Green, g (s)		33.0	134.0	134.0	33.0	134.0
Actuated g/C Ratio		0.18	0.74	0.74	0.18	0.74
Clearance Time (s)		6.0	7.0	7.0	6.0	7.0
Vehicle Extension (s)		2.0	4.0	4.0	2.0	4.0
Lane Grp Cap (vph)		521	3823	1156	330	3823
v/s Ratio Prot		0.09	0.71	0.02	c0.17	c0.93
v/s Ratio Perm						
v/c Ratio		0.47	0.95	0.03	0.95	1.26
Uniform Delay, d1		65.7	20.0	6.0	72.7	23.0
Progression Factor		1.00	1.00	1.00	0.94	1.08
Incremental Delay, d2		0.2	6.7	0.1	32.1	116.7
Delay (s)		66.0	26.6	6.1	100.1	141.6
Level of Service		E	C	A	F	F
Approach Delay (s)	66.0		26.3			139.0
Approach LOS	E		C			F
Intersection Summary						
HCM 2000 Control Delay			91.2		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.19			
Actuated Cycle Length (s)			180.0		Sum of lost time (s)	13.0
Intersection Capacity Utilization			93.9%		ICU Level of Service	F
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	145	1342	128	151	522	100
v/c Ratio	0.16	0.68	0.69	0.24	1.20	0.22
Control Delay	14.9	22.8	42.8	15.8	152.9	6.6
Queue Delay	0.1	0.0	0.0	1.4	1.1	0.0
Total Delay	15.0	22.8	42.8	17.2	154.0	6.6
Queue Length 50th (ft)	59	410	48	56	~558	0
Queue Length 95th (ft)	m92	m478	m46	m70	#767	18
Internal Link Dist (ft)		522		175	200	
Turn Bay Length (ft)			70			90
Base Capacity (vph)	925	1986	190	635	436	445
Starvation Cap Reductn	0	0	0	327	0	0
Spillback Cap Reductn	287	0	0	0	48	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.68	0.67	0.49	1.35	0.22

Intersection Summary

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

16: US 290 WBFR & Victory Drive
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations				↖	↕		↖	↕			↕	↗	
Traffic Volume (vph)	0	0	0	141	1132	129	73	119	0	0	465	75	
Future Volume (vph)	0	0	0	141	1132	129	73	119	0	0	465	75	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				5.5	5.5		5.5	4.5			4.5	4.5	
Lane Util. Factor				1.00	0.95		1.00	1.00			1.00	1.00	
Frbp, ped/bikes				1.00	1.00		1.00	1.00			1.00	0.98	
Flpb, ped/bikes				1.00	1.00		1.00	1.00			1.00	1.00	
Frt				1.00	0.98		1.00	1.00			1.00	0.85	
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00	
Satd. Flow (prot)				1612	3449		1805	1827			1792	1476	
Flt Permitted				0.95	1.00		0.14	1.00			1.00	1.00	
Satd. Flow (perm)				1612	3449		268	1827			1792	1476	
Peak-hour factor, PHF	0.92	0.92	0.92	0.97	0.95	0.86	0.57	0.79	0.92	0.92	0.89	0.75	
Adj. Flow (vph)	0	0	0	145	1192	150	128	151	0	0	522	100	
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	0	0	0	76	
Lane Group Flow (vph)	0	0	0	145	1335	0	128	151	0	0	522	24	
Confl. Peds. (#/hr)						1	6					6	
Confl. Bikes (#/hr)												3	
Heavy Vehicles (%)	2%	2%	2%	12%	2%	8%	0%	4%	2%	2%	6%	7%	
Turn Type				Split	NA		pm+pt	NA			NA	Perm	
Protected Phases				7 8	7 8		2	1 2 6			1 6		
Permitted Phases							1 2 6					1 6	
Actuated Green, G (s)				77.0	77.0		42.0	47.5			32.9	32.9	
Effective Green, g (s)				77.0	77.0		37.5	42.0			32.9	32.9	
Actuated g/C Ratio				0.57	0.57		0.28	0.31			0.24	0.24	
Clearance Time (s)							5.5						
Vehicle Extension (s)							1.5						
Lane Grp Cap (vph)				919	1967		178	568			436	359	
v/s Ratio Prot				0.09	c0.39		c0.05	0.08			c0.29		
v/s Ratio Perm							0.15					0.02	
v/c Ratio				0.16	0.68		0.72	0.27			1.20	0.07	
Uniform Delay, d1				13.7	20.3		40.3	34.9			51.0	39.3	
Progression Factor				1.06	1.05		0.76	0.48			1.00	1.00	
Incremental Delay, d2				0.0	0.7		10.0	0.1			109.1	0.0	
Delay (s)				14.6	22.0		40.5	16.9			160.2	39.3	
Level of Service				B	C		D	B			F	D	
Approach Delay (s)		0.0			21.3			27.7			140.8		
Approach LOS		A			C			C			F		
Intersection Summary													
HCM 2000 Control Delay			53.2		HCM 2000 Level of Service						D		
HCM 2000 Volume to Capacity ratio			0.90										
Actuated Cycle Length (s)			135.0		Sum of lost time (s)						26.0		
Intersection Capacity Utilization			114.5%		ICU Level of Service						H		
Analysis Period (min)			15										
c Critical Lane Group													

























Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	2240	159	129	521	155
v/c Ratio	1.10	0.24	0.23	0.89	0.17
Control Delay	96.4	32.2	15.8	27.2	3.6
Queue Delay	0.0	0.0	0.0	3.5	1.9
Total Delay	96.4	32.2	15.8	30.6	5.5
Queue Length 50th (ft)	~829	98	35	243	14
Queue Length 95th (ft)	m#788	136	72	m171	m14
Internal Link Dist (ft)	53	253			175
Turn Bay Length (ft)			125	70	
Base Capacity (vph)	2031	661	556	588	911
Starvation Cap Reductn	0	0	0	28	615
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.10	0.24	0.23	0.93	0.52

Intersection Summary

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

17: Pack Saddle Pass & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  							 	 	 	
Traffic Volume (vph)	66	1932	82	0	0	0	0	127	106	453	138	0
Future Volume (vph)	66	1932	82	0	0	0	0	127	106	453	138	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0						4.5	4.5	5.5	4.5	
Lane Util. Factor		0.91						1.00	1.00	1.00	1.00	
Frbp, ped/bikes		1.00						1.00	1.00	1.00	1.00	
Flpb, ped/bikes		1.00						1.00	1.00	1.00	1.00	
Frt		0.99						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		5071						1900	1468	1719	1759	
Flt Permitted		1.00						1.00	1.00	0.59	1.00	
Satd. Flow (perm)		5071						1900	1468	1063	1759	
Peak-hour factor, PHF	0.81	0.94	0.79	0.92	0.92	0.92	0.92	0.80	0.82	0.87	0.89	0.92
Adj. Flow (vph)	81	2055	104	0	0	0	0	159	129	521	155	0
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	48	0	0	0
Lane Group Flow (vph)	0	2236	0	0	0	0	0	159	81	521	155	0
Confl. Bikes (#/hr)			3						1			
Heavy Vehicles (%)	10%	1%	0%	2%	2%	2%	2%	0%	10%	5%	8%	2%
Turn Type	Split	NA						NA	Prot	D.P+P	NA	
Protected Phases	8	8						1 2 6	1 2 6	7	1 2 6 7	
Permitted Phases										1 2 6		
Actuated Green, G (s)		54.0						47.5	47.5	65.0	69.5	
Effective Green, g (s)		54.0						42.0	42.0	60.5	64.0	
Actuated g/C Ratio		0.40						0.31	0.31	0.45	0.47	
Clearance Time (s)		6.0								5.5		
Vehicle Extension (s)		1.5								1.5		
Lane Grp Cap (vph)		2028						591	456	561	833	
v/s Ratio Prot		c0.44						0.08	0.06	c0.12	0.09	
v/s Ratio Perm										c0.30		
v/c Ratio		1.10						0.27	0.18	0.93	0.19	
Uniform Delay, d1		40.5						35.0	33.9	36.0	20.5	
Progression Factor		1.18						1.00	1.00	0.61	0.20	
Incremental Delay, d2		52.2						0.1	0.1	8.7	0.0	
Delay (s)		100.1						35.0	34.0	30.6	4.2	
Level of Service		F						D	C	C	A	
Approach Delay (s)		100.1			0.0			34.6			24.6	
Approach LOS		F			A			C			C	
Intersection Summary												
HCM 2000 Control Delay			78.2									E
HCM 2000 Volume to Capacity ratio			1.06									
Actuated Cycle Length (s)			135.0							26.0		
Intersection Capacity Utilization			114.5%									H
Analysis Period (min)			15									

c Critical Lane Group



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	572	1174	587	400	696	1354
v/c Ratio	1.32	1.31	0.93	0.63	0.30	1.00
Control Delay	202.4	188.7	49.8	13.8	5.2	77.3
Queue Delay	0.2	0.1	0.0	30.3	3.2	0.0
Total Delay	202.6	188.8	49.8	44.1	8.5	77.3
Queue Length 50th (ft)	~792	~807	334	71	51	481
Queue Length 95th (ft)	#1052	#953	#576	m70	m50	#594
Internal Link Dist (ft)		53			174	314
Turn Bay Length (ft)						
Base Capacity (vph)	433	899	633	637	2358	1357
Starvation Cap Reductn	0	0	0	247	1532	0
Spillback Cap Reductn	7	15	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.34	1.33	0.93	1.03	0.84	1.00

Intersection Summary

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

18: US 290 WBFR & Menchaca Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	868	774	569	340	633	0	0	1088	171
Future Volume (vph)	0	0	0	868	774	569	340	633	0	0	1088	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0	6.0	6.0	6.0	5.0			5.0	
Lane Util. Factor				0.91	0.91	1.00	1.00	0.95			0.91	
Frt				1.00	1.00	0.85	1.00	1.00			0.98	
Flt Protected				0.95	0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1626	3373	1615	1805	3574			5024	
Flt Permitted				0.95	0.99	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1626	3373	1615	1805	3574			5024	
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.97	0.85	0.91	0.92	0.92	0.95	0.82
Adj. Flow (vph)	0	0	0	923	823	587	400	696	0	0	1145	209
RTOR Reduction (vph)	0	0	0	0	0	201	0	0	0	0	18	0
Lane Group Flow (vph)	0	0	0	572	1174	386	400	696	0	0	1336	0
Heavy Vehicles (%)	2%	2%	2%	1%	1%	0%	0%	1%	2%	2%	1%	0%
Turn Type				Perm	NA	Perm	Prot	NA			NA	
Protected Phases					8 9		4 13	1 4 13				1
Permitted Phases				8 9		8 9						
Actuated Green, G (s)				41.0	41.0	41.0	53.0	98.0			40.0	
Effective Green, g (s)				41.0	41.0	41.0	48.0	98.0			40.0	
Actuated g/C Ratio				0.27	0.27	0.27	0.32	0.65			0.27	
Clearance Time (s)											5.0	
Vehicle Extension (s)											1.0	
Lane Grp Cap (vph)				444	921	441	577	2335			1339	
v/s Ratio Prot							c0.22	0.19			c0.27	
v/s Ratio Perm				c0.35	0.35	0.24						
v/c Ratio				1.29	1.27	0.87	0.69	0.30			1.00	
Uniform Delay, d1				54.5	54.5	52.0	44.6	11.2			55.0	
Progression Factor				1.00	1.00	1.00	0.33	0.48			1.00	
Incremental Delay, d2				145.8	132.1	16.8	0.3	0.0			23.9	
Delay (s)				200.3	186.6	68.9	14.8	5.4			78.9	
Level of Service				F	F	E	B	A			E	
Approach Delay (s)		0.0			160.3			8.8			78.9	
Approach LOS		A			F			A			E	
Intersection Summary												
HCM 2000 Control Delay			102.6									F
HCM 2000 Volume to Capacity ratio			1.02									
Actuated Cycle Length (s)			150.0						27.0			
Intersection Capacity Utilization			120.9%									H
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	260	577	479	1265	598	1583
v/c Ratio	0.94	1.05	1.51	1.15	0.64	0.57
Control Delay	103.2	112.6	279.3	126.4	5.5	0.6
Queue Delay	0.0	0.0	0.0	0.0	37.8	31.3
Total Delay	103.2	112.6	279.3	126.5	43.4	31.9
Queue Length 50th (ft)	255	~323	~577	~506	67	10
Queue Length 95th (ft)	#399	#448	#805	#606	m56	m8
Internal Link Dist (ft)		62		300		174
Turn Bay Length (ft)						
Base Capacity (vph)	276	548	317	1099	932	2763
Starvation Cap Reductn	0	0	0	0	368	1267
Spillback Cap Reductn	0	0	0	10	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.94	1.05	1.51	1.16	1.06	1.06

Intersection Summary

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

19: Menchaca Road & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Forecasted PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	224	554	441	0	0	0	0	747	397	508	1488	0	
Future Volume (vph)	224	554	441	0	0	0	0	747	397	508	1488	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.0	6.0	6.0					5.0		5.0	5.0		
Lane Util. Factor	1.00	0.95	1.00					0.91		1.00	0.95		
Frbp, ped/bikes	1.00	1.00	0.99					1.00		1.00	1.00		
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00		
Frt	1.00	1.00	0.85					0.95		1.00	1.00		
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00		
Satd. Flow (prot)	1805	3574	1593					4831		1770	3574		
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00		
Satd. Flow (perm)	1805	3574	1593					4831		1770	3574		
Peak-hour factor, PHF	0.86	0.96	0.92	0.92	0.92	0.92	0.92	0.93	0.86	0.85	0.94	0.92	
Adj. Flow (vph)	260	577	479	0	0	0	0	803	462	598	1583	0	
RTOR Reduction (vph)	0	0	74	0	0	0	0	69	0	0	0	0	
Lane Group Flow (vph)	260	577	405	0	0	0	0	1196	0	598	1583	0	
Confl. Bikes (#/hr)			1						1				
Heavy Vehicles (%)	0%	1%	0%	2%	2%	2%	2%	1%	1%	2%	1%	2%	
Turn Type	Perm	NA	Perm					NA		Prot	NA		
Protected Phases		4 8						13		1 9	1 9 13		
Permitted Phases	4 8		4 8										
Actuated Green, G (s)	23.0	23.0	23.0					32.0		79.0	116.0		
Effective Green, g (s)	23.0	23.0	23.0					32.0		79.0	116.0		
Actuated g/C Ratio	0.15	0.15	0.15					0.21		0.53	0.77		
Clearance Time (s)								5.0					
Vehicle Extension (s)								1.0					
Lane Grp Cap (vph)	276	548	244					1030		932	2763		
v/s Ratio Prot		0.16						c0.25		c0.34	0.44		
v/s Ratio Perm	0.14		c0.25										
v/c Ratio	0.94	1.05	1.66					1.16		0.64	0.57		
Uniform Delay, d1	62.8	63.5	63.5					59.0		25.4	6.9		
Progression Factor	1.00	1.00	1.00					1.00		0.20	0.07		
Incremental Delay, d2	38.3	53.1	315.1					83.4		0.1	0.0		
Delay (s)	101.1	116.6	378.6					142.4		5.2	0.5		
Level of Service	F	F	F					F		A	A		
Approach Delay (s)		208.9			0.0			142.4			1.8		
Approach LOS		F			A			F			A		
Intersection Summary													
HCM 2000 Control Delay			96.4									HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.02										
Actuated Cycle Length (s)			150.0									Sum of lost time (s)	27.0
Intersection Capacity Utilization			120.9%									ICU Level of Service	H
Analysis Period (min)			15										

c Critical Lane Group

Intersection												
Int Delay, s/veh	18											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	55	103	180	16	100	5	166	16	41	4	24	32
Future Vol, veh/h	55	103	180	16	100	5	166	16	41	4	24	32
Conflicting Peds, #/hr	14	0	9	9	0	14	6	0	11	11	0	6
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	87	87	50	76	50	80	75	60	60	56	75
Heavy Vehicles, %	0	0	7	0	0	0	5	0	0	0	0	0
Mvmt Flow	81	118	207	32	132	10	208	21	68	7	43	43

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	156	0	0	334	0	0	643	613	242	654	711	157
Stage 1	-	-	-	-	-	-	393	393	-	215	215	-
Stage 2	-	-	-	-	-	-	250	220	-	439	496	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.15	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.545	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1436	-	-	1237	-	-	382	410	802	383	361	894
Stage 1	-	-	-	-	-	-	626	609	-	792	729	-
Stage 2	-	-	-	-	-	-	747	725	-	601	549	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1417	-	-	1226	-	-	298	362	787	302	318	877
Mov Cap-2 Maneuver	-	-	-	-	-	-	298	362	-	302	318	-
Stage 1	-	-	-	-	-	-	576	560	-	725	699	-
Stage 2	-	-	-	-	-	-	645	695	-	485	505	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.5			1.5			51.2			15.1		
HCM LOS							F			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	353	1417	-	-	1226	-	-	449
HCM Lane V/C Ratio	0.842	0.057	-	-	0.026	-	-	0.205
HCM Control Delay (s)	51.2	7.7	0	-	8	0	-	15.1
HCM Lane LOS	F	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	7.6	0.2	-	-	0.1	-	-	0.8



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	402	551	2187	345	347	965
v/c Ratio	0.46	0.94	1.11	0.37	1.87	0.41
Control Delay	44.0	65.2	78.5	2.8	434.6	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.0	65.2	78.5	2.8	434.6	11.0
Queue Length 50th (ft)	153	459	~1150	30	~415	190
Queue Length 95th (ft)	204	#651	#1187	15	#511	230
Internal Link Dist (ft)	497		121			322
Turn Bay Length (ft)		125			125	
Base Capacity (vph)	881	589	1966	935	186	2336
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.94	1.11	0.37	1.87	0.41

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

1: S Lamar Blvd & W Oltorf Street
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted AM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶↷	↷	↶↷	↷	↶	↶↷
Traffic Volume (vph)	362	479	1881	276	274	936
Future Volume (vph)	362	479	1881	276	274	936
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1583	3539	1525	1770	3505
Flt Permitted	0.95	1.00	1.00	1.00	0.05	1.00
Satd. Flow (perm)	3400	1583	3539	1525	93	3505
Peak-hour factor, PHF	0.90	0.87	0.86	0.80	0.79	0.97
Adj. Flow (vph)	402	551	2187	345	347	965
RTOR Reduction (vph)	0	3	0	88	0	0
Lane Group Flow (vph)	402	548	2187	257	347	965
Confl. Peds. (#/hr)		4		2	2	
Confl. Bikes (#/hr)		1		5		
Heavy Vehicles (%)	3%	2%	2%	4%	2%	3%
Turn Type	Prot	pt+ov	NA	Perm	pm+pt	NA
Protected Phases	4	1 4	2		1	6
Permitted Phases		4		2	6	
Actuated Green, G (s)	35.0	50.0	75.0	75.0	90.0	90.0
Effective Green, g (s)	35.0	50.0	75.0	75.0	90.0	90.0
Actuated g/C Ratio	0.26	0.37	0.56	0.56	0.67	0.67
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	1.0		1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	881	586	1966	847	186	2336
v/s Ratio Prot	0.12	c0.35	0.62		c0.14	0.28
v/s Ratio Perm				0.17	c1.10	
v/c Ratio	0.46	0.93	1.11	0.30	1.87	0.41
Uniform Delay, d1	42.0	40.9	30.0	16.0	47.1	10.4
Progression Factor	1.00	1.00	0.69	0.31	1.00	1.00
Incremental Delay, d2	1.7	24.2	56.2	0.6	409.4	0.5
Delay (s)	43.7	65.1	76.9	5.6	456.4	10.9
Level of Service	D	E	E	A	F	B
Approach Delay (s)	56.1		67.2			128.7
Approach LOS	E		E			F

Intersection Summary			
HCM 2000 Control Delay	81.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.65		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	90.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	111	229	116	162	2045	85	43	1547
v/c Ratio	0.42	0.50	0.69	0.46	0.85	0.09	0.81	0.92
Control Delay	49.9	27.1	54.4	31.5	14.3	1.8	112.2	45.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.9	27.1	54.4	31.5	14.3	1.8	112.2	45.0
Queue Length 50th (ft)	86	91	56	77	265	1	23	625
Queue Length 95th (ft)	111	108	110	m110	524	m7	#49	637
Internal Link Dist (ft)		215	74		201			588
Turn Bay Length (ft)	75			50		125	50	
Base Capacity (vph)	264	560	360	351	2420	997	58	1849
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.41	0.32	0.46	0.85	0.09	0.74	0.84

Intersection Summary

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

Queue shown is maximum after two cycles.

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

2: S Lamar Blvd & Bluebonnet Lane
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗			↖		↖	↕	↗	↖	↗	
Traffic Volume (vph)	82	31	152	0	37	52	147	1677	69	26	1264	3
Future Volume (vph)	82	31	152	0	37	52	147	1677	69	26	1264	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	0.99			0.99		1.00	1.00	0.96	1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.88			0.92		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1769	1619			1718		1787	3505	1412	1703	3469	
Flt Permitted	0.30	1.00			1.00		0.06	1.00	1.00	0.06	1.00	
Satd. Flow (perm)	567	1619			1718		106	3505	1412	109	3469	
Peak-hour factor, PHF	0.74	0.71	0.82	0.87	0.86	0.71	0.91	0.82	0.81	0.61	0.82	0.50
Adj. Flow (vph)	111	44	185	0	43	73	162	2045	85	43	1541	6
RTOR Reduction (vph)	0	89	0	0	47	0	0	0	23	0	0	0
Lane Group Flow (vph)	111	140	0	0	69	0	162	2045	62	43	1547	0
Confl. Peds. (#/hr)	1		4	4			1	7		6		7
Confl. Bikes (#/hr)							1					1
Heavy Vehicles (%)	2%	0%	2%	3%	0%	0%	1%	3%	10%	6%	4%	0%
Turn Type	pm+pt	NA			NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4						2		2	6		
Actuated Green, G (s)	30.8	30.8			9.6		93.2	93.2	93.2	65.8	65.8	
Effective Green, g (s)	30.8	30.8			9.6		93.2	93.2	93.2	65.8	65.8	
Actuated g/C Ratio	0.23	0.23			0.07		0.69	0.69	0.69	0.49	0.49	
Clearance Time (s)	6.0	6.0			6.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0			2.0		1.0	1.0	1.0	1.0	1.0	
Lane Grp Cap (vph)	264	369			122		352	2419	974	53	1690	
v/s Ratio Prot	0.05	c0.09			c0.04		0.08	c0.58			c0.45	
v/s Ratio Perm	0.05						0.24		0.04	0.39		
v/c Ratio	0.42	0.38			0.56		0.46	0.85	0.06	0.81	0.92	
Uniform Delay, d1	43.2	44.0			60.7		31.8	15.5	6.8	29.3	32.0	
Progression Factor	1.00	1.00			1.00		1.16	0.78	0.97	1.14	1.14	
Incremental Delay, d2	0.4	0.2			3.5		2.1	2.0	0.1	74.0	8.9	
Delay (s)	43.6	44.3			64.2		39.0	14.2	6.6	107.5	45.3	
Level of Service	D	D			E		D	B	A	F	D	
Approach Delay (s)		44.1			64.2			15.6			47.0	
Approach LOS		D			E			B			D	

Intersection Summary

HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	93.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	841	1676	8	455	1225
v/c Ratio	0.99	0.78	0.01	0.87	0.54
Control Delay	72.5	12.1	1.0	52.8	14.1
Queue Delay	0.0	0.1	0.0	0.0	0.0
Total Delay	72.5	12.2	1.0	52.8	14.1
Queue Length 50th (ft)	~402	523	0	423	191
Queue Length 95th (ft)	#560	314	m1	#526	282
Internal Link Dist (ft)		324			498
Turn Bay Length (ft)				100	
Base Capacity (vph)	852	2143	983	524	2314
Starvation Cap Reductn	0	45	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.99	0.80	0.01	0.87	0.53

Intersection Summary

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

3: S Lamar Blvd & Menchaca Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted AM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗↗	↕↕	↗	↘	↕↕
Traffic Volume (vph)	0	799	1257	5	387	1090
Future Volume (vph)	0	799	1257	5	387	1090
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0
Lane Util. Factor		0.88	0.95	1.00	1.00	0.95
Frbp, ped/bikes		1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		2787	3471	1589	1787	3471
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		2787	3471	1589	1787	3471
Peak-hour factor, PHF	0.92	0.95	0.75	0.60	0.85	0.89
Adj. Flow (vph)	0	841	1676	8	455	1225
RTOR Reduction (vph)	0	35	0	3	0	0
Lane Group Flow (vph)	0	806	1676	5	455	1225
Confl. Peds. (#/hr)		1		4	4	
Heavy Vehicles (%)	2%	2%	4%	0%	1%	4%
Turn Type		pt+ov	NA	Perm	Prot	NA
Protected Phases		1 4	2 3		1 4	1 2
Permitted Phases				2 3		
Actuated Green, G (s)		39.6	83.4	83.4	39.6	87.9
Effective Green, g (s)		39.6	83.4	83.4	39.6	87.9
Actuated g/C Ratio		0.29	0.62	0.62	0.29	0.65
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		817	2144	981	524	2260
v/s Ratio Prot		c0.29	c0.48		0.25	0.35
v/s Ratio Perm				0.00		
v/c Ratio		0.99	0.78	0.01	0.87	0.54
Uniform Delay, d1		47.4	19.1	9.9	45.2	12.7
Progression Factor		1.00	0.51	0.17	0.90	1.07
Incremental Delay, d2		27.9	1.3	0.0	8.7	0.6
Delay (s)		75.4	11.1	1.7	49.5	14.2
Level of Service		E	B	A	D	B
Approach Delay (s)	75.4		11.0			23.8
Approach LOS	E		B			C
Intersection Summary						
HCM 2000 Control Delay			29.0		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.94			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	24.0
Intersection Capacity Utilization			82.9%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	173	375	108	166	169	1546	53	50	1220
v/c Ratio	0.79	0.50	0.84	0.25	1.61	0.68	0.05	0.91	0.57
Control Delay	77.3	26.2	98.5	47.6	334.7	18.7	2.4	144.4	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Total Delay	77.3	26.2	98.5	47.6	334.7	19.0	2.4	144.4	3.4
Queue Length 50th (ft)	146	74	92	65	~215	383	1	~66	193
Queue Length 95th (ft)	153	116	114	88	m#290	368	m4	#88	77
Internal Link Dist (ft)		257		238		436			324
Turn Bay Length (ft)	90		100		125		160	100	
Base Capacity (vph)	220	753	129	654	105	2314	1045	55	2144
Starvation Cap Reductn	0	0	0	0	0	0	0	0	28
Spillback Cap Reductn	0	0	0	0	0	215	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.50	0.84	0.25	1.61	0.74	0.05	0.91	0.58

Intersection Summary

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

4: S Lamar Blvd & Barton Skyway/Lightsey Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	128	199	71	128	6	144	1144	49	28	992	65
Future Volume (vph)	109	128	199	71	128	6	144	1144	49	28	992	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.91		1.00	0.99		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1748	3232		1799	3523		1787	3471	1531	1805	3438	
Flt Permitted	0.65	1.00		0.37	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1190	3232		699	3523		1787	3471	1531	1805	3438	
Peak-hour factor, PHF	0.63	0.86	0.88	0.66	0.80	0.95	0.85	0.74	0.93	0.56	0.88	0.70
Adj. Flow (vph)	173	149	226	108	160	6	169	1546	53	50	1127	93
RTOR Reduction (vph)	0	155	0	0	2	0	0	0	18	0	5	0
Lane Group Flow (vph)	173	220	0	108	164	0	169	1546	35	50	1215	0
Confl. Peds. (#/hr)	2		4	4		2	2		4	4		2
Confl. Bikes (#/hr)			1						1			2
Heavy Vehicles (%)	3%	1%	0%	0%	1%	25%	1%	4%	4%	0%	4%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		8			8		5	5 6		7	6 7	
Permitted Phases	8			8					5 6			
Actuated Green, G (s)	25.0	25.0		25.0	25.0		8.0	87.9	87.9	4.1	84.0	
Effective Green, g (s)	25.0	25.0		25.0	25.0		8.0	87.9	87.9	4.1	84.0	
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.06	0.65	0.65	0.03	0.62	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0			6.0		
Vehicle Extension (s)	2.0	2.0		2.0	2.0		1.0			1.0		
Lane Grp Cap (vph)	220	598		129	652		105	2260	996	54	2139	
v/s Ratio Prot		0.07			0.05		c0.09	c0.45		0.03	c0.35	
v/s Ratio Perm	0.15			c0.15					0.02			
v/c Ratio	0.79	0.37		0.84	0.25		1.61	0.68	0.03	0.93	0.57	
Uniform Delay, d1	52.5	48.1		53.0	47.0		63.5	14.8	8.4	65.3	14.9	
Progression Factor	1.00	1.00		1.00	1.00		0.90	1.20	2.97	0.66	0.16	
Incremental Delay, d2	24.1	1.7		44.6	0.9		298.4	1.0	0.0	86.5	0.2	
Delay (s)	76.5	49.8		97.6	47.9		355.8	18.7	25.0	129.5	2.6	
Level of Service	E	D		F	D		F	B	C	F	A	
Approach Delay (s)		58.3			67.5			51.1			7.6	
Approach LOS		E			E			D			A	
Intersection Summary												
HCM 2000 Control Delay			39.0				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.81									
Actuated Cycle Length (s)			135.0				Sum of lost time (s)				24.0	
Intersection Capacity Utilization			90.0%				ICU Level of Service				E	
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	99	170	234	25	2047	228	1196
v/c Ratio	0.50	0.66	0.69	0.09	0.82	3.86	0.48
Control Delay	50.0	63.1	53.6	6.7	16.3	1335.1	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.0	63.1	53.6	6.7	16.3	1335.1	8.4
Queue Length 50th (ft)	66	138	164	6	575	~359	300
Queue Length 95th (ft)	79	148	149	12	384	#430	266
Internal Link Dist (ft)	270		212		208		469
Turn Bay Length (ft)		120		95		125	
Base Capacity (vph)	197	256	340	270	2505	59	2508
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.66	0.69	0.09	0.82	3.86	0.48

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.




















Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

5: S Lamar Blvd & Private Driveway/Panther Trail
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	8	20	109	3	176	17	1291	144	173	1089	19
Future Volume (veh/h)	31	8	20	109	3	176	17	1291	144	173	1089	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1854	1900	1827	1811	1900	1900	1865	1900	1810	1843	1900
Adj Flow Rate, veh/h	55	13	31	170	5	229	25	1844	203	228	1171	25
Adj No. of Lanes	0	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.56	0.62	0.65	0.64	0.60	0.77	0.69	0.70	0.71	0.76	0.93	0.75
Percent Heavy Veh, %	0	0	8	4	0	5	0	2	1	5	3	8
Cap, veh/h	88	25	33	265	7	311	328	2317	250	118	2517	54
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.72	0.72	0.72	0.72	0.72	0.72
Sat Flow, veh/h	226	122	159	1325	33	1499	475	3225	348	199	3503	75
Grp Volume(v), veh/h	99	0	0	170	0	234	25	997	1050	228	585	611
Grp Sat Flow(s),veh/h/ln	508	0	0	1325	0	1531	475	1771	1802	199	1751	1827
Q Serve(g_s), s	8.0	0.0	0.0	0.0	0.0	19.3	3.2	49.0	53.0	44.0	19.1	19.1
Cycle Q Clear(g_c), s	27.3	0.0	0.0	21.6	0.0	19.3	22.3	49.0	53.0	97.0	19.1	19.1
Prop In Lane	0.56		0.31	1.00		0.98	1.00		0.19	1.00		0.04
Lane Grp Cap(c), veh/h	147	0	0	265	0	318	328	1273	1295	118	1258	1313
V/C Ratio(X)	0.67	0.00	0.00	0.64	0.00	0.74	0.08	0.78	0.81	1.93	0.47	0.47
Avail Cap(c_a), veh/h	147	0	0	265	0	318	328	1273	1295	118	1258	1313
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.1	0.0	0.0	51.0	0.0	50.1	12.7	12.2	12.8	55.4	8.0	8.0
Incr Delay (d2), s/veh	22.1	0.0	0.0	11.4	0.0	14.2	0.5	4.9	5.6	448.2	1.2	1.2
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	4.6	0.0	0.0	6.9	0.0	9.4	0.5	25.3	28.0	19.1	9.5	9.9
LnGrp Delay(d),s/veh	80.2	0.0	0.0	62.3	0.0	64.2	13.2	17.1	18.4	503.7	9.3	9.2
LnGrp LOS	F			E		E	B	B	B	F	A	A
Approach Vol, veh/h		99			404			2072			1424	
Approach Delay, s/veh		80.2			63.4			17.7			88.4	
Approach LOS		F			E			B			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		102.0		33.0		102.0		33.0				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		97.0		28.0		97.0		28.0				
Max Q Clear Time (g_c+I1), s		55.0		29.3		99.0		23.6				
Green Ext Time (p_c), s		6.6		0.0		0.0		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				49.1								
HCM 2010 LOS				D								

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Driveway B/Private Driveway
 Queues Phase 1-2026 Site+Forecasted AM



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL2	SBT	NWL	NWR
Lane Group Flow (vph)	304	204	100	127	1113	119	1140	284	1363
v/c Ratio	1.08	0.50	0.47	0.40	0.92	0.82	0.39	1.40	1.27
Control Delay	121.9	12.2	46.5	18.5	54.8	96.2	21.9	248.0	162.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	121.9	12.2	46.5	18.5	54.8	96.2	21.9	248.0	162.2
Queue Length 50th (ft)	~255	5	67	20	473	100	171	~319	~757
Queue Length 95th (ft)	175	4	86	30	322	122	200	#372	#638
Internal Link Dist (ft)		165		155	240		328	179	
Turn Bay Length (ft)						160			
Base Capacity (vph)	281	404	214	321	1207	146	2939	203	1070
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.08	0.50	0.47	0.40	0.92	0.82	0.39	1.40	1.27

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Driveway B/Private Driveway
 HCM Signalized Intersection Capacity Analysis

Phase 1-2026 Site+Forecasted AM



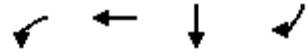
Movement	EBL	EBT	EBR2	WBL	WBT	WBR	NBT	SBL2	SBT	SBR	NWL	NWR
Lane Configurations	↖	↗		↖	↗		↑↑	↖	↑↑↑		↖	↗
Traffic Volume (vph)	161	8	147	68	17	58	668	80	915	76	207	940
Future Volume (vph)	161	8	147	68	17	58	668	80	915	76	207	940
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		5.5	7.0	5.5		7.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		0.95	1.00	0.86		1.00	0.88
Frbp, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.86		1.00	0.88		1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1804	1633		1770	1657		3610	1736	6176		1703	2790
Flt Permitted	0.60	1.00		0.37	1.00		1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	1135	1633		696	1657		3610	1736	6176		1703	2790
Peak-hour factor, PHF	0.53	0.62	0.77	0.68	0.62	0.58	0.60	0.67	0.90	0.62	0.73	0.74
Adj. Flow (vph)	304	13	191	100	27	100	1113	119	1017	123	284	1270
RTOR Reduction (vph)	0	169	0	0	86	0	0	0	16	0	0	137
Lane Group Flow (vph)	304	35	0	100	41	0	1113	119	1124	0	284	1226
Confl. Peds. (#/hr)	1						1	1		3	3	
Confl. Bikes (#/hr)							1			2		
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	4%	2%	20%	6%	2%
Turn Type	pm+pt	NA		pm+pt	NA		NA	Prot	NA		Prot	Prot
Protected Phases	7	4		3	8		2!	1	6		5	2!
Permitted Phases	4			8								
Actuated Green, G (s)	27.2	18.7		26.8	18.5		43.5	11.0	61.5		15.5	43.5
Effective Green, g (s)	27.2	18.7		26.8	18.5		43.5	11.0	61.5		15.5	43.5
Actuated g/C Ratio	0.21	0.14		0.21	0.14		0.33	0.08	0.47		0.12	0.33
Clearance Time (s)	6.5	6.5		6.5	6.5		5.5	7.0	5.5		7.5	5.5
Vehicle Extension (s)	1.0	3.0		3.0	3.0		3.0	2.0	2.0		3.0	3.0
Lane Grp Cap (vph)	281	234		212	235		1207	146	2921		203	933
v/s Ratio Prot	c0.07	0.02		0.03	0.02		0.31	c0.07	0.18		c0.17	c0.44
v/s Ratio Perm	c0.16			0.07								
v/c Ratio	1.08	0.15		0.47	0.18		0.92	0.82	0.38		1.40	1.31
Uniform Delay, d1	50.6	48.7		43.7	49.0		41.6	58.5	22.1		57.2	43.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	77.2	1.4		1.7	1.6		12.9	37.5	0.4		206.6	148.9
Delay (s)	127.8	50.1		45.3	50.7		54.5	96.0	22.4		263.8	192.2
Level of Service	F	D		D	D		D	F	C		F	F
Approach Delay (s)		96.6			48.3		54.5		29.4		204.5	
Approach LOS		F			D		D		C		F	

Intersection Summary		
HCM 2000 Control Delay	104.0	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	1.21	F
Actuated Cycle Length (s)	130.0	Sum of lost time (s)
Intersection Capacity Utilization	129.8%	33.0
Analysis Period (min)	15	ICU Level of Service
		H

! Phase conflict between lane groups.
 c Critical Lane Group



Movement	NWR2
Lane Configurations	
Traffic Volume (vph)	51
Future Volume (vph)	51
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frbp, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.55
Adj. Flow (vph)	93
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	1
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Lane Group	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	533	1653	697	307
v/c Ratio	0.51	0.76	0.59	0.20
Control Delay	1.7	9.0	51.9	0.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	1.7	9.0	51.9	0.3
Queue Length 50th (ft)	3	740	163	0
Queue Length 95th (ft)	m0	m560	191	0
Internal Link Dist (ft)		23	453	
Turn Bay Length (ft)				
Base Capacity (vph)	1043	2168	1187	1564
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.51	0.76	0.59	0.20

Intersection Summary

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

7: S Lamar Blvd & Capity of Texas Hwy
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations				↖	↖↗						↑↑↑↑	↗	
Traffic Volume (vph)	0	0	0	497	1482	0	0	0	0	0	606	270	
Future Volume (vph)	0	0	0	497	1482	0	0	0	0	0	606	270	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				6.0	6.0						6.0	4.0	
Lane Util. Factor				0.91	0.91						0.86	1.00	
Frbp, ped/bikes				1.00	1.00						1.00	0.99	
Flpb, ped/bikes				1.00	1.00						1.00	1.00	
Frt				1.00	1.00						1.00	0.85	
Flt Protected				0.95	1.00						1.00	1.00	
Satd. Flow (prot)				1595	3383						6166	1564	
Flt Permitted				0.95	1.00						1.00	1.00	
Satd. Flow (perm)				1595	3383						6166	1564	
Peak-hour factor, PHF	0.92	0.92	0.92	0.84	0.93	0.92	0.92	0.92	0.92	0.92	0.87	0.88	
Adj. Flow (vph)	0	0	0	592	1594	0	0	0	0	0	697	307	
RTOR Reduction (vph)	0	0	0	38	38	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	495	1615	0	0	0	0	0	697	307	
Confl. Peds. (#/hr)												1	
Heavy Vehicles (%)	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	6%	2%	
Turn Type				custom	NA						NA	Free	
Protected Phases				1 2 4 8	1 2 4 8						5 6 7		
Permitted Phases				3	3							Free	
Actuated Green, G (s)				86.0	86.0						33.0	135.0	
Effective Green, g (s)				86.0	86.0						33.0	135.0	
Actuated g/C Ratio				0.64	0.64						0.24	1.00	
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				1086	2305						1507	1564	
v/s Ratio Prot				0.29	0.44						0.11		
v/s Ratio Perm				0.02	0.04							0.20	
v/c Ratio				0.46	0.70						0.46	0.20	
Uniform Delay, d1				12.5	16.1						43.4	0.0	
Progression Factor				0.20	0.74						1.00	1.00	
Incremental Delay, d2				0.0	0.1						1.0	0.3	
Delay (s)				2.5	12.0						44.5	0.3	
Level of Service				A	B						D	A	
Approach Delay (s)		0.0			9.7			0.0			31.0		
Approach LOS		A			A			A			C		
Intersection Summary													
HCM 2000 Control Delay			16.4		HCM 2000 Level of Service						B		
HCM 2000 Volume to Capacity ratio			0.84										
Actuated Cycle Length (s)			135.0		Sum of lost time (s)					40.0			
Intersection Capacity Utilization			70.1%		ICU Level of Service					C			
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	WBT	NBL	NBT
Lane Group Flow (vph)	1723	303	941
v/c Ratio	1.24	0.34	0.35
Control Delay	154.3	1.3	1.8
Queue Delay	0.1	0.3	0.1
Total Delay	154.3	1.7	1.9
Queue Length 50th (ft)	~677	0	6
Queue Length 95th (ft)	m#732	m5	7
Internal Link Dist (ft)	133		295
Turn Bay Length (ft)			
Base Capacity (vph)	1393	898	2673
Starvation Cap Reductn	0	223	689
Spillback Cap Reductn	24	15	22
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.26	0.45	0.47

Intersection Summary

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

8: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↑	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1637	0	350	647	0	0	0	0
Future Volume (vph)	0	0	0	0	1637	0	350	647	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0		6.0	6.0				
Lane Util. Factor					0.91		0.86	0.86				
Frbp, ped/bikes					1.00		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					1.00		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					5085		1552	4792				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					5085		1552	4792				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.95	0.79	0.89	0.76	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1723	0	393	851	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	47	47	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1723	0	256	894	0	0	0	0
Confl. Peds. (#/hr)						1						
Heavy Vehicles (%)	2%	2%	2%	2%	2%	6%	0%	2%	2%	2%	2%	2%
Turn Type					NA		custom	NA				
Protected Phases					1 7 8		2 3 4 5	2 3 4 5				
Permitted Phases							6	6				
Actuated Green, G (s)					40.0		77.0	77.0				
Effective Green, g (s)					38.0		75.0	75.0				
Actuated g/C Ratio					0.28		0.56	0.56				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)					1431		931	2875				
v/s Ratio Prot					c0.34		0.12	c0.13				
v/s Ratio Perm							0.05	0.06				
v/c Ratio					1.20		0.28	0.31				
Uniform Delay, d1					48.5		15.7	16.1				
Progression Factor					1.02		0.09	0.14				
Incremental Delay, d2					97.9		0.0	0.0				
Delay (s)					147.6		1.5	2.3				
Level of Service					F		A	A				
Approach Delay (s)		0.0			147.6			2.1			0.0	
Approach LOS		A			F			A			A	
Intersection Summary												
HCM 2000 Control Delay			86.6				HCM 2000 Level of Service		F			
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			135.0				Sum of lost time (s)		40.0			
Intersection Capacity Utilization			75.5%				ICU Level of Service		D			
Analysis Period (min)			15									

c Critical Lane Group















Lane Group	EBT	SBL	SBT
Lane Group Flow (vph)	873	320	999
v/c Ratio	0.91	0.34	0.33
Control Delay	67.4	2.2	1.9
Queue Delay	0.8	0.5	0.2
Total Delay	68.2	2.8	2.1
Queue Length 50th (ft)	277	1	5
Queue Length 95th (ft)	#354	2	3
Internal Link Dist (ft)	69		291
Turn Bay Length (ft)			
Base Capacity (vph)	960	943	3050
Starvation Cap Reductn	0	300	1088
Spillback Cap Reductn	13	12	20
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.92	0.50	0.51

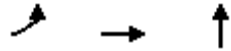
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

9: S Lamar Blvd & Capity of Texas Hwy
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted AM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↑↑↑								↘	↑↑↑		
Traffic Volume (vph)	0	794	0	0	0	0	0	0	0	320	827	0	
Future Volume (vph)	0	794	0	0	0	0	0	0	0	320	827	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.0								6.0	6.0		
Lane Util. Factor		0.91								0.86	0.86		
Frbp, ped/bikes		1.00								1.00	1.00		
Flpb, ped/bikes		1.00								1.00	1.00		
Frt		1.00								1.00	1.00		
Flt Protected		1.00								0.95	1.00		
Satd. Flow (prot)		4988								1437	4781		
Flt Permitted		1.00								0.95	1.00		
Satd. Flow (perm)		4988								1437	4781		
Peak-hour factor, PHF	0.92	0.91	0.88	0.92	0.92	0.92	0.92	0.92	0.92	0.87	0.87	0.92	
Adj. Flow (vph)	0	873	0	0	0	0	0	0	0	368	951	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	38	38	0	
Lane Group Flow (vph)	0	873	0	0	0	0	0	0	0	282	961	0	
Confl. Bikes (#/hr)			1										
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	8%	2%	2%	
Turn Type		NA								custom	NA		
Protected Phases		4 5								1 2 6 8	1 2 6 8		
Permitted Phases										7	7		
Actuated Green, G (s)		26.0								86.0	86.0		
Effective Green, g (s)		26.0								86.0	86.0		
Actuated g/C Ratio		0.19								0.64	0.64		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)		960								979	3258		
v/s Ratio Prot		c0.18								0.18	c0.19		
v/s Ratio Perm										0.01	0.02		
v/c Ratio		0.91								0.29	0.29		
Uniform Delay, d1		53.3								10.9	10.9		
Progression Factor		1.00								0.26	0.23		
Incremental Delay, d2		11.9								0.1	0.0		
Delay (s)		65.3								2.9	2.5		
Level of Service		E								A	A		
Approach Delay (s)		65.3			0.0			0.0			2.6		
Approach LOS		E			A			A			A		
Intersection Summary													
HCM 2000 Control Delay			27.6		HCM 2000 Level of Service						C		
HCM 2000 Volume to Capacity ratio			0.53										
Actuated Cycle Length (s)			135.0		Sum of lost time (s)					40.0			
Intersection Capacity Utilization			63.8%		ICU Level of Service					B			
Analysis Period (min)			15										
c Critical Lane Group													





















Lane Group	EBL	EBT	NBT
Lane Group Flow (vph)	428	902	1210
v/c Ratio	0.43	0.46	0.79
Control Delay	2.4	3.3	50.6
Queue Delay	4.0	3.3	0.0
Total Delay	6.4	6.6	50.6
Queue Length 50th (ft)	6	21	279
Queue Length 95th (ft)	5	m30	324
Internal Link Dist (ft)		38	673
Turn Bay Length (ft)			
Base Capacity (vph)	985	1950	1528
Starvation Cap Reductn	462	921	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.82	0.88	0.79

Intersection Summary

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

10: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 						  				
Traffic Volume (vph)	330	773	0	0	0	0	0	839	248	0	0	0
Future Volume (vph)	330	773	0	0	0	0	0	839	248	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0						6.0				
Lane Util. Factor	0.91	0.91						0.86				
Frt	1.00	1.00						0.96				
Flt Protected	0.95	1.00						1.00				
Satd. Flow (prot)	1610	3258						6273				
Flt Permitted	0.95	1.00						1.00				
Satd. Flow (perm)	1610	3258						6273				
Peak-hour factor, PHF	0.64	0.95	0.92	0.92	0.92	0.92	0.92	0.91	0.86	0.92	0.92	0.92
Adj. Flow (vph)	516	814	0	0	0	0	0	922	288	0	0	0
RTOR Reduction (vph)	43	43	0	0	0	0	0	39	0	0	0	0
Lane Group Flow (vph)	385	859	0	0	0	0	0	1171	0	0	0	0
Heavy Vehicles (%)	2%	6%	2%	2%	2%	2%	2%	0%	2%	2%	2%	2%
Turn Type	custom	NA						NA				
Protected Phases	4 5 6 8	4 5 6 8						1 2 3				
Permitted Phases	7	7										
Actuated Green, G (s)	80.0	80.0						39.0				
Effective Green, g (s)	80.0	80.0						39.0				
Actuated g/C Ratio	0.59	0.59						0.29				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	1025	2075						1812				
v/s Ratio Prot	0.22	c0.24						c0.19				
v/s Ratio Perm	0.02	0.02										
v/c Ratio	0.38	0.41						0.65				
Uniform Delay, d1	14.4	14.8						42.0				
Progression Factor	0.17	0.27						1.00				
Incremental Delay, d2	0.1	0.0						1.8				
Delay (s)	2.5	4.1						43.8				
Level of Service	A	A						D				
Approach Delay (s)		3.6			0.0			43.8			0.0	
Approach LOS		A			A			D			A	
Intersection Summary												
HCM 2000 Control Delay			22.7					HCM 2000 Level of Service		C		
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			135.0					Sum of lost time (s)		40.0		
Intersection Capacity Utilization			56.3%					ICU Level of Service		B		
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	399	832	144	176	262	25
v/c Ratio	1.17	1.17	0.24	0.60	0.17	0.02
Control Delay	131.6	120.9	1.0	22.2	2.4	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	131.6	120.9	1.0	22.2	2.4	11.1
Queue Length 50th (ft)	~216	~226	0	36	7	1
Queue Length 95th (ft)	#407	#326	0	m45	m7	6
Internal Link Dist (ft)		364			236	206
Turn Bay Length (ft)						
Base Capacity (vph)	342	709	589	295	1678	1445
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.17	1.17	0.24	0.60	0.16	0.02

Intersection Summary

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

11: West Gate Blvd & US 290 WBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations				↙	↕	↗	↙	↕			↕	↗	
Traffic Volume (vph)	0	0	0	521	569	79	324	76	0	0	11	9	
Future Volume (vph)	0	0	0	521	569	79	324	76	0	0	11	9	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				5.5	5.5	5.5	5.5	6.0			6.0		
Lane Util. Factor				0.91	0.91	1.00	0.91	0.91			0.91		
Frbp, ped/bikes				1.00	1.00	0.99	1.00	1.00			1.00		
Flpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00		
Frt				1.00	1.00	0.85	1.00	1.00			0.93		
Flt Protected				0.95	0.99	1.00	0.95	0.97			1.00		
Satd. Flow (prot)				1610	3332	1562	1595	3280			4450		
Flt Permitted				0.95	0.99	1.00	0.74	0.77			1.00		
Satd. Flow (perm)				1610	3332	1562	1241	2596			4450		
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.84	0.55	0.92	0.88	0.92	0.92	0.88	0.75	
Adj. Flow (vph)	0	0	0	554	677	144	352	86	0	0	12	12	
RTOR Reduction (vph)	0	0	0	0	0	115	0	0	0	0	8	0	
Lane Group Flow (vph)	0	0	0	399	832	29	176	262	0	0	17	0	
Confl. Peds. (#/hr)						1							
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	3%	0%	2%	2%	0%	17%	
Turn Type				Perm	NA	Perm	custom	NA			NA		
Protected Phases					4 5			1 2 6 7			1 2		
Permitted Phases				4 5		4 5	6 7						
Actuated Green, G (s)				13.3	13.3	13.3	15.5	40.2			19.2		
Effective Green, g (s)				13.3	13.3	13.3	15.5	29.2			19.2		
Actuated g/C Ratio				0.20	0.20	0.20	0.24	0.45			0.30		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				329	681	319	295	1166			1314		
v/s Ratio Prot											0.00		
v/s Ratio Perm				0.25	0.25	0.02	c0.14	c0.10					
v/c Ratio				1.21	1.22	0.09	0.60	0.22			0.01		
Uniform Delay, d1				25.9	25.9	21.0	22.0	11.0			16.2		
Progression Factor				1.00	1.00	1.00	0.67	0.43			1.00		
Incremental Delay, d2				120.5	112.7	0.6	1.6	0.0			0.0		
Delay (s)				146.4	138.5	21.5	16.4	4.7			16.2		
Level of Service				F	F	C	B	A			B		
Approach Delay (s)		0.0			128.5			9.4			16.2		
Approach LOS		A			F			A			B		
Intersection Summary													
HCM 2000 Control Delay			98.6		HCM 2000 Level of Service				F				
HCM 2000 Volume to Capacity ratio			0.96										
Actuated Cycle Length (s)			65.0		Sum of lost time (s)				34.0				
Intersection Capacity Utilization			74.5%		ICU Level of Service				D				
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	56	704	718	336	57	523
v/c Ratio	0.17	1.05	0.74	0.57	0.10	0.23
Control Delay	23.9	74.1	18.1	7.2	35.4	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.9	74.1	18.1	7.2	35.4	0.4
Queue Length 50th (ft)	19	~152	77	0	25	1
Queue Length 95th (ft)	37	#249	139	63	m22	m1
Internal Link Dist (ft)		52	369			236
Turn Bay Length (ft)						
Base Capacity (vph)	333	673	967	589	491	2143
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.17	1.05	0.74	0.57	0.12	0.24

Intersection Summary

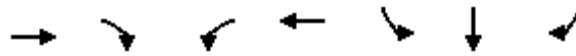
- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

12: West Gate Blvd & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	467	145	0	0	0	0	362	612	39	502	0
Future Volume (vph)	40	467	145	0	0	0	0	362	612	39	502	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0						6.0	6.0	5.5	5.5	
Lane Util. Factor	1.00	0.95						0.91	0.91	1.00	0.95	
Frbp, ped/bikes	1.00	1.00						0.99	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00						1.00	1.00	1.00	1.00	
Frt	1.00	0.96						0.93	0.85	1.00	1.00	
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3372						3130	1436	1736	3539	
Flt Permitted	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3372						3130	1436	1736	3539	
Peak-hour factor, PHF	0.72	0.89	0.81	0.92	0.92	0.92	0.92	0.95	0.91	0.69	0.96	0.92
Adj. Flow (vph)	56	525	179	0	0	0	0	381	673	57	523	0
RTOR Reduction (vph)	0	57	0	0	0	0	0	243	256	0	0	0
Lane Group Flow (vph)	56	647	0	0	0	0	0	475	80	57	523	0
Confl. Peds. (#/hr)			2						1	1		
Heavy Vehicles (%)	0%	2%	4%	2%	2%	2%	2%	3%	1%	4%	2%	2%
Turn Type	Split	NA						NA	Perm	Prot	NA	
Protected Phases	1 7	1 7						5 6		2 4	2 4 5 6	
Permitted Phases									5 6			
Actuated Green, G (s)	12.0	12.0						15.5	15.5	20.5	41.5	
Effective Green, g (s)	6.5	6.5						15.5	15.5	20.5	35.5	
Actuated g/C Ratio	0.10	0.10						0.24	0.24	0.32	0.55	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	180	337						746	342	547	1932	
v/s Ratio Prot	0.03	c0.19						c0.15		0.03	c0.15	
v/s Ratio Perm									0.06			
v/c Ratio	0.31	1.92						0.64	0.23	0.10	0.27	
Uniform Delay, d1	27.2	29.2						22.2	20.0	15.8	7.9	
Progression Factor	1.00	1.00						1.00	1.00	2.20	0.08	
Incremental Delay, d2	0.4	425.2						4.1	1.6	0.0	0.0	
Delay (s)	27.5	454.5						26.3	21.6	34.6	0.6	
Level of Service	C	F						C	C	C	A	
Approach Delay (s)		423.0			0.0			24.8			4.0	
Approach LOS		F			A			C			A	
Intersection Summary												
HCM 2000 Control Delay			146.2									HCM 2000 Level of Service F
HCM 2000 Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			65.0								34.0	Sum of lost time (s)
Intersection Capacity Utilization			74.5%									ICU Level of Service D
Analysis Period (min)			15									

c Critical Lane Group



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1473	610	164	4219	130	136	535
v/c Ratio	0.45	0.52	0.44	1.03	0.66	0.65	0.34
Control Delay	16.2	6.5	5.4	46.7	92.9	91.1	0.6
Queue Delay	0.0	0.0	0.0	29.6	0.0	0.0	0.0
Total Delay	16.2	6.5	5.4	76.3	92.9	91.1	0.6
Queue Length 50th (ft)	303	107	46	~1987	157	164	0
Queue Length 95th (ft)	335	151	m37	m1705	207	136	0
Internal Link Dist (ft)	834			1419		192	
Turn Bay Length (ft)		515	950				
Base Capacity (vph)	3242	1165	371	4096	196	209	1553
Starvation Cap Reductn	0	0	0	723	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.52	0.44	1.25	0.66	0.65	0.34

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

13: Capital of Texas Hwy & Mopac SBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗	↘	↑↑↑					↘	↗	↗
Traffic Volume (vph)	0	1414	512	97	3924	0	0	0	0	136	48	487
Future Volume (vph)	0	1414	512	97	3924	0	0	0	0	136	48	487
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0	7.0	7.0					6.5	6.5	4.0
Lane Util. Factor		0.91	1.00	1.00	0.91					0.95	0.95	1.00
Frbp, ped/bikes		1.00	0.99	1.00	1.00					1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.98	1.00
Satd. Flow (prot)		4988	1577	1752	5085					1649	1754	1553
Flt Permitted		1.00	1.00	0.13	1.00					0.95	0.98	1.00
Satd. Flow (perm)		4988	1577	241	5085					1649	1754	1553
Peak-hour factor, PHF	0.92	0.96	0.84	0.59	0.93	0.92	0.92	0.92	0.92	0.78	0.52	0.91
Adj. Flow (vph)	0	1473	610	164	4219	0	0	0	0	174	92	535
RTOR Reduction (vph)	0	0	141	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1473	469	164	4219	0	0	0	0	130	136	535
Confl. Bikes (#/hr)			6									
Heavy Vehicles (%)	2%	4%	1%	3%	2%	2%	2%	2%	2%	4%	0%	4%
Turn Type		NA	Perm	pm+pt	NA					Perm	NA	Free
Protected Phases		2		1	6						8	
Permitted Phases			2	6						8		Free
Actuated Green, G (s)		117.0	117.0	145.0	145.0					21.5	21.5	180.0
Effective Green, g (s)		117.0	117.0	145.0	145.0					21.5	21.5	180.0
Actuated g/C Ratio		0.65	0.65	0.81	0.81					0.12	0.12	1.00
Clearance Time (s)		7.0	7.0	7.0	7.0					6.5	6.5	
Vehicle Extension (s)		4.0	4.0	2.0	4.0					2.0	2.0	
Lane Grp Cap (vph)		3242	1025	370	4096					196	209	1553
v/s Ratio Prot		0.30		0.05	c0.83							
v/s Ratio Perm			0.30	0.31						c0.08	0.08	0.34
v/c Ratio		0.45	0.46	0.44	1.03					0.66	0.65	0.34
Uniform Delay, d1		15.6	15.7	8.1	17.5					75.8	75.7	0.0
Progression Factor		1.00	1.00	1.34	1.90					1.00	1.00	1.00
Incremental Delay, d2		0.5	1.5	0.3	14.8					16.3	14.7	0.6
Delay (s)		16.1	17.2	11.1	48.0					92.1	90.3	0.6
Level of Service		B	B	B	D					F	F	A
Approach Delay (s)		16.4			46.6			0.0			30.7	
Approach LOS		B			D			A			C	
Intersection Summary												
HCM 2000 Control Delay			36.2			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			1.03									
Actuated Cycle Length (s)			180.0			Sum of lost time (s)				20.5		
Intersection Capacity Utilization			110.6%			ICU Level of Service				H		
Analysis Period (min)			15									

c Critical Lane Group






















Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	327	1363	2724	2740	1559	185	332
v/c Ratio	1.14	0.55	0.99	1.77	1.48	0.47	0.83
Control Delay	145.6	11.2	57.5	367.4	268.8	67.0	68.3
Queue Delay	0.0	0.0	40.0	0.0	0.0	0.0	0.0
Total Delay	145.6	11.2	97.4	367.4	268.8	67.0	68.3
Queue Length 50th (ft)	~399	285	1054	~4607	~896	194	289
Queue Length 95th (ft)	#619	298	m763	m#2893	#987	246	315
Internal Link Dist (ft)		1419	756			675	
Turn Bay Length (ft)					300		
Base Capacity (vph)	286	2487	2740	1549	1050	395	398
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	964	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.14	0.55	1.53	1.77	1.48	0.47	0.83

Intersection Summary

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

14: Mopac NBFR & Capital of Texas Hwy
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	301	1281	0	0	2533	2658	1465	148	249	0	0	0
Future Volume (veh/h)	301	1281	0	0	2533	2658	1465	148	249	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1827	0	0	1863	1845	1881	1900	1863			
Adj Flow Rate, veh/h	327	1363	0	0	2724	0	1559	185	0			
Adj No. of Lanes	1	2	0	0	3	1	3	1	1			
Peak Hour Factor	0.92	0.94	0.92	0.92	0.93	0.97	0.94	0.80	0.75			
Percent Heavy Veh, %	2	4	0	0	2	3	1	0	2			
Cap, veh/h	286	2488	0	0	2740	845	1053	396	330			
Arrive On Green	0.28	1.00	0.00	0.00	0.54	0.00	0.21	0.21	0.00			
Sat Flow, veh/h	1774	3563	0	0	5253	1568	5052	1900	1583			
Grp Volume(v), veh/h	327	1363	0	0	2724	0	1559	185	0			
Grp Sat Flow(s),veh/h/ln	1774	1736	0	0	1695	1568	1684	1900	1583			
Q Serve(g_s), s	25.0	0.0	0.0	0.0	95.7	0.0	37.5	15.4	0.0			
Cycle Q Clear(g_c), s	25.0	0.0	0.0	0.0	95.7	0.0	37.5	15.4	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	286	2488	0	0	2740	845	1053	396	330			
V/C Ratio(X)	1.14	0.55	0.00	0.00	0.99	0.00	1.48	0.47	0.00			
Avail Cap(c_a), veh/h	286	2488	0	0	2740	845	1053	396	330			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.88	0.88	0.00	0.00	1.00	0.00	1.00	1.00	0.00			
Uniform Delay (d), s/veh	63.3	0.0	0.0	0.0	41.2	0.0	71.3	62.5	0.0			
Incr Delay (d2), s/veh	94.0	0.8	0.0	0.0	15.8	0.0	221.7	0.3	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			
%ile BackOfQ(50%),veh/ln	21.6	0.3	0.0	0.0	48.6	0.0	39.0	8.1	0.0			
LnGrp Delay(d),s/veh	157.2	0.8	0.0	0.0	57.0	0.0	292.9	62.8	0.0			
LnGrp LOS	F	A			E		F	E				
Approach Vol, veh/h		1690			2724			1744				
Approach Delay, s/veh		31.0			57.0			268.5				
Approach LOS		C			E			F				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		136.0		44.0	32.0	104.0						
Change Period (Y+Rc), s		7.0		6.5	7.0	7.0						
Max Green Setting (Gmax), s		129.0		37.5	25.0	97.0						
Max Q Clear Time (g_c+I1), s		2.0		39.5	27.0	97.7						
Green Ext Time (p_c), s		3.7		0.0	0.0	0.0						
Intersection Summary												
HCM 2010 Ctrl Delay				109.8								
HCM 2010 LOS				F								



Lane Group	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	140	5206	129	382	3756
v/c Ratio	0.26	1.39	0.11	1.12	1.01
Control Delay	63.8	199.5	3.1	153.4	40.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	63.8	199.5	3.1	153.4	40.1
Queue Length 50th (ft)	81	~2980	17	~523	~1675
Queue Length 95th (ft)	103	#2941	18	#669	#1730
Internal Link Dist (ft)		1281			1273
Turn Bay Length (ft)			430	550	
Base Capacity (vph)	536	3757	1212	340	3721
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.26	1.39	0.11	1.12	1.01

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

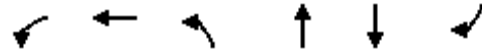
Queue shown is maximum after two cycles.

15: Capital of Texas Hwy & Barton Creek Plaza Dwy/Driveway E
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted AM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↔↔	↑↑↑	↔	↔	↑↑↑
Traffic Volume (vph)	0	109	5102	80	321	3568
Future Volume (vph)	0	109	5102	80	321	3568
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	7.0	7.0	6.0	7.0
Lane Util. Factor		0.88	0.91	1.00	1.00	0.91
Frbp, ped/bikes		1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		2842	5085	1615	1805	5036
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		2842	5085	1615	1805	5036
Peak-hour factor, PHF	0.92	0.78	0.98	0.62	0.84	0.95
Adj. Flow (vph)	0	140	5206	129	382	3756
RTOR Reduction (vph)	0	0	0	19	0	0
Lane Group Flow (vph)	0	140	5206	110	382	3756
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	2%	0%	2%	0%	0%	3%
Turn Type		Over	NA	Prot	Prot	NA
Protected Phases		5	6	6	5	6
Permitted Phases						
Actuated Green, G (s)		34.0	133.0	133.0	34.0	133.0
Effective Green, g (s)		34.0	133.0	133.0	34.0	133.0
Actuated g/C Ratio		0.19	0.74	0.74	0.19	0.74
Clearance Time (s)		6.0	7.0	7.0	6.0	7.0
Vehicle Extension (s)		2.0	4.0	4.0	2.0	4.0
Lane Grp Cap (vph)		536	3757	1193	340	3721
v/s Ratio Prot		0.05	c1.02	0.07	c0.21	0.75
v/s Ratio Perm						
v/c Ratio		0.26	1.39	0.09	1.12	1.01
Uniform Delay, d1		62.3	23.5	6.6	73.0	23.5
Progression Factor		1.00	1.00	1.00	1.08	0.99
Incremental Delay, d2		0.1	175.3	0.2	86.1	17.0
Delay (s)		62.4	198.8	6.7	165.2	40.3
Level of Service		E	F	A	F	D
Approach Delay (s)	62.4		194.1			51.8
Approach LOS	E		F			D
Intersection Summary						
HCM 2000 Control Delay			130.9		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.33			
Actuated Cycle Length (s)			180.0		Sum of lost time (s)	13.0
Intersection Capacity Utilization			127.2%		ICU Level of Service	H
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	150	1457	86	319	363	179
v/c Ratio	0.22	0.99	0.20	0.35	0.79	0.35
Control Delay	26.7	60.8	11.5	14.1	61.0	10.6
Queue Delay	0.0	0.0	0.0	4.1	0.0	0.0
Total Delay	26.8	60.8	11.5	18.3	61.0	10.6
Queue Length 50th (ft)	84	657	35	174	295	11
Queue Length 95th (ft)	m129	m#823	m47	142	#411	12
Internal Link Dist (ft)		522		175	200	
Turn Bay Length (ft)			70			90
Base Capacity (vph)	692	1471	524	887	458	506
Starvation Cap Reductn	0	0	0	478	0	0
Spillback Cap Reductn	23	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.99	0.16	0.78	0.79	0.35

Intersection Summary



















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

Queue shown is maximum after two cycles.

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

16: US 290 WBFR & Victory Drive
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	132	1183	173	81	198	0	0	276	109
Future Volume (vph)	0	0	0	132	1183	173	81	198	0	0	276	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.5	5.5		5.5	4.5			4.5	4.5
Lane Util. Factor				1.00	0.95		1.00	1.00			1.00	1.00
Frbp, ped/bikes				1.00	1.00		1.00	1.00			1.00	0.98
Flpb, ped/bikes				1.00	1.00		1.00	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1597	3369		1769	1827			1759	1490
Flt Permitted				0.95	1.00		0.18	1.00			1.00	1.00
Satd. Flow (perm)				1597	3369		330	1827			1759	1490
Peak-hour factor, PHF	0.92	0.92	0.92	0.88	0.96	0.77	0.94	0.62	0.92	0.92	0.76	0.61
Adj. Flow (vph)	0	0	0	150	1232	225	86	319	0	0	363	179
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	120
Lane Group Flow (vph)	0	0	0	150	1446	0	86	319	0	0	363	59
Confl. Peds. (#/hr)						6	6					6
Confl. Bikes (#/hr)												4
Heavy Vehicles (%)	2%	2%	2%	13%	3%	11%	2%	4%	2%	2%	8%	6%
Turn Type				Split	NA		pm+pt	NA			NA	Perm
Protected Phases				7 8	7 8		2 10 1 2 6 10				1 6	
Permitted Phases							1 2 6 10					1 6
Actuated Green, G (s)				58.0	58.0		61.0	66.5			35.2	35.2
Effective Green, g (s)				58.0	58.0		50.5	55.0			35.2	35.2
Actuated g/C Ratio				0.43	0.43		0.37	0.41			0.26	0.26
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)				686	1447		334	744			458	388
v/s Ratio Prot				0.09	c0.43		0.04	c0.17			c0.21	
v/s Ratio Perm							0.06					0.04
v/c Ratio				0.22	1.00		0.26	0.43			0.79	0.15
Uniform Delay, d1				24.2	38.5		29.5	28.7			46.5	38.4
Progression Factor				1.07	1.06		0.55	0.62			1.00	1.00
Incremental Delay, d2				0.1	23.2		0.1	0.1			8.5	0.1
Delay (s)				26.0	64.0		16.5	18.0			55.0	38.5
Level of Service				C	E		B	B			E	D
Approach Delay (s)		0.0			60.4			17.6			49.6	
Approach LOS		A			E			B			D	
Intersection Summary												
HCM 2000 Control Delay			51.3	HCM 2000 Level of Service				D				
HCM 2000 Volume to Capacity ratio			0.92									
Actuated Cycle Length (s)			135.0	Sum of lost time (s)				32.0				
Intersection Capacity Utilization			95.9%	ICU Level of Service				F				
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1553	169	173	334	112
v/c Ratio	0.95	0.22	0.26	0.50	0.12
Control Delay	63.8	26.8	9.8	8.9	3.4
Queue Delay	5.5	0.0	0.0	0.4	1.1
Total Delay	69.4	26.8	9.8	9.3	4.5
Queue Length 50th (ft)	511	95	29	31	10
Queue Length 95th (ft)	m#578	141	66	m135	m13
Internal Link Dist (ft)	53	253			175
Turn Bay Length (ft)			125	70	
Base Capacity (vph)	1640	746	659	663	922
Starvation Cap Reductn	0	0	0	72	630
Spillback Cap Reductn	72	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.99	0.23	0.26	0.57	0.38

Intersection Summary






















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

Queue shown is maximum after two cycles.

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

17: Pack Saddle Pass & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted AM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  							 	 			
Traffic Volume (vph)	122	1192	48	0	0	0	0	145	144	291	101	0	
Future Volume (vph)	122	1192	48	0	0	0	0	145	144	291	101	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.0						4.5	4.5	5.5	4.5		
Lane Util. Factor		0.91						1.00	1.00	1.00	1.00		
Frbp, ped/bikes		1.00						1.00	1.00	1.00	1.00		
Flpb, ped/bikes		1.00						1.00	1.00	1.00	1.00		
Frt		0.99						1.00	0.85	1.00	1.00		
Flt Protected		0.99						1.00	1.00	0.95	1.00		
Satd. Flow (prot)		4912						1845	1455	1702	1583		
Flt Permitted		0.99						1.00	1.00	0.60	1.00		
Satd. Flow (perm)		4912						1845	1455	1067	1583		
Peak-hour factor, PHF	0.54	0.94	0.81	0.92	0.92	0.92	0.92	0.86	0.83	0.87	0.90	0.92	
Adj. Flow (vph)	226	1268	59	0	0	0	0	169	173	334	112	0	
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	75	0	0	0	
Lane Group Flow (vph)	0	1550	0	0	0	0	0	169	98	334	112	0	
Confl. Peds. (#/hr)			3						1	1			
Confl. Bikes (#/hr)			1										
Heavy Vehicles (%)	6%	4%	0%	2%	2%	2%	2%	3%	11%	6%	20%	2%	
Turn Type	Split	NA						NA	Prot	D.P+P	NA		
Protected Phases	8 10	8 10						1 2 6	1 2 6	7	1 2 6 7		
Permitted Phases										1 2 6			
Actuated Green, G (s)		45.0						55.5	55.5	74.0	78.5		
Effective Green, g (s)		45.0						50.0	50.0	69.5	73.0		
Actuated g/C Ratio		0.33						0.37	0.37	0.51	0.54		
Clearance Time (s)										5.5			
Vehicle Extension (s)										1.5			
Lane Grp Cap (vph)		1637						683	538	636	855		
v/s Ratio Prot		c0.32						0.09	0.07	c0.07	0.07		
v/s Ratio Perm										c0.20			
v/c Ratio		0.95						0.25	0.18	0.53	0.13		
Uniform Delay, d1		43.8						29.5	28.7	25.3	15.3		
Progression Factor		1.19						1.00	1.00	0.37	0.26		
Incremental Delay, d2		11.1						0.1	0.1	0.3	0.0		
Delay (s)		63.1						29.5	28.8	9.8	3.9		
Level of Service		E						C	C	A	A		
Approach Delay (s)		63.1		0.0				29.1			8.3		
Approach LOS		E		A				C			A		
Intersection Summary													
HCM 2000 Control Delay			47.7									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.77										
Actuated Cycle Length (s)			135.0									Sum of lost time (s)	32.0
Intersection Capacity Utilization			95.9%									ICU Level of Service	F
Analysis Period (min)			15										
c	Critical Lane Group												






















Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	459	959	760	589	901	1083
v/c Ratio	1.79	1.81	1.69	2.34	0.33	1.21
Control Delay	400.8	403.2	343.4	627.0	0.7	147.2
Queue Delay	0.0	0.0	0.0	0.0	1.1	1.5
Total Delay	400.8	403.2	343.4	627.0	1.8	148.7
Queue Length 50th (ft)	~635	~667	~772	~756	9	~400
Queue Length 95th (ft)	#829	#807	#930	m#864	m10	#460
Internal Link Dist (ft)		53			174	314
Turn Bay Length (ft)						
Base Capacity (vph)	257	530	450	252	2694	898
Starvation Cap Reductn	0	0	0	0	1456	0
Spillback Cap Reductn	0	1	0	0	0	199
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.79	1.81	1.69	2.34	0.73	1.55

Intersection Summary

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

18: US 290 WBFR & Menchaca Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted AM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	0	0	493	800	646	501	829	0	0	767	170	
Future Volume (vph)	0	0	0	493	800	646	501	829	0	0	767	170	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				6.0	6.0	6.0	5.0	5.0			5.0		
Lane Util. Factor				0.91	0.91	1.00	1.00	0.95			0.91		
Frbp, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00		
Flpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00		
Frt				1.00	1.00	0.85	1.00	1.00			0.97		
Flt Protected				0.95	0.99	1.00	0.95	1.00			1.00		
Satd. Flow (prot)				1595	3282	1599	1769	3574			4929		
Flt Permitted				0.95	0.99	1.00	0.25	1.00			1.00		
Satd. Flow (perm)				1595	3282	1599	469	3574			4929		
Peak-hour factor, PHF	0.92	0.92	0.92	0.87	0.94	0.85	0.85	0.92	0.92	0.92	0.86	0.89	
Adj. Flow (vph)	0	0	0	567	851	760	589	901	0	0	892	191	
RTOR Reduction (vph)	0	0	0	0	0	192	0	0	0	0	26	0	
Lane Group Flow (vph)	0	0	0	459	959	568	589	901	0	0	1057	0	
Confl. Peds. (#/hr)							1					1	
Confl. Bikes (#/hr)												1	
Heavy Vehicles (%)	2%	2%	2%	3%	5%	1%	2%	1%	2%	2%	2%	3%	
Turn Type				Perm	NA	Perm	custom	NA				NA	
Protected Phases					7 8			1 2 6 10				1 6	
Permitted Phases				7 8		7 8	2 10						
Actuated Green, G (s)				21.0	21.0	21.0	70.0	98.0				23.0	
Effective Green, g (s)				21.0	21.0	21.0	70.0	98.0				23.0	
Actuated g/C Ratio				0.16	0.16	0.16	0.54	0.75				0.18	
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				257	530	258	252	2694				872	
v/s Ratio Prot								0.25				c0.21	
v/s Ratio Perm				0.29	0.29	c0.36	c1.26						
v/c Ratio				1.79	1.81	2.20	2.34	0.33				1.21	
Uniform Delay, d1				54.5	54.5	54.5	30.0	5.3				53.5	
Progression Factor				1.00	1.00	1.00	0.57	0.09				1.00	
Incremental Delay, d2				369.0	371.7	553.2	609.2	0.0				106.3	
Delay (s)				423.5	426.2	607.7	626.4	0.5				159.8	
Level of Service				F	F	F	F	A				F	
Approach Delay (s)		0.0			488.9			247.9				159.8	
Approach LOS		A			F			F				F	
Intersection Summary													
HCM 2000 Control Delay			338.3		HCM 2000 Level of Service							F	
HCM 2000 Volume to Capacity ratio			2.42										
Actuated Cycle Length (s)			130.0		Sum of lost time (s)						32.0		
Intersection Capacity Utilization			115.2%		ICU Level of Service						H		
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	244	430	199	1838	678	803
v/c Ratio	0.71	0.64	0.44	1.02dr	1.45	0.32
Control Delay	61.7	53.3	9.1	40.7	229.9	6.9
Queue Delay	0.8	0.0	0.0	46.3	3.4	12.7
Total Delay	62.5	53.3	9.1	87.0	233.3	19.6
Queue Length 50th (ft)	194	177	0	509	~759	80
Queue Length 95th (ft)	286	232	66	581	m#439	m57
Internal Link Dist (ft)		62		300		174
Turn Bay Length (ft)						
Base Capacity (vph)	343	674	455	2058	467	2534
Starvation Cap Reductn	0	0	0	0	136	1713
Spillback Cap Reductn	15	0	0	417	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.64	0.44	1.12	2.05	0.98

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

19: Menchaca Road & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗					↑↑↑		↘	↑↑	
Traffic Volume (vph)	217	383	193	0	0	0	0	1056	624	549	787	0
Future Volume (vph)	217	383	193	0	0	0	0	1056	624	549	787	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0					5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00					0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99					0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.94		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1787	3505	1533					4807		1787	3505	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1787	3505	1533					4807		1787	3505	
Peak-hour factor, PHF	0.89	0.89	0.97	0.92	0.92	0.92	0.92	0.95	0.86	0.81	0.98	0.92
Adj. Flow (vph)	244	430	199	0	0	0	0	1112	726	678	803	0
RTOR Reduction (vph)	0	0	159	0	0	0	0	24	0	0	0	0
Lane Group Flow (vph)	244	430	40	0	0	0	0	1814	0	678	803	0
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	3%	4%	2%	2%	2%	2%	1%	1%	1%	3%	2%
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		8 10						1 2		6 7	1 2 6 7	
Permitted Phases	8 10		8 10									
Actuated Green, G (s)	26.0	26.0	26.0					55.0		33.0	93.0	
Effective Green, g (s)	26.0	26.0	26.0					55.0		33.0	93.0	
Actuated g/C Ratio	0.20	0.20	0.20					0.42		0.25	0.72	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	357	701	306					2033		453	2507	
v/s Ratio Prot		0.12						c0.38		c0.38	0.23	
v/s Ratio Perm	c0.14		0.03									
v/c Ratio	0.68	0.61	0.13					1.02dr		1.50	0.32	
Uniform Delay, d1	48.2	47.4	42.7					34.8		48.5	6.8	
Progression Factor	1.00	1.00	1.00					1.00		0.55	1.06	
Incremental Delay, d2	4.3	1.1	0.1					5.3		224.6	0.0	
Delay (s)	52.5	48.5	42.8					40.0		251.5	7.2	
Level of Service	D	D	D					D		F	A	
Approach Delay (s)		48.3			0.0			40.0			119.1	
Approach LOS		D			A			D			F	

Intersection Summary

HCM 2000 Control Delay	69.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	32.0
Intersection Capacity Utilization	115.2%	ICU Level of Service	H
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

Intersection												
Int Delay, s/veh	18.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	12	147	147	13	128	3	143	9	96	2	19	28
Future Vol, veh/h	12	147	147	13	128	3	143	9	96	2	19	28
Conflicting Peds, #/hr	15	0	4	4	0	15	9	0	15	15	0	9
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	66	74	95	58	60	76	75	60	60	60	75
Heavy Vehicles, %	0	0	6	0	0	0	11	17	2	0	0	0
Mvmt Flow	24	223	199	14	221	5	188	12	160	3	32	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	241	0	0	426	0	0	670	644	342	739	741	248
Stage 1	-	-	-	-	-	-	375	375	-	267	267	-
Stage 2	-	-	-	-	-	-	295	269	-	472	474	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.21	6.67	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.21	5.67	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.21	5.67	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.599	4.153	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1337	-	-	1144	-	-	359	373	701	336	347	796
Stage 1	-	-	-	-	-	-	628	592	-	743	692	-
Stage 2	-	-	-	-	-	-	694	660	-	576	561	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1318	-	-	1140	-	-	304	352	688	237	328	778
Mov Cap-2 Maneuver	-	-	-	-	-	-	304	352	-	237	328	-
Stage 1	-	-	-	-	-	-	610	575	-	715	673	-
Stage 2	-	-	-	-	-	-	615	642	-	416	545	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.5			52.7			14.4		
HCM LOS							F			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	407	1318	-	-	1140	-	-	456
HCM Lane V/C Ratio	0.885	0.018	-	-	0.012	-	-	0.159
HCM Control Delay (s)	52.7	7.8	0	-	8.2	0	-	14.4
HCM Lane LOS	F	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	9.1	0.1	-	-	0	-	-	0.6

21: S Lamar Blvd & Driveway A
 HCM Unsignalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted AM



Movement	EBL	EBR	NBL	NBT	SBT	SBR					
Lane Configurations											
Traffic Volume (veh/h)	0	0	0	1827	1071	84					
Future Volume (Veh/h)	0	0	0	1827	1071	84					
Sign Control	Stop			Free		Free					
Grade	0%			0%		0%					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92					
Hourly flow rate (vph)	0	0	0	1986	1164	91					
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type				None	None						
Median storage (veh)											
Upstream signal (ft)				408	941						
pX, platoon unblocked											
vC, conflicting volume	1706	336	1255								
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	1706	336	1255								
tC, single (s)	6.8	6.9	4.1								
tC, 2 stage (s)											
tF (s)	3.5	3.3	2.2								
p0 queue free %	100	100	100								
cM capacity (veh/h)	82	659	550								
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4		
Volume Total	0	496	496	496	496	333	333	333	257		
Volume Left	0	0	0	0	0	0	0	0	0		
Volume Right	0	0	0	0	0	0	0	0	91		
cSH	1700	1700	1700	1700	1700	1700	1700	1700	1700		
Volume to Capacity	0.00	0.29	0.29	0.29	0.29	0.20	0.20	0.20	0.15		
Queue Length 95th (ft)	0	0	0	0	0	0	0	0	0		
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Lane LOS	A										
Approach Delay (s)	0.0	0.0					0.0				
Approach LOS	A										
Intersection Summary											
Average Delay	0.0										
Intersection Capacity Utilization	29.8%			ICU Level of Service				A			
Analysis Period (min)	15										

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑↑	
Traffic Vol, veh/h	0	70	0	668	805	17
Future Vol, veh/h	0	70	0	668	805	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	76	0	726	875	18

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	447	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-
Pot Cap-1 Maneuver	0	478	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	478	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	478	-	-
HCM Lane V/C Ratio	-	0.159	-	-
HCM Control Delay (s)	-	14	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.6	-	-

Intersection						
Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↑↑↑ ↘				
Traffic Vol, veh/h	0	61	1660	92	0	0
Future Vol, veh/h	0	61	1660	92	0	0
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	-	-	-
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	66	1804	100	0	0

Major/Minor	Minor1	Major1	
Conflicting Flow All	-	952	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.14	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.92	-
Pot Cap-1 Maneuver	0	223	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	-	223	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB
HCM Control Delay, s	27.8	0
HCM LOS	D	

Minor Lane/Major Mvmt	NBT	NBRWBLn1
Capacity (veh/h)	-	- 223
HCM Lane V/C Ratio	-	- 0.297
HCM Control Delay (s)	-	- 27.8
HCM Lane LOS	-	- D
HCM 95th %tile Q(veh)	-	- 1.2



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	533	453	1766	701	433	2108
v/c Ratio	0.60	0.58	1.11	0.77	1.12	0.88
Control Delay	47.2	28.7	90.0	13.8	121.0	24.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.2	28.7	90.0	13.8	121.0	24.2
Queue Length 50th (ft)	212	277	~953	124	~384	733
Queue Length 95th (ft)	258	390	#1065	140	#508	864
Internal Link Dist (ft)	497		121			322
Turn Bay Length (ft)		125			125	
Base Capacity (vph)	890	779	1588	906	387	2382
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.58	1.11	0.77	1.12	0.88

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
















Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

1: S Lamar Blvd & W Oltorf Street
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted PM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		 			 
Traffic Volume (vph)	458	426	1660	596	355	1960
Future Volume (vph)	458	426	1660	596	355	1960
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1615	3574	1542	1787	3574
Flt Permitted	0.95	1.00	1.00	1.00	0.06	1.00
Satd. Flow (perm)	3433	1615	3574	1542	116	3574
Peak-hour factor, PHF	0.86	0.94	0.94	0.85	0.82	0.93
Adj. Flow (vph)	533	453	1766	701	433	2108
RTOR Reduction (vph)	0	2	0	221	0	0
Lane Group Flow (vph)	533	451	1766	480	433	2108
Confl. Peds. (#/hr)		10		6	6	
Confl. Bikes (#/hr)				5		
Heavy Vehicles (%)	2%	0%	1%	2%	1%	1%
Turn Type	Prot	pt+ov	NA	Perm	pm+pt	NA
Protected Phases	4	1 4	2		1	6
Permitted Phases		4		2	6	
Actuated Green, G (s)	35.0	65.0	60.0	60.0	90.0	90.0
Effective Green, g (s)	35.0	65.0	60.0	60.0	90.0	90.0
Actuated g/C Ratio	0.26	0.48	0.44	0.44	0.67	0.67
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	1.0		1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	890	777	1588	685	386	2382
v/s Ratio Prot	0.16	c0.28	0.49		c0.21	0.59
v/s Ratio Perm				0.31	c0.54	
v/c Ratio	0.60	0.58	1.11	0.70	1.12	0.88
Uniform Delay, d1	43.8	25.2	37.5	30.3	46.4	18.3
Progression Factor	1.00	1.00	0.89	0.70	1.00	1.00
Incremental Delay, d2	3.0	3.2	57.4	4.2	83.1	5.3
Delay (s)	46.8	28.3	90.9	25.2	129.5	23.6
Level of Service	D	C	F	C	F	C
Approach Delay (s)	38.3		72.3			41.6
Approach LOS	D		E			D
Intersection Summary						
HCM 2000 Control Delay			53.7		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			1.00			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			91.1%		ICU Level of Service	F
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	133	333	122	206	2024	158	49	2203
v/c Ratio	0.60	0.81	0.66	0.82	0.80	0.14	0.80	1.11
Control Delay	56.2	53.4	60.9	49.8	19.2	6.6	76.9	81.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.2	53.4	60.9	49.8	19.2	6.6	76.9	81.7
Queue Length 50th (ft)	101	215	80	139	509	38	29	~1148
Queue Length 95th (ft)	126	104	109	m#265	840	m50	m45	#1288
Internal Link Dist (ft)		215	74		201			588
Turn Bay Length (ft)	75			50		125	50	
Base Capacity (vph)	222	509	295	250	2534	1104	61	1992
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.65	0.41	0.82	0.80	0.14	0.80	1.11

Intersection Summary

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

2: S Lamar Blvd & Bluebonnet Lane
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗			↖		↖	↕	↗	↖	↕	↗
Traffic Volume (vph)	101	43	208	0	48	53	173	1822	120	35	2113	1
Future Volume (vph)	101	43	208	0	48	53	173	1822	120	35	2113	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	0.97			0.97		1.00	1.00	0.95	1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.89			0.94		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1797	1635			1726		1787	3574	1529	1805	3539	
Flt Permitted	0.35	1.00			1.00		0.05	1.00	1.00	0.06	1.00	
Satd. Flow (perm)	658	1635			1726		93	3574	1529	111	3539	
Peak-hour factor, PHF	0.76	0.47	0.86	0.69	0.75	0.91	0.84	0.90	0.76	0.72	0.96	0.60
Adj. Flow (vph)	133	91	242	0	64	58	206	2024	158	49	2201	2
RTOR Reduction (vph)	0	66	0	0	26	0	0	0	21	0	0	0
Lane Group Flow (vph)	133	267	0	0	96	0	206	2024	137	49	2203	0
Confl. Peds. (#/hr)	12		12	12			12	8	9	9		8
Confl. Bikes (#/hr)			6				5		12			4
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%	1%	1%	0%	0%	2%	0%
Turn Type	pm+pt	NA			NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4						2		2	6		
Actuated Green, G (s)	28.3	28.3			12.3		95.7	95.7	95.7	76.0	76.0	
Effective Green, g (s)	28.3	28.3			12.3		95.7	95.7	95.7	76.0	76.0	
Actuated g/C Ratio	0.21	0.21			0.09		0.71	0.71	0.71	0.56	0.56	
Clearance Time (s)	6.0	6.0			6.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0			2.0		1.0	1.0	1.0	1.0	1.0	
Lane Grp Cap (vph)	222	342			157		250	2533	1083	62	1992	
v/s Ratio Prot	0.04	c0.16			0.06		0.09	c0.57			c0.62	
v/s Ratio Perm	0.08						0.49		0.09	0.44		
v/c Ratio	0.60	0.78			0.61		0.82	0.80	0.13	0.79	1.11	
Uniform Delay, d1	45.9	50.4			59.0		45.8	13.2	6.3	23.2	29.5	
Progression Factor	1.00	1.00			1.00		0.97	1.22	1.63	1.10	1.01	
Incremental Delay, d2	2.9	9.8			4.5		14.6	1.4	0.1	40.8	52.3	
Delay (s)	48.8	60.2			63.6		59.0	17.5	10.4	66.4	82.0	
Level of Service	D	E			E		E	B	B	E	F	
Approach Delay (s)		57.0			63.6			20.6			81.7	
Approach LOS		E			E			C			F	

Intersection Summary

HCM 2000 Control Delay	51.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	102.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	762	1806	32	708	2080
v/c Ratio	0.91	0.81	0.03	1.37	0.87
Control Delay	59.9	15.6	0.6	217.2	7.0
Queue Delay	0.0	0.2	0.0	0.0	0.8
Total Delay	59.9	15.8	0.6	217.2	7.8
Queue Length 50th (ft)	352	730	1	~843	145
Queue Length 95th (ft)	#480	877	m1	m#777	m140
Internal Link Dist (ft)		324			498
Turn Bay Length (ft)				100	
Base Capacity (vph)	838	2223	993	516	2385
Starvation Cap Reductn	0	47	0	0	0
Spillback Cap Reductn	0	0	0	0	106
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.91	0.83	0.03	1.37	0.91

Intersection Summary

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

3: S Lamar Blvd & Menchaca Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗↗	↕↕	↘	↙	↕↕
Traffic Volume (vph)	0	701	1625	24	609	1914
Future Volume (vph)	0	701	1625	24	609	1914
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0
Lane Util. Factor		0.88	0.95	1.00	1.00	0.95
Frbp, ped/bikes		1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		2814	3574	1581	1787	3539
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		2814	3574	1581	1787	3539
Peak-hour factor, PHF	0.92	0.92	0.90	0.75	0.86	0.92
Adj. Flow (vph)	0	762	1806	32	708	2080
RTOR Reduction (vph)	0	26	0	10	0	0
Lane Group Flow (vph)	0	736	1806	22	708	2080
Confl. Peds. (#/hr)		7		6	6	
Confl. Bikes (#/hr)		1		9		
Heavy Vehicles (%)	2%	1%	1%	0%	1%	2%
Turn Type		pt+ov	NA	Perm	Prot	NA
Protected Phases		1 4	2 3		1 4	1 2
Permitted Phases				2 3		
Actuated Green, G (s)		39.0	84.0	84.0	39.0	91.0
Effective Green, g (s)		39.0	84.0	84.0	39.0	91.0
Actuated g/C Ratio		0.29	0.62	0.62	0.29	0.67
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		812	2223	983	516	2385
v/s Ratio Prot		0.26	c0.51		c0.40	c0.59
v/s Ratio Perm				0.01		
v/c Ratio		0.91	0.81	0.02	1.37	0.87
Uniform Delay, d1		46.3	19.5	9.8	48.0	17.4
Progression Factor		1.00	0.66	0.13	1.31	0.29
Incremental Delay, d2		13.4	1.7	0.0	172.0	1.8
Delay (s)		59.7	14.5	1.2	234.9	6.8
Level of Service		E	B	A	F	A
Approach Delay (s)	59.7		14.2			64.7
Approach LOS	E		B			E
Intersection Summary						
HCM 2000 Control Delay			46.8		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			1.13			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	24.0
Intersection Capacity Utilization			105.3%		ICU Level of Service	G
Analysis Period (min)			15			
c Critical Lane Group						




























Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	117	396	96	176	226	1670	76	101	2041
v/c Ratio	0.54	0.58	0.86	0.28	1.88	0.69	0.07	4.04	0.93
Control Delay	61.1	38.0	107.5	45.7	450.8	6.6	0.3	1428.5	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	1.7
Total Delay	61.1	38.0	107.5	45.7	450.8	6.9	0.3	1428.5	10.3
Queue Length 50th (ft)	94	114	83	65	~301	273	1	~162	158
Queue Length 95th (ft)	154	136	#191	95	m#391	335	m1	m#191	371
Internal Link Dist (ft)		257		238		436			324
Turn Bay Length (ft)	90		100		125		160	100	
Base Capacity (vph)	215	684	112	636	120	2409	1088	25	2191
Starvation Cap Reductn	0	0	0	0	0	0	0	0	64
Spillback Cap Reductn	0	0	0	0	0	242	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.58	0.86	0.28	1.88	0.77	0.07	4.04	0.96

Intersection Summary

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

4: S Lamar Blvd & Barton Skyway/Lightsey Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (vph)	101	137	174	87	127	16	199	1503	67	76	1765	60
Future Volume (vph)	101	137	174	87	127	16	199	1503	67	76	1765	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.92		1.00	0.98		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1798	3267		1798	3518		1805	3574	1579	1736	3518	
Flt Permitted	0.64	1.00		0.33	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1211	3267		632	3518		1805	3574	1579	1736	3518	
Peak-hour factor, PHF	0.86	0.78	0.79	0.91	0.85	0.60	0.88	0.90	0.88	0.75	0.90	0.75
Adj. Flow (vph)	117	176	220	96	149	27	226	1670	76	101	1961	80
RTOR Reduction (vph)	0	104	0	0	11	0	0	0	24	0	2	0
Lane Group Flow (vph)	117	292	0	96	165	0	226	1670	52	101	2039	0
Confl. Peds. (#/hr)	3		5	5		3	5		18	18		5
Confl. Bikes (#/hr)			2						7			8
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	4%	2%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		8			8		5	5 6		7	6 7	
Permitted Phases	8			8					5 6			
Actuated Green, G (s)	24.0	24.0		24.0	24.0		9.0	91.0	91.0	2.0	84.0	
Effective Green, g (s)	24.0	24.0		24.0	24.0		9.0	91.0	91.0	2.0	84.0	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.07	0.67	0.67	0.01	0.62	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0			6.0		
Vehicle Extension (s)	2.0	2.0		2.0	2.0		1.0			1.0		
Lane Grp Cap (vph)	215	580		112	625		120	2409	1064	25	2188	
v/s Ratio Prot		0.09			0.05		c0.13	0.47		c0.06	c0.58	
v/s Ratio Perm	0.10			c0.15					0.03			
v/c Ratio	0.54	0.50		0.86	0.26		1.88	0.69	0.05	4.04	0.93	
Uniform Delay, d1	50.5	50.1		53.8	47.9		63.0	13.5	7.4	66.5	22.9	
Progression Factor	1.00	1.00		1.00	1.00		1.18	0.41	0.15	0.69	0.13	
Incremental Delay, d2	9.6	3.1		52.9	1.0		414.9	1.0	0.0	1414.5	4.3	
Delay (s)	60.1	53.2		106.7	48.9		489.2	6.5	1.2	1460.7	7.2	
Level of Service	E	D		F	D		F	A	A	F	A	
Approach Delay (s)		54.8			69.3			61.6			75.7	
Approach LOS		D			E			E			E	
Intersection Summary												
HCM 2000 Control Delay			67.5				HCM 2000 Level of Service			E		
HCM 2000 Volume to Capacity ratio			1.07									
Actuated Cycle Length (s)			135.0				Sum of lost time (s)			24.0		
Intersection Capacity Utilization			114.2%				ICU Level of Service			H		
Analysis Period (min)			15									
c Critical Lane Group												






















Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	115	155	237	37	1868	246	1848
v/c Ratio	0.49	0.58	0.58	0.40	0.86	1.72	0.73
Control Delay	47.5	57.9	32.1	27.9	25.6	367.0	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.5	57.9	32.1	27.9	25.6	367.0	4.7
Queue Length 50th (ft)	75	124	103	15	636	~275	107
Queue Length 95th (ft)	83	166	89	40	751	m#321	m121
Internal Link Dist (ft)	270		212		208		469
Turn Bay Length (ft)		120		95		125	
Base Capacity (vph)	233	267	411	94	2217	143	2562
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.58	0.58	0.39	0.84	1.72	0.72

Intersection Summary

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

5: S Lamar Blvd & Private Driveway/Panther Trail
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	12	33	118	8	179	29	1627	133	214	1753	15
Future Volume (veh/h)	37	12	33	118	8	179	29	1627	133	214	1753	15
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	1.00		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1814	1900	1900	1880	1900	1827	1881	1900
Adj Flow Rate, veh/h	53	20	42	155	13	224	37	1713	155	246	1826	22
Adj No. of Lanes	0	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.70	0.60	0.78	0.76	0.60	0.80	0.79	0.95	0.86	0.87	0.96	0.69
Percent Heavy Veh, %	0	0	0	0	0	5	0	1	2	4	1	0
Cap, veh/h	77	34	41	236	17	295	162	2083	186	196	2598	31
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.63	0.63	0.63	0.05	0.72	0.72
Sat Flow, veh/h	181	162	197	1362	82	1421	254	3308	295	1740	3616	43
Grp Volume(v), veh/h	115	0	0	155	0	237	37	913	955	246	901	947
Grp Sat Flow(s),veh/h/ln	541	0	0	1362	0	1503	254	1786	1817	1740	1787	1872
Q Serve(g_s), s	8.0	0.0	0.0	0.0	0.0	20.0	13.1	52.3	55.5	7.0	38.6	38.9
Cycle Q Clear(g_c), s	28.0	0.0	0.0	22.8	0.0	20.0	40.1	52.3	55.5	7.0	38.6	38.9
Prop In Lane	0.46		0.37	1.00		0.95	1.00		0.16	1.00		0.02
Lane Grp Cap(c), veh/h	151	0	0	236	0	312	162	1124	1144	196	1284	1345
V/C Ratio(X)	0.76	0.00	0.00	0.66	0.00	0.76	0.23	0.81	0.84	1.26	0.70	0.70
Avail Cap(c_a), veh/h	151	0	0	236	0	312	162	1124	1144	196	1284	1345
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.5	0.0	0.0	51.4	0.0	50.3	25.7	18.9	19.5	36.1	10.8	10.8
Incr Delay (d2), s/veh	29.8	0.0	0.0	13.3	0.0	15.9	3.2	6.4	7.3	149.8	3.2	3.1
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	5.5	0.0	0.0	6.4	0.0	9.7	1.1	27.6	29.9	15.4	19.9	20.9
LnGrp Delay(d),s/veh	87.3	0.0	0.0	64.8	0.0	66.3	28.9	25.4	26.8	185.9	14.0	13.9
LnGrp LOS	F			E		E	C	C	C	F	B	B
Approach Vol, veh/h		115			392			1905			2094	
Approach Delay, s/veh		87.3			65.7			26.1			34.2	
Approach LOS		F			E			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	12.0	90.0		33.0		102.0		33.0				
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s	7.0	85.0		28.0		97.0		28.0				
Max Q Clear Time (g_c+I1), s	9.0	57.5		30.0		40.9		24.8				
Green Ext Time (p_c), s	0.0	6.0		0.0		4.9		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				34.9								
HCM 2010 LOS				C								

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Driveway B/Private Driveway
Queues

Phase 1-2026 Site+Forecasted PM



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL2	SBT	NWL	NWR
Lane Group Flow (vph)	352	355	165	159	627	187	1737	534	1313
v/c Ratio	1.39	0.89	0.95	0.46	0.52	1.23	0.57	2.48	1.21
Control Delay	232.4	48.2	99.1	17.3	36.8	196.2	25.4	705.1	134.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	232.4	48.2	99.1	17.3	36.8	196.2	25.4	705.1	134.4
Queue Length 50th (ft)	~378	138	114	20	223	~194	297	~747	~698
Queue Length 95th (ft)	#515	157	#229	11	284	#325	334	#608	#785
Internal Link Dist (ft)		165		155	240		328	179	
Turn Bay Length (ft)						160			
Base Capacity (vph)	254	401	174	342	1195	152	3039	215	1088
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.39	0.89	0.95	0.46	0.52	1.23	0.57	2.48	1.21

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Driveway B/Private Driveway
 HCM Signalized Intersection Capacity Analysis

Phase 1-2026 Site+Forecasted PM



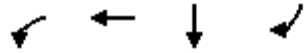
Movement	EBL	EBT	EBR2	WBL	WBT	WBR	NBT	SBL2	SBT	SBR	NWL	NWR
Lane Configurations	↖	↗		↖	↗		↑↑	↖	↑↑↑		↖	↗
Traffic Volume (vph)	289	36	265	157	15	90	577	161	1517	71	331	989
Future Volume (vph)	289	36	265	157	15	90	577	161	1517	71	331	989
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		5.5	7.0	5.5		7.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		0.95	1.00	0.86		1.00	0.88
Frbp, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.87		1.00	0.88		1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1804	1633		1787	1613		3574	1805	6409		1805	2842
Flt Permitted	0.50	1.00		0.22	1.00		1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	956	1633		407	1613		3574	1805	6409		1805	2842
Peak-hour factor, PHF	0.82	0.72	0.87	0.95	0.55	0.68	0.92	0.86	0.93	0.67	0.62	0.86
Adj. Flow (vph)	352	50	305	165	27	132	627	187	1631	106	534	1150
RTOR Reduction (vph)	0	169	0	0	113	0	0	0	7	0	0	137
Lane Group Flow (vph)	352	186	0	165	46	0	627	187	1730	0	534	1176
Confl. Peds. (#/hr)	2		1	1		2				10	10	
Confl. Bikes (#/hr)			1			2				1		
Heavy Vehicles (%)	0%	0%	0%	1%	0%	2%	1%	0%	1%	0%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA		NA	Prot	NA		Prot	Prot
Protected Phases	7	4		3	8		2!	1	6		5	2!
Permitted Phases	4			8								
Actuated Green, G (s)	27.0	18.5		27.0	18.5		43.5	11.0	61.5		15.5	43.5
Effective Green, g (s)	27.0	18.5		27.0	18.5		43.5	11.0	61.5		15.5	43.5
Actuated g/C Ratio	0.21	0.14		0.21	0.14		0.33	0.08	0.47		0.12	0.33
Clearance Time (s)	6.5	6.5		6.5	6.5		5.5	7.0	5.5		7.5	5.5
Vehicle Extension (s)	1.0	3.0		3.0	3.0		3.0	2.0	2.0		3.0	3.0
Lane Grp Cap (vph)	254	232		174	229		1195	152	3031		215	950
v/s Ratio Prot	c0.09	0.11		0.06	0.03		0.18	c0.10	0.27		c0.30	c0.41
v/s Ratio Perm	c0.20			0.13								
v/c Ratio	1.39	0.80		0.95	0.20		0.52	1.23	0.57		2.48	1.24
Uniform Delay, d1	50.6	54.0		48.2	49.2		34.9	59.5	24.7		57.2	43.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	196.2	24.6		52.6	2.0		1.7	147.9	0.8		681.4	116.1
Delay (s)	246.8	78.6		100.8	51.2		36.6	207.4	25.5		738.7	159.4
Level of Service	F	E		F	D		D	F	C		F	F
Approach Delay (s)		162.3			76.4		36.6		43.2		326.8	
Approach LOS		F			E		D		D		F	

Intersection Summary		
HCM 2000 Control Delay	156.4	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	1.48	F
Actuated Cycle Length (s)	130.0	Sum of lost time (s)
Intersection Capacity Utilization	142.2%	33.0
Analysis Period (min)	15	ICU Level of Service
		H

! Phase conflict between lane groups.
 c Critical Lane Group



Movement	NWR2
Lane Configurations	
Traffic Volume (vph)	98
Future Volume (vph)	98
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frbp, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.60
Adj. Flow (vph)	163
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	2
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Lane Group	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	618	1286	1440	340
v/c Ratio	0.77	0.80	0.62	0.21
Control Delay	6.8	7.2	36.8	0.3
Queue Delay	0.0	0.0	0.1	0.0
Total Delay	6.8	7.2	36.9	0.3
Queue Length 50th (ft)	141	148	300	0
Queue Length 95th (ft)	m0	m12	330	0
Internal Link Dist (ft)		23	453	
Turn Bay Length (ft)				
Base Capacity (vph)	803	1606	2325	1595
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	1	1	152	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.77	0.80	0.66	0.21

Intersection Summary

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

7: S Lamar Blvd & Capity of Texas Hwy
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations				↖	↕						↑↑↑	↗	
Traffic Volume (vph)	0	0	0	626	947	0	0	0	0	0	1267	309	
Future Volume (vph)	0	0	0	626	947	0	0	0	0	0	1267	309	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				6.0	6.0						6.0	4.0	
Lane Util. Factor				0.91	0.91						0.86	1.00	
Frbp, ped/bikes				1.00	1.00						1.00	0.99	
Flpb, ped/bikes				1.00	1.00						1.00	1.00	
Frt				1.00	1.00						1.00	0.85	
Flt Protected				0.95	0.99						1.00	1.00	
Satd. Flow (prot)				1626	3375						6408	1595	
Flt Permitted				0.95	0.99						1.00	1.00	
Satd. Flow (perm)				1626	3375						6408	1595	
Peak-hour factor, PHF	0.92	0.92	0.92	0.82	0.83	0.92	0.92	0.92	0.92	0.92	0.88	0.91	
Adj. Flow (vph)	0	0	0	763	1141	0	0	0	0	0	1440	340	
RTOR Reduction (vph)	0	0	0	56	56	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	562	1230	0	0	0	0	0	1440	340	
Confl. Bikes (#/hr)												1	
Heavy Vehicles (%)	2%	2%	2%	1%	2%	0%	2%	2%	2%	2%	2%	0%	
Turn Type				custom	NA						NA	Free	
Protected Phases				1 2 4 8	1 2 4 8						5 6 7		
Permitted Phases				3	3							Free	
Actuated Green, G (s)				63.0	63.0						56.0	135.0	
Effective Green, g (s)				63.0	63.0						56.0	135.0	
Actuated g/C Ratio				0.47	0.47						0.41	1.00	
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				831	1725						2658	1595	
v/s Ratio Prot				0.31	c0.33						c0.22		
v/s Ratio Perm				0.04	0.04							0.21	
v/c Ratio				0.68	0.71						0.54	0.21	
Uniform Delay, d1				28.1	28.8						29.8	0.0	
Progression Factor				0.30	0.30						1.00	1.00	
Incremental Delay, d2				0.2	0.1						0.8	0.3	
Delay (s)				8.7	8.7						30.6	0.3	
Level of Service				A	A						C	A	
Approach Delay (s)		0.0			8.7			0.0			24.8		
Approach LOS		A			A			A			C		
Intersection Summary													
HCM 2000 Control Delay			16.5		HCM 2000 Level of Service						B		
HCM 2000 Volume to Capacity ratio			0.83										
Actuated Cycle Length (s)			135.0		Sum of lost time (s)					40.0			
Intersection Capacity Utilization			76.9%		ICU Level of Service					D			
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	WBT	NBL	NBT
Lane Group Flow (vph)	1493	332	1049
v/c Ratio	1.37	0.34	0.35
Control Delay	206.7	3.8	3.9
Queue Delay	1.0	1.1	0.5
Total Delay	207.7	4.9	4.4
Queue Length 50th (ft)	~636	0	98
Queue Length 95th (ft)	#714	m10	m12
Internal Link Dist (ft)	133		295
Turn Bay Length (ft)			
Base Capacity (vph)	1092	974	3001
Starvation Cap Reductn	0	412	1339
Spillback Cap Reductn	198	9	10
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.67	0.59	0.63

Intersection Summary

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

8: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↑	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1329	0	358	859	0	0	0	0
Future Volume (vph)	0	0	0	0	1329	0	358	859	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0		6.0	6.0				
Lane Util. Factor					0.91		0.86	0.86				
Frt					1.00		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					5085		1537	4873				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					5085		1537	4873				
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.89	0.89	0.82	0.91	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1493	0	437	944	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	40	40	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1493	0	292	1009	0	0	0	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	0%	2%	2%	2%	2%
Turn Type					NA		custom	NA				
Protected Phases					1 7 8		2 3 4 5	2 3 4 5				
Permitted Phases							6	6				
Actuated Green, G (s)					32.0		85.0	85.0				
Effective Green, g (s)					30.0		83.0	83.0				
Actuated g/C Ratio					0.22		0.61	0.61				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)					1130		1013	3212				
v/s Ratio Prot					c0.29		0.09	c0.10				
v/s Ratio Perm							0.10	0.11				
v/c Ratio					1.32		0.29	0.31				
Uniform Delay, d1					52.5		12.2	12.4				
Progression Factor					0.85		0.57	0.44				
Incremental Delay, d2					150.6		0.0	0.0				
Delay (s)					195.0		7.0	5.5				
Level of Service					F		A	A				
Approach Delay (s)		0.0			195.0			5.9			0.0	
Approach LOS		A			F			A			A	
Intersection Summary												
HCM 2000 Control Delay			104.1				HCM 2000 Level of Service		F			
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			135.0				Sum of lost time (s)		40.0			
Intersection Capacity Utilization			75.0%				ICU Level of Service		D			
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	EBT	SBL	SBT
Lane Group Flow (vph)	1369	510	1586
v/c Ratio	1.15	0.50	0.50
Control Delay	123.4	4.6	4.6
Queue Delay	0.3	0.4	0.2
Total Delay	123.7	5.0	4.8
Queue Length 50th (ft)	~515	3	31
Queue Length 95th (ft)	#601	438	155
Internal Link Dist (ft)	69		291
Turn Bay Length (ft)			
Base Capacity (vph)	1191	1018	3160
Starvation Cap Reductn	0	166	569
Spillback Cap Reductn	68	42	64
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.22	0.60	0.61

Intersection Summary

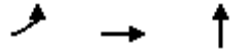
- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

9: S Lamar Blvd & Capity of Texas Hwy
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↑↑↑								↘	↑↑↑		
Traffic Volume (vph)	0	1218	0	0	0	0	0	0	0	680	1204	0	
Future Volume (vph)	0	1218	0	0	0	0	0	0	0	680	1204	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		2.0								6.0	6.0		
Lane Util. Factor		0.91								0.86	0.86		
Frbp, ped/bikes		1.00								1.00	1.00		
Flpb, ped/bikes		1.00								1.00	1.00		
Frt		1.00								1.00	1.00		
Flt Protected		1.00								0.95	0.99		
Satd. Flow (prot)		5187								1522	4846		
Flt Permitted		1.00								0.95	0.99		
Satd. Flow (perm)		5187								1522	4846		
Peak-hour factor, PHF	0.92	0.89	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.88	0.91	0.92	
Adj. Flow (vph)	0	1369	0	0	0	0	0	0	0	773	1323	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	37	37	0	
Lane Group Flow (vph)	0	1369	0	0	0	0	0	0	0	473	1549	0	
Confl. Bikes (#/hr)			1										
Heavy Vehicles (%)	2%	0%	0%	2%	2%	2%	2%	2%	2%	2%	0%	0%	
Turn Type		NA								custom	NA		
Protected Phases		3 4 5								1 2 6 8	1 2 6 8		
Permitted Phases										7	7		
Actuated Green, G (s)		27.0								88.0	88.0		
Effective Green, g (s)		21.0								88.0	88.0		
Actuated g/C Ratio		0.16								0.65	0.65		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)		806								1059	3374		
v/s Ratio Prot		c0.26								0.29	c0.30		
v/s Ratio Perm										0.02	0.02		
v/c Ratio		1.70								0.45	0.46		
Uniform Delay, d1		57.0								11.5	11.7		
Progression Factor		1.00								0.48	0.52		
Incremental Delay, d2		319.7								0.1	0.0		
Delay (s)		376.7								5.7	6.1		
Level of Service		F								A	A		
Approach Delay (s)		376.7			0.0			0.0			6.0		
Approach LOS		F			A			A			A		
Intersection Summary													
HCM 2000 Control Delay			152.4		HCM 2000 Level of Service						F		
HCM 2000 Volume to Capacity ratio			0.83										
Actuated Cycle Length (s)			135.0		Sum of lost time (s)					40.0			
Intersection Capacity Utilization			59.7%		ICU Level of Service					B			
Analysis Period (min)			15										
c Critical Lane Group													





















Lane Group	EBL	EBT	NBT
Lane Group Flow (vph)	508	1458	1465
v/c Ratio	0.44	0.62	1.58
Control Delay	1.3	7.1	302.2
Queue Delay	4.6	6.8	0.0
Total Delay	5.9	13.9	302.2
Queue Length 50th (ft)	3	558	~521
Queue Length 95th (ft)	m0	m490	#533
Internal Link Dist (ft)		38	673
Turn Bay Length (ft)			
Base Capacity (vph)	1165	2362	927
Starvation Cap Reductn	571	855	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.86	0.97	1.58

Intersection Summary

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

10: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 						  				
Traffic Volume (vph)	502	1360	0	0	0	0	0	906	310	0	0	0
Future Volume (vph)	502	1360	0	0	0	0	0	906	310	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0						6.0				
Lane Util. Factor	0.91	0.91						0.86				
Frpb, ped/bikes	1.00	1.00						1.00				
Flpb, ped/bikes	1.00	1.00						1.00				
Frt	1.00	1.00						0.96				
Flt Protected	0.95	1.00						1.00				
Satd. Flow (prot)	1643	3418						6263				
Flt Permitted	0.95	1.00						1.00				
Satd. Flow (perm)	1643	3418						6263				
Peak-hour factor, PHF	0.89	0.97	0.92	0.92	0.92	0.92	0.92	0.83	0.83	0.92	0.92	0.92
Adj. Flow (vph)	564	1402	0	0	0	0	0	1092	373	0	0	0
RTOR Reduction (vph)	45	33	0	0	0	0	0	43	0	0	0	0
Lane Group Flow (vph)	463	1425	0	0	0	0	0	1422	0	0	0	0
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	0%	1%	2%	2%	2%	2%	2%	0%	0%	2%	2%	2%
Turn Type	custom	NA						NA				
Protected Phases	4 5 6 8	4 5 6 8						1 2 3				
Permitted Phases	7	7										
Actuated Green, G (s)	93.0	93.0						26.0				
Effective Green, g (s)	93.0	93.0						26.0				
Actuated g/C Ratio	0.69	0.69						0.19				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	1204	2506						1206				
v/s Ratio Prot	0.26	c0.39						c0.23				
v/s Ratio Perm	0.02	0.03										
v/c Ratio	0.38	0.57						1.18				
Uniform Delay, d1	8.9	10.7						54.5				
Progression Factor	0.19	0.91						1.00				
Incremental Delay, d2	0.0	0.1						89.5				
Delay (s)	1.7	9.9						144.0				
Level of Service	A	A						F				
Approach Delay (s)		7.8			0.0			144.0			0.0	
Approach LOS		A			A			F			A	
Intersection Summary												
HCM 2000 Control Delay			65.9					HCM 2000 Level of Service			E	
HCM 2000 Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			135.0					Sum of lost time (s)		40.0		
Intersection Capacity Utilization			63.1%					ICU Level of Service		B		
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	743	1532	27	158	190	176
v/c Ratio	2.62	2.63	0.07	0.33	0.12	0.14
Control Delay	759.4	759.4	0.3	8.1	1.3	25.3
Queue Delay	1.3	0.6	0.0	1.5	0.0	0.0
Total Delay	760.8	760.0	0.3	9.6	1.3	25.4
Queue Length 50th (ft)	~1156	~1192	0	19	4	26
Queue Length 95th (ft)	#1384	#1339	0	m18	m4	38
Internal Link Dist (ft)		364			236	206
Turn Bay Length (ft)						
Base Capacity (vph)	284	583	392	531	1626	1257
Starvation Cap Reductn	0	0	0	228	0	0
Spillback Cap Reductn	28	44	0	0	0	167
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	2.90	2.84	0.07	0.52	0.12	0.16

Intersection Summary

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

11: West Gate Blvd & US 290 WBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	0	0	1189	869	19	284	25	0	0	83	44	
Future Volume (vph)	0	0	0	1189	869	19	284	25	0	0	83	44	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				5.5	5.5	5.5	5.5	6.0			6.0		
Lane Util. Factor				0.91	0.91	1.00	0.91	0.91			0.91		
Frbp, ped/bikes				1.00	1.00	0.99	1.00	1.00			0.99		
Flpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00		
Frt				1.00	1.00	0.85	1.00	1.00			0.95		
Flt Protected				0.95	0.98	1.00	0.95	0.96			1.00		
Satd. Flow (prot)				1643	3370	1487	1625	3263			4774		
Flt Permitted				0.95	0.98	1.00	0.64	0.66			1.00		
Satd. Flow (perm)				1643	3370	1487	1088	2237			4774		
Peak-hour factor, PHF	0.92	0.92	0.92	0.88	0.94	0.70	0.90	0.79	0.92	0.92	0.74	0.69	
Adj. Flow (vph)	0	0	0	1351	924	27	316	32	0	0	112	64	
RTOR Reduction (vph)	0	0	0	0	0	22	0	0	0	0	48	0	
Lane Group Flow (vph)	0	0	0	743	1532	5	158	190	0	0	128	0	
Confl. Peds. (#/hr)							2					2	
Confl. Bikes (#/hr)						2							
Heavy Vehicles (%)	2%	2%	2%	0%	1%	7%	1%	5%	2%	2%	0%	6%	
Turn Type				Perm	NA	Perm	custom	NA				NA	
Protected Phases					4 5			1 2 6 7				1 2	
Permitted Phases				4 5		4 5	6 7						
Actuated Green, G (s)				22.0	22.0	22.0	57.5	96.5				33.5	
Effective Green, g (s)				22.0	22.0	22.0	57.5	85.5				33.5	
Actuated g/C Ratio				0.17	0.17	0.17	0.44	0.66				0.26	
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				278	570	251	481	1471				1230	
v/s Ratio Prot												0.03	
v/s Ratio Perm				0.45	0.45	0.00	c0.15	c0.08					
v/c Ratio				2.67	2.69	0.02	0.33	0.13				0.10	
Uniform Delay, d1				54.0	54.0	45.0	23.7	8.3				36.8	
Progression Factor				1.00	1.00	1.00	0.31	0.25				1.00	
Incremental Delay, d2				762.9	764.5	0.1	0.1	0.0				0.0	
Delay (s)				816.9	818.5	45.1	7.4	2.1				36.8	
Level of Service				F	F	D	A	A				D	
Approach Delay (s)		0.0			808.9			4.5				36.8	
Approach LOS		A			F			A				D	
Intersection Summary													
HCM 2000 Control Delay			661.8		HCM 2000 Level of Service							F	
HCM 2000 Volume to Capacity ratio			0.86										
Actuated Cycle Length (s)			130.0		Sum of lost time (s)						34.0		
Intersection Capacity Utilization			92.2%		ICU Level of Service						F		
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	31	904	612	285	117	1368
v/c Ratio	0.05	0.71	0.90	0.58	0.20	0.70
Control Delay	24.9	37.2	56.8	10.5	58.1	25.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	49.2
Total Delay	24.9	37.2	56.8	10.5	58.1	74.4
Queue Length 50th (ft)	16	323	217	0	76	304
Queue Length 95th (ft)	27	343	#327	59	m34	m4
Internal Link Dist (ft)		52	369			236
Turn Bay Length (ft)						
Base Capacity (vph)	659	1261	681	488	579	1963
Starvation Cap Reductn	0	0	0	0	0	855
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.72	0.90	0.58	0.20	1.23

Intersection Summary

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

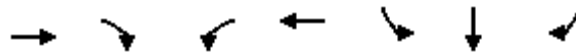
Queue shown is maximum after two cycles.

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

12: West Gate Blvd & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (vph)	21	524	251	0	0	0	0	297	474	96	1204	0		
Future Volume (vph)	21	524	251	0	0	0	0	297	474	96	1204	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	6.0	6.0						6.0	6.0	5.5	5.5			
Lane Util. Factor	1.00	0.95						0.91	0.91	1.00	0.95			
Frbp, ped/bikes	1.00	1.00						0.99	0.99	1.00	1.00			
Flpb, ped/bikes	1.00	1.00						1.00	1.00	1.00	1.00			
Frt	1.00	0.95						0.93	0.85	1.00	1.00			
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00			
Satd. Flow (prot)	1805	3398						3162	1433	1805	3610			
Flt Permitted	0.95	1.00						1.00	1.00	0.95	1.00			
Satd. Flow (perm)	1805	3398						3162	1433	1805	3610			
Peak-hour factor, PHF	0.67	0.83	0.92	0.92	0.92	0.92	0.92	0.91	0.83	0.82	0.88	0.92		
Adj. Flow (vph)	31	631	273	0	0	0	0	326	571	117	1368	0		
RTOR Reduction (vph)	0	20	0	0	0	0	0	121	233	0	0	0		
Lane Group Flow (vph)	31	884	0	0	0	0	0	491	52	117	1368	0		
Confl. Peds. (#/hr)			1						1	1				
Confl. Bikes (#/hr)			1						1					
Heavy Vehicles (%)	0%	1%	1%	2%	2%	2%	2%	1%	1%	0%	0%	0%		
Turn Type	Split	NA						NA	Perm	Prot	NA			
Protected Phases	1 7	1 7						5 6		2 4	2 4 5 6			
Permitted Phases									5 6					
Actuated Green, G (s)	47.7	47.7						23.5	23.5	41.8	70.8			
Effective Green, g (s)	42.2	42.2						23.5	23.5	41.8	64.8			
Actuated g/C Ratio	0.32	0.32						0.18	0.18	0.32	0.50			
Clearance Time (s)														
Vehicle Extension (s)														
Lane Grp Cap (vph)	585	1103						571	259	580	1799			
v/s Ratio Prot	0.02	c0.26						c0.16		0.06	c0.38			
v/s Ratio Perm									0.04					
v/c Ratio	0.05	0.80						0.86	0.20	0.20	0.76			
Uniform Delay, d1	30.2	40.1						51.6	45.3	32.0	26.3			
Progression Factor	1.00	1.00						1.00	1.00	1.71	1.10			
Incremental Delay, d2	0.0	4.0						15.5	1.7	0.1	0.3			
Delay (s)	30.2	44.1						67.1	47.0	54.7	29.1			
Level of Service	C	D						E	D	D	C			
Approach Delay (s)		43.7			0.0			60.7			31.2			
Approach LOS		D			A			E			C			
Intersection Summary														
HCM 2000 Control Delay			42.7									HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio			0.92											
Actuated Cycle Length (s)			130.0								34.0			
Intersection Capacity Utilization			92.2%										ICU Level of Service	F
Analysis Period (min)			15											
c Critical Lane Group														



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	2906	1509	249	2791	312	327	321
v/c Ratio	0.89	1.44	1.13	0.70	1.19	1.21	0.20
Control Delay	32.6	231.9	145.3	16.2	178.3	182.6	0.3
Queue Delay	1.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.8	231.9	145.3	16.2	178.3	182.6	0.3
Queue Length 50th (ft)	1022	~2382	~295	1189	~466	~492	0
Queue Length 95th (ft)	1078	#2646	m#360	m1041	#641	#693	0
Internal Link Dist (ft)	834			1419		192	
Turn Bay Length (ft)		515	950				
Base Capacity (vph)	3252	1046	220	3966	262	271	1595
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	168	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	1.44	1.13	0.70	1.19	1.21	0.20

Intersection Summary

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

13: Capital of Texas Hwy & Mopac SBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑	↑	↑↑↑					↑	↑	↑
Traffic Volume (vph)	0	2790	1418	197	2679	0	0	0	0	316	239	247
Future Volume (vph)	0	2790	1418	197	2679	0	0	0	0	316	239	247
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0	7.0	7.0					6.5	6.5	4.0
Lane Util. Factor		0.91	1.00	1.00	0.91					0.95	0.95	1.00
Frbp, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	0.99
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		5136	1599	1787	5136					1715	1775	1595
Flt Permitted		1.00	1.00	0.03	1.00					0.95	0.99	1.00
Satd. Flow (perm)		5136	1599	62	5136					1715	1775	1595
Peak-hour factor, PHF	0.92	0.96	0.94	0.79	0.96	0.92	0.92	0.92	0.92	0.86	0.88	0.77
Adj. Flow (vph)	0	2906	1509	249	2791	0	0	0	0	367	272	321
RTOR Reduction (vph)	0	0	33	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2906	1476	249	2791	0	0	0	0	312	327	321
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	1%	1%	1%	1%	2%	2%	2%	2%	0%	1%	0%
Turn Type		NA	Perm	pm+pt	NA					Perm	NA	Free
Protected Phases		2		1	6						8	
Permitted Phases			2	6						8		Free
Actuated Green, G (s)		114.0	114.0	139.0	139.0					27.5	27.5	180.0
Effective Green, g (s)		114.0	114.0	139.0	139.0					27.5	27.5	180.0
Actuated g/C Ratio		0.63	0.63	0.77	0.77					0.15	0.15	1.00
Clearance Time (s)		7.0	7.0	7.0	7.0					6.5	6.5	
Vehicle Extension (s)		4.0	4.0	2.0	4.0					2.0	2.0	
Lane Grp Cap (vph)		3252	1012	220	3966					262	271	1595
v/s Ratio Prot		0.57		c0.11	0.54							
v/s Ratio Perm			c0.92	0.76						0.18	0.18	0.20
v/c Ratio		0.89	1.46	1.13	0.70					1.19	1.21	0.20
Uniform Delay, d1		27.9	33.0	69.1	10.2					76.2	76.2	0.0
Progression Factor		1.00	1.00	1.22	1.51					1.00	1.00	1.00
Incremental Delay, d2		4.3	211.7	84.1	0.5					117.3	122.4	0.3
Delay (s)		32.1	244.7	168.4	16.0					193.5	198.7	0.3
Level of Service		C	F	F	B					F	F	A
Approach Delay (s)		104.8			28.5			0.0			130.7	
Approach LOS		F			C			A			F	
Intersection Summary												
HCM 2000 Control Delay			80.2			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.38									
Actuated Cycle Length (s)			180.0			Sum of lost time (s)			20.5			
Intersection Capacity Utilization			130.8%			ICU Level of Service			H			
Analysis Period (min)			15									

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	373	3039	2007	2314	1052	113	390
v/c Ratio	0.85	1.19	0.86	1.45	0.99	0.29	1.02
Control Delay	56.5	109.8	38.1	222.4	95.8	62.3	107.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.5	109.8	38.1	222.4	95.8	62.3	107.9
Queue Length 50th (ft)	341	~2247	705	~1838	446	114	~421
Queue Length 95th (ft)	m#510	m#2256	m512	m#1489	#502	175	#542
Internal Link Dist (ft)		1419	756			675	
Turn Bay Length (ft)					300		
Base Capacity (vph)	437	2561	2596	1599	1060	395	381
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	1.19	0.77	1.45	0.99	0.29	1.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

























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

Queue shown is maximum after two cycles.

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

14: Mopac NBFR & Capital of Texas Hwy
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			  		  					
Traffic Volume (veh/h)	328	2857	0	0	1967	2129	905	99	320	0	0	0
Future Volume (veh/h)	328	2857	0	0	1967	2129	905	99	320	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1881	0	0	1881	1881	1900	1900	1881			
Adj Flow Rate, veh/h	373	3039	0	0	2007	0	1052	112	0			
Adj No. of Lanes	1	2	0	0	3	1	3	1	1			
Peak Hour Factor	0.88	0.94	0.92	0.92	0.98	0.92	0.86	0.88	0.82			
Percent Heavy Veh, %	2	1	0	0	1	1	0	0	1			
Cap, veh/h	508	2562	0	0	2147	668	1063	396	333			
Arrive On Green	0.52	1.00	0.00	0.00	0.42	0.00	0.21	0.21	0.00			
Sat Flow, veh/h	1774	3668	0	0	5305	1599	5103	1900	1599			
Grp Volume(v), veh/h	373	3039	0	0	2007	0	1052	112	0			
Grp Sat Flow(s),veh/h/ln	1774	1787	0	0	1712	1599	1701	1900	1599			
Q Serve(g_s), s	23.1	0.0	0.0	0.0	67.2	0.0	37.0	8.9	0.0			
Cycle Q Clear(g_c), s	23.1	0.0	0.0	0.0	67.2	0.0	37.0	8.9	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	508	2562	0	0	2147	668	1063	396	333			
V/C Ratio(X)	0.73	1.19	0.00	0.00	0.93	0.00	0.99	0.28	0.00			
Avail Cap(c_a), veh/h	508	2562	0	0	2596	808	1063	396	333			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.27	0.27	0.00	0.00	1.00	0.00	1.00	1.00	0.00			
Uniform Delay (d), s/veh	36.0	0.0	0.0	0.0	50.0	0.0	71.1	59.9	0.0			
Incr Delay (d2), s/veh	2.6	85.1	0.0	0.0	5.8	0.0	24.9	0.1	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			
%ile BackOfQ(50%),veh/ln	13.8	30.3	0.0	0.0	32.9	0.0	19.9	4.7	0.0			
LnGrp Delay(d),s/veh	38.6	85.1	0.0	0.0	55.9	0.0	96.0	60.1	0.0			
LnGrp LOS	D	F			E		F	E				
Approach Vol, veh/h		3412			2007			1164				
Approach Delay, s/veh		80.0			55.9			92.5				
Approach LOS		E			E			F				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		136.0		44.0	53.8	82.2						
Change Period (Y+Rc), s		7.0		6.5	7.0	7.0						
Max Green Setting (Gmax), s		129.0		37.5	31.0	91.0						
Max Q Clear Time (g_c+I1), s		2.0		39.0	25.1	69.2						
Green Ext Time (p_c), s		22.5		0.0	0.1	6.0						
Intersection Summary												
HCM 2010 Ctrl Delay				74.9								
HCM 2010 LOS				E								



Lane Group	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	274	4204	58	261	5585
v/c Ratio	0.59	1.07	0.05	0.89	1.42
Control Delay	74.3	59.8	1.7	92.5	214.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	74.3	59.8	1.7	92.5	214.7
Queue Length 50th (ft)	171	~2022	1	299	~3269
Queue Length 95th (ft)	188	#2073	6	m283	m#2877
Internal Link Dist (ft)		1281			1273
Turn Bay Length (ft)			430	550	
Base Capacity (vph)	537	3925	1199	340	3925
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.51	1.07	0.05	0.77	1.42

Intersection Summary

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

15: Capital of Texas Hwy & Barton Creek Plaza Dwy/Driveway E
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗↗	↕↕↕	↘	↘	↕↕↕
Traffic Volume (vph)	0	211	3910	37	201	5306
Future Volume (vph)	0	211	3910	37	201	5306
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	7.0	7.0	6.0	7.0
Lane Util. Factor		0.88	0.91	1.00	1.00	0.91
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		2842	5136	1553	1805	5136
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		2842	5136	1553	1805	5136
Peak-hour factor, PHF	0.92	0.77	0.93	0.64	0.77	0.95
Adj. Flow (vph)	0	274	4204	58	261	5585
RTOR Reduction (vph)	0	1	0	12	0	0
Lane Group Flow (vph)	0	273	4204	46	261	5585
Heavy Vehicles (%)	2%	0%	1%	4%	0%	1%
Turn Type		Over	NA	Prot	Prot	NA
Protected Phases		5	6	6	5	6
Permitted Phases						
Actuated Green, G (s)		29.4	137.6	137.6	29.4	137.6
Effective Green, g (s)		29.4	137.6	137.6	29.4	137.6
Actuated g/C Ratio		0.16	0.76	0.76	0.16	0.76
Clearance Time (s)		6.0	7.0	7.0	6.0	7.0
Vehicle Extension (s)		2.0	4.0	4.0	2.0	4.0
Lane Grp Cap (vph)		464	3926	1187	294	3926
v/s Ratio Prot		0.10	0.82	0.03	c0.14	c1.09
v/s Ratio Perm						
v/c Ratio		0.59	1.07	0.04	0.89	1.42
Uniform Delay, d1		69.7	21.2	5.1	73.7	21.2
Progression Factor		1.00	1.00	1.00	0.94	1.04
Incremental Delay, d2		1.2	37.7	0.1	20.0	191.3
Delay (s)		70.9	58.9	5.2	89.0	213.3
Level of Service		E	E	A	F	F
Approach Delay (s)	70.9		58.2			207.7
Approach LOS	E		E			F
Intersection Summary						
HCM 2000 Control Delay			142.7		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.33			
Actuated Cycle Length (s)			180.0		Sum of lost time (s)	13.0
Intersection Capacity Utilization			108.4%		ICU Level of Service	G
Analysis Period (min)			15			
c Critical Lane Group						





















Lane Group	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	145	1290	125	149	522	97
v/c Ratio	0.16	0.65	0.68	0.23	1.19	0.22
Control Delay	14.9	22.1	41.3	16.0	152.3	6.1
Queue Delay	0.1	0.0	0.0	1.4	1.1	0.0
Total Delay	15.1	22.1	41.3	17.4	153.3	6.1
Queue Length 50th (ft)	59	385	47	56	~558	0
Queue Length 95th (ft)	m92	m451	m45	m69	#767	16
Internal Link Dist (ft)		522		175	200	
Turn Bay Length (ft)			70			90
Base Capacity (vph)	925	1986	190	636	437	445
Starvation Cap Reductn	0	0	0	329	0	0
Spillback Cap Reductn	287	0	0	0	46	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.65	0.66	0.49	1.34	0.22

Intersection Summary

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

16: US 290 WBFR & Victory Drive
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	141	1083	129	71	118	0	0	465	73
Future Volume (vph)	0	0	0	141	1083	129	71	118	0	0	465	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.5	5.5		5.5	4.5			4.5	4.5
Lane Util. Factor				1.00	0.95		1.00	1.00			1.00	1.00
Frbp, ped/bikes				1.00	1.00		1.00	1.00			1.00	0.98
Flpb, ped/bikes				1.00	1.00		1.00	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1612	3445		1805	1827			1792	1476
Flt Permitted				0.95	1.00		0.14	1.00			1.00	1.00
Satd. Flow (perm)				1612	3445		268	1827			1792	1476
Peak-hour factor, PHF	0.92	0.92	0.92	0.97	0.95	0.86	0.57	0.79	0.92	0.92	0.89	0.75
Adj. Flow (vph)	0	0	0	145	1140	150	125	149	0	0	522	97
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	0	0	0	73
Lane Group Flow (vph)	0	0	0	145	1282	0	125	149	0	0	522	24
Confl. Peds. (#/hr)						1	6					6
Confl. Bikes (#/hr)												3
Heavy Vehicles (%)	2%	2%	2%	12%	2%	8%	0%	4%	2%	2%	6%	7%
Turn Type				Split	NA		pm+pt	NA			NA	Perm
Protected Phases				7 8	7 8		2	1 2 6			1 6	
Permitted Phases							1 2 6					1 6
Actuated Green, G (s)				77.0	77.0		42.0	47.5			32.9	32.9
Effective Green, g (s)				77.0	77.0		37.5	42.0			32.9	32.9
Actuated g/C Ratio				0.57	0.57		0.28	0.31			0.24	0.24
Clearance Time (s)							5.5					
Vehicle Extension (s)							1.5					
Lane Grp Cap (vph)				919	1964		178	568			436	359
v/s Ratio Prot				0.09	c0.37		c0.05	0.08			c0.29	
v/s Ratio Perm							0.15					0.02
v/c Ratio				0.16	0.65		0.70	0.26			1.20	0.07
Uniform Delay, d1				13.7	19.9		40.2	34.9			51.0	39.2
Progression Factor				1.07	1.05		0.74	0.49			1.00	1.00
Incremental Delay, d2				0.0	0.6		8.9	0.1			109.1	0.0
Delay (s)				14.6	21.4		38.9	17.1			160.2	39.3
Level of Service				B	C		D	B			F	D
Approach Delay (s)		0.0			20.7			27.0			141.2	
Approach LOS		A			C			C			F	
Intersection Summary												
HCM 2000 Control Delay			53.5	HCM 2000 Level of Service				D				
HCM 2000 Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			135.0	Sum of lost time (s)				26.0				
Intersection Capacity Utilization			112.7%	ICU Level of Service				H				
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	2226	155	129	521	155
v/c Ratio	1.10	0.23	0.23	0.88	0.17
Control Delay	94.0	32.1	15.8	26.6	3.6
Queue Delay	0.0	0.0	0.0	3.0	1.8
Total Delay	94.0	32.1	15.8	29.6	5.5
Queue Length 50th (ft)	~820	96	35	240	14
Queue Length 95th (ft)	m#782	133	72	m168	m14
Internal Link Dist (ft)	53	253			175
Turn Bay Length (ft)			125	70	
Base Capacity (vph)	2031	661	556	592	912
Starvation Cap Reductn	0	0	0	27	615
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.10	0.23	0.23	0.92	0.52

Intersection Summary

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

17: Pack Saddle Pass & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↔↕↔						↑	↗	↘	↑		
Traffic Volume (vph)	65	1920	81	0	0	0	0	124	106	453	138	0	
Future Volume (vph)	65	1920	81	0	0	0	0	124	106	453	138	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.0						4.5	4.5	5.5	4.5		
Lane Util. Factor		0.91						1.00	1.00	1.00	1.00		
Frbp, ped/bikes		1.00						1.00	1.00	1.00	1.00		
Flpb, ped/bikes		1.00						1.00	1.00	1.00	1.00		
Frt		0.99						1.00	0.85	1.00	1.00		
Flt Protected		1.00						1.00	1.00	0.95	1.00		
Satd. Flow (prot)		5072						1900	1468	1719	1759		
Flt Permitted		1.00						1.00	1.00	0.59	1.00		
Satd. Flow (perm)		5072						1900	1468	1074	1759		
Peak-hour factor, PHF	0.81	0.94	0.79	0.92	0.92	0.92	0.92	0.80	0.82	0.87	0.89	0.92	
Adj. Flow (vph)	80	2043	103	0	0	0	0	155	129	521	155	0	
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	48	0	0	0	
Lane Group Flow (vph)	0	2222	0	0	0	0	0	155	81	521	155	0	
Confl. Bikes (#/hr)			3						1				
Heavy Vehicles (%)	10%	1%	0%	2%	2%	2%	2%	0%	10%	5%	8%	2%	
Turn Type	Split	NA						NA	Prot	D.P+P	NA		
Protected Phases	8	8						1 2 6	1 2 6	7	1 2 6 7		
Permitted Phases										1 2 6			
Actuated Green, G (s)		54.0						47.5	47.5	65.0	69.5		
Effective Green, g (s)		54.0						42.0	42.0	60.5	64.0		
Actuated g/C Ratio		0.40						0.31	0.31	0.45	0.47		
Clearance Time (s)		6.0								5.5			
Vehicle Extension (s)		1.5								1.5			
Lane Grp Cap (vph)		2028						591	456	564	833		
v/s Ratio Prot		c0.44						0.08	0.06	c0.12	0.09		
v/s Ratio Perm										c0.29			
v/c Ratio		1.10						0.26	0.18	0.92	0.19		
Uniform Delay, d1		40.5						34.9	33.9	35.8	20.5		
Progression Factor		1.19						1.00	1.00	0.61	0.20		
Incremental Delay, d2		49.6						0.1	0.1	8.3	0.0		
Delay (s)		97.5						35.0	34.0	30.0	4.2		
Level of Service		F						C	C	C	A		
Approach Delay (s)		97.5		0.0				34.5			24.1		
Approach LOS		F		A				C			C		
Intersection Summary													
HCM 2000 Control Delay			76.3									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			1.05										
Actuated Cycle Length (s)			135.0									Sum of lost time (s)	26.0
Intersection Capacity Utilization			112.7%									ICU Level of Service	H
Analysis Period (min)			15										

c Critical Lane Group



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	554	1153	587	400	696	1354
v/c Ratio	1.28	1.28	0.93	0.63	0.30	1.00
Control Delay	186.3	180.0	49.8	14.2	5.3	77.3
Queue Delay	0.2	0.1	0.0	29.5	3.2	0.0
Total Delay	186.4	180.0	49.8	43.7	8.5	77.3
Queue Length 50th (ft)	~751	~784	334	75	52	481
Queue Length 95th (ft)	#1009	#930	#576	m74	m52	#594
Internal Link Dist (ft)		53			174	314
Turn Bay Length (ft)						
Base Capacity (vph)	433	898	633	637	2358	1357
Starvation Cap Reductn	0	0	0	246	1529	0
Spillback Cap Reductn	7	15	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.30	1.31	0.93	1.02	0.84	1.00

Intersection Summary

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

18: US 290 WBFR & Menchaca Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	868	737	569	340	633	0	0	1088	171
Future Volume (vph)	0	0	0	868	737	569	340	633	0	0	1088	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0	6.0	6.0	6.0	5.0			5.0	
Lane Util. Factor				0.91	0.91	1.00	1.00	0.95			0.91	
Frt				1.00	1.00	0.85	1.00	1.00			0.98	
Flt Protected				0.95	0.98	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1626	3370	1615	1805	3574			5024	
Flt Permitted				0.95	0.98	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1626	3370	1615	1805	3574			5024	
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.97	0.85	0.91	0.92	0.92	0.95	0.82
Adj. Flow (vph)	0	0	0	923	784	587	400	696	0	0	1145	209
RTOR Reduction (vph)	0	0	0	0	0	201	0	0	0	0	18	0
Lane Group Flow (vph)	0	0	0	554	1153	386	400	696	0	0	1336	0
Heavy Vehicles (%)	2%	2%	2%	1%	1%	0%	0%	1%	2%	2%	1%	0%
Turn Type				Perm	NA	Perm	Prot	NA			NA	
Protected Phases					8 9		4 13	1 4 13				1
Permitted Phases				8 9		8 9						
Actuated Green, G (s)				41.0	41.0	41.0	53.0	98.0			40.0	
Effective Green, g (s)				41.0	41.0	41.0	48.0	98.0			40.0	
Actuated g/C Ratio				0.27	0.27	0.27	0.32	0.65			0.27	
Clearance Time (s)											5.0	
Vehicle Extension (s)											1.0	
Lane Grp Cap (vph)				444	921	441	577	2335			1339	
v/s Ratio Prot							c0.22	0.19			c0.27	
v/s Ratio Perm				0.34	0.34	0.24						
v/c Ratio				1.25	1.25	0.87	0.69	0.30			1.00	
Uniform Delay, d1				54.5	54.5	52.0	44.6	11.2			55.0	
Progression Factor				1.00	1.00	1.00	0.34	0.49			1.00	
Incremental Delay, d2				129.1	122.4	16.8	0.3	0.0			23.9	
Delay (s)				183.6	176.9	68.9	15.3	5.5			78.9	
Level of Service				F	F	E	B	A			E	
Approach Delay (s)		0.0			150.9			9.1			78.9	
Approach LOS		A			F			A			E	
Intersection Summary												
HCM 2000 Control Delay			97.6									F
HCM 2000 Volume to Capacity ratio			1.01									
Actuated Cycle Length (s)			150.0						27.0			
Intersection Capacity Utilization			120.4%									H
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	260	568	476	1252	598	1583
v/c Ratio	0.94	1.04	1.50	1.14	0.64	0.57
Control Delay	103.2	108.6	275.3	121.7	5.5	0.6
Queue Delay	0.0	0.0	0.0	0.0	35.8	29.2
Total Delay	103.2	108.6	275.3	121.7	41.4	29.7
Queue Length 50th (ft)	255	~313	~571	~496	67	10
Queue Length 95th (ft)	#399	#437	#799	#594	m57	m9
Internal Link Dist (ft)		62		300		174
Turn Bay Length (ft)						
Base Capacity (vph)	276	548	317	1100	932	2763
Starvation Cap Reductn	0	0	0	0	365	1259
Spillback Cap Reductn	0	0	0	11	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.94	1.04	1.50	1.15	1.05	1.05

Intersection Summary

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

19: Menchaca Road & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↘	↑↑	↗					↑↑↑		↘	↑↑		
Traffic Volume (vph)	224	545	438	0	0	0	0	735	397	508	1488	0	
Future Volume (vph)	224	545	438	0	0	0	0	735	397	508	1488	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.0	6.0	6.0					5.0		5.0	5.0		
Lane Util. Factor	1.00	0.95	1.00					0.91		1.00	0.95		
Frpb, ped/bikes	1.00	1.00	0.99					1.00		1.00	1.00		
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00		
Frt	1.00	1.00	0.85					0.94		1.00	1.00		
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00		
Satd. Flow (prot)	1805	3574	1593					4828		1770	3574		
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00		
Satd. Flow (perm)	1805	3574	1593					4828		1770	3574		
Peak-hour factor, PHF	0.86	0.96	0.92	0.92	0.92	0.92	0.92	0.93	0.86	0.85	0.94	0.92	
Adj. Flow (vph)	260	568	476	0	0	0	0	790	462	598	1583	0	
RTOR Reduction (vph)	0	0	74	0	0	0	0	70	0	0	0	0	
Lane Group Flow (vph)	260	568	402	0	0	0	0	1182	0	598	1583	0	
Confl. Bikes (#/hr)			1						1				
Heavy Vehicles (%)	0%	1%	0%	2%	2%	2%	2%	1%	1%	2%	1%	2%	
Turn Type	Perm	NA	Perm					NA		Prot	NA		
Protected Phases		4 8						13		19	19 13		
Permitted Phases	4 8		4 8										
Actuated Green, G (s)	23.0	23.0	23.0					32.0		79.0	116.0		
Effective Green, g (s)	23.0	23.0	23.0					32.0		79.0	116.0		
Actuated g/C Ratio	0.15	0.15	0.15					0.21		0.53	0.77		
Clearance Time (s)								5.0					
Vehicle Extension (s)								1.0					
Lane Grp Cap (vph)	276	548	244					1029		932	2763		
v/s Ratio Prot		0.16						c0.24		c0.34	0.44		
v/s Ratio Perm	0.14		c0.25										
v/c Ratio	0.94	1.04	1.65					1.15		0.64	0.57		
Uniform Delay, d1	62.8	63.5	63.5					59.0		25.4	6.9		
Progression Factor	1.00	1.00	1.00					1.00		0.20	0.07		
Incremental Delay, d2	38.3	48.2	309.7					78.4		0.1	0.0		
Delay (s)	101.1	111.7	373.2					137.4		5.2	0.5		
Level of Service	F	F	F					F		A	A		
Approach Delay (s)		205.1			0.0			137.4			1.8		
Approach LOS		F			A			F			A		
Intersection Summary													
HCM 2000 Control Delay			93.6									HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.02										
Actuated Cycle Length (s)			150.0									Sum of lost time (s)	27.0
Intersection Capacity Utilization			120.4%									ICU Level of Service	H
Analysis Period (min)			15										

c Critical Lane Group

Intersection												
Int Delay, s/veh	17.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	55	103	180	16	98	5	166	16	41	4	24	32
Future Vol, veh/h	55	103	180	16	98	5	166	16	41	4	24	32
Conflicting Peds, #/hr	14	0	9	9	0	14	6	0	11	11	0	6
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	87	87	50	76	50	80	75	60	60	56	75
Heavy Vehicles, %	0	0	7	0	0	0	5	0	0	0	0	0
Mvmt Flow	81	118	207	32	129	10	208	21	68	7	43	43

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	153	0	0	334	0	0	640	610	242	651	708	154
Stage 1	-	-	-	-	-	-	393	393	-	212	212	-
Stage 2	-	-	-	-	-	-	247	217	-	439	496	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.15	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.545	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1440	-	-	1237	-	-	384	412	802	384	362	897
Stage 1	-	-	-	-	-	-	626	609	-	795	731	-
Stage 2	-	-	-	-	-	-	750	727	-	601	549	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1421	-	-	1226	-	-	300	363	787	303	319	880
Mov Cap-2 Maneuver	-	-	-	-	-	-	300	363	-	303	319	-
Stage 1	-	-	-	-	-	-	576	560	-	728	701	-
Stage 2	-	-	-	-	-	-	648	697	-	485	505	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.5			1.5			50.3			15		
HCM LOS							F			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	355	1421	-	-	1226	-	-	450
HCM Lane V/C Ratio	0.837	0.057	-	-	0.026	-	-	0.205
HCM Control Delay (s)	50.3	7.7	0	-	8	0	-	15
HCM Lane LOS	F	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	7.5	0.2	-	-	0.1	-	-	0.8

21: S Lamar Blvd & Driveway A
 HCM Unsignalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 1-2026 Site+Forecasted PM



Movement	EBL	EBR	NBL	NBT	SBT	SBR					
Lane Configurations											
Traffic Volume (veh/h)	0	0	0	1944	1749	61					
Future Volume (Veh/h)	0	0	0	1944	1749	61					
Sign Control	Stop			Free		Free					
Grade	0%			0%		0%					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92					
Hourly flow rate (vph)	0	0	0	2113	1901	66					
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type				None	None						
Median storage (veh)											
Upstream signal (ft)				408	941						
pX, platoon unblocked											
vC, conflicting volume	2462	508	1967								
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	2462	508	1967								
tC, single (s)	6.8	6.9	4.1								
tC, 2 stage (s)											
tF (s)	3.5	3.3	2.2								
p0 queue free %	100	100	100								
cM capacity (veh/h)	25	510	292								
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4		
Volume Total	0	528	528	528	528	543	543	543	338		
Volume Left	0	0	0	0	0	0	0	0	0		
Volume Right	0	0	0	0	0	0	0	0	66		
cSH	1700	1700	1700	1700	1700	1700	1700	1700	1700		
Volume to Capacity	0.00	0.31	0.31	0.31	0.31	0.32	0.32	0.32	0.20		
Queue Length 95th (ft)	0	0	0	0	0	0	0	0	0		
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Lane LOS	A										
Approach Delay (s)	0.0	0.0					0.0				
Approach LOS	A										
Intersection Summary											
Average Delay	0.0										
Intersection Capacity Utilization	31.5%			ICU Level of Service				A			
Analysis Period (min)	15										

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑↑	
Traffic Vol, veh/h	0	97	0	577	1479	12
Future Vol, veh/h	0	97	0	577	1479	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	105	0	627	1608	13

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	811	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-
Pot Cap-1 Maneuver	0	277	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	277	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	25.8	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	277	-	-
HCM Lane V/C Ratio	-	0.381	-	-
HCM Control Delay (s)	-	25.8	-	-
HCM Lane LOS	-	D	-	-
HCM 95th %tile Q(veh)	-	1.7	-	-

Intersection						
Int Delay, s/veh	1.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑ ↑↑↑				
Traffic Vol, veh/h	0	84	1190	67	0	0
Future Vol, veh/h	0	84	1190	67	0	0
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	-	-	-
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	91	1293	73	0	0

Major/Minor	Minor1	Major1	
Conflicting Flow All	-	683	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.14	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.92	-
Pot Cap-1 Maneuver	0	336	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	-	336	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB
HCM Control Delay, s	19.7	0
HCM LOS	C	

Minor Lane/Major Mvmt	NBT	NBRWBLn1
Capacity (veh/h)	-	336
HCM Lane V/C Ratio	-	0.272
HCM Control Delay (s)	-	19.7
HCM Lane LOS	-	C
HCM 95th %tile Q(veh)	-	1.1


















Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	481	638	2537	400	401	1170
v/c Ratio	0.55	1.09	1.29	0.43	2.16	0.50
Control Delay	45.9	103.1	156.2	3.4	560.2	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.9	103.1	156.2	3.4	560.2	12.2
Queue Length 50th (ft)	188	~627	~1493	25	~515	250
Queue Length 95th (ft)	245	#819	#1498	m11	#607	300
Internal Link Dist (ft)	497		121			322
Turn Bay Length (ft)		125			125	
Base Capacity (vph)	881	587	1966	935	186	2336
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.55	1.09	1.29	0.43	2.16	0.50

Intersection Summary

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

1: S Lamar Blvd & W Oltorf Street
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted AM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		 			 
Traffic Volume (vph)	433	555	2182	320	317	1135
Future Volume (vph)	433	555	2182	320	317	1135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1583	3539	1525	1770	3505
Flt Permitted	0.95	1.00	1.00	1.00	0.05	1.00
Satd. Flow (perm)	3400	1583	3539	1525	93	3505
Peak-hour factor, PHF	0.90	0.87	0.86	0.80	0.79	0.97
Adj. Flow (vph)	481	638	2537	400	401	1170
RTOR Reduction (vph)	0	1	0	88	0	0
Lane Group Flow (vph)	481	637	2537	312	401	1170
Confl. Peds. (#/hr)		4		2	2	
Confl. Bikes (#/hr)		1		5		
Heavy Vehicles (%)	3%	2%	2%	4%	2%	3%
Turn Type	Prot	pt+ov	NA	Perm	pm+pt	NA
Protected Phases	4	1 4	2		1	6
Permitted Phases		4		2	6	
Actuated Green, G (s)	35.0	50.0	75.0	75.0	90.0	90.0
Effective Green, g (s)	35.0	50.0	75.0	75.0	90.0	90.0
Actuated g/C Ratio	0.26	0.37	0.56	0.56	0.67	0.67
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	1.0		1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	881	586	1966	847	186	2336
v/s Ratio Prot	0.14	c0.40	0.72		c0.16	0.33
v/s Ratio Perm				0.20	c1.27	
v/c Ratio	0.55	1.09	1.29	0.37	2.16	0.50
Uniform Delay, d1	43.1	42.5	30.0	16.8	47.1	11.3
Progression Factor	1.00	1.00	0.71	0.32	1.00	1.00
Incremental Delay, d2	2.4	62.9	133.0	0.7	537.6	0.8
Delay (s)	45.6	105.4	154.2	6.0	584.7	12.0
Level of Service	D	F	F	A	F	B
Approach Delay (s)	79.7		134.0			158.2
Approach LOS	E		F			F
Intersection Summary						
HCM 2000 Control Delay			129.9		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.91			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			103.4%		ICU Level of Service	G
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	128	279	136	188	2373	99	49	1880
v/c Ratio	0.70	0.70	0.76	0.57	0.94	0.10	0.92	1.02
Control Delay	66.6	40.6	69.2	34.8	17.6	2.9	137.3	59.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.6	40.6	69.2	34.8	17.6	2.9	137.3	59.6
Queue Length 50th (ft)	98	146	86	107	736	7	39	~833
Queue Length 95th (ft)	123	155	143	m113	m733	m9	#72	815
Internal Link Dist (ft)		215	74		201			588
Turn Bay Length (ft)	75			50		125	50	
Base Capacity (vph)	184	551	349	329	2535	1041	53	1849
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.51	0.39	0.57	0.94	0.10	0.92	1.02

Intersection Summary

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

2: S Lamar Blvd & Bluebonnet Lane
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗			↖		↖	↕	↗	↖	↕	↗
Traffic Volume (vph)	95	36	187	0	43	61	171	1946	80	30	1535	4
Future Volume (vph)	95	36	187	0	43	61	171	1946	80	30	1535	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	0.99			0.99		1.00	1.00	0.96	1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.88			0.91		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1769	1616			1718		1787	3505	1412	1703	3469	
Flt Permitted	0.28	1.00			1.00		0.05	1.00	1.00	0.06	1.00	
Satd. Flow (perm)	519	1616			1718		98	3505	1412	100	3469	
Peak-hour factor, PHF	0.74	0.71	0.82	0.87	0.86	0.71	0.91	0.82	0.81	0.61	0.82	0.50
Adj. Flow (vph)	128	51	228	0	50	86	188	2373	99	49	1872	8
RTOR Reduction (vph)	0	84	0	0	34	0	0	0	20	0	0	0
Lane Group Flow (vph)	128	195	0	0	102	0	188	2373	79	49	1880	0
Confl. Peds. (#/hr)	1		4	4			1	7		6	6	7
Confl. Bikes (#/hr)							1					1
Heavy Vehicles (%)	2%	0%	2%	3%	0%	0%	1%	3%	10%	6%	4%	0%
Turn Type	pm+pt	NA			NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4						2		2	6		
Actuated Green, G (s)	26.3	26.3			11.3		97.7	97.7	97.7	72.0	72.0	
Effective Green, g (s)	26.3	26.3			11.3		97.7	97.7	97.7	72.0	72.0	
Actuated g/C Ratio	0.19	0.19			0.08		0.72	0.72	0.72	0.53	0.53	
Clearance Time (s)	6.0	6.0			6.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0			2.0		1.0	1.0	1.0	1.0	1.0	
Lane Grp Cap (vph)	184	314			143		329	2536	1021	53	1850	
v/s Ratio Prot	0.05	c0.12			0.06		0.09	c0.68			c0.54	
v/s Ratio Perm	c0.09						0.33		0.06	0.49		
v/c Ratio	0.70	0.62			0.71		0.57	0.94	0.08	0.92	1.02	
Uniform Delay, d1	47.6	49.8			60.3		39.1	16.0	5.5	29.0	31.5	
Progression Factor	1.00	1.00			1.00		1.10	0.87	1.22	1.15	1.14	
Incremental Delay, d2	8.9	2.7			13.1		1.7	2.2	0.0	97.9	24.1	
Delay (s)	56.5	52.5			73.4		44.9	16.2	6.7	131.3	59.9	
Level of Service	E	D			E		D	B	A	F	E	
Approach Delay (s)		53.8			73.4			17.8			61.7	
Approach LOS		D			E			B			E	

Intersection Summary

HCM 2000 Control Delay	38.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	100.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	975	1947	8	528	1509
v/c Ratio	1.18	0.90	0.01	1.02	0.65
Control Delay	136.3	15.8	1.2	67.6	16.4
Queue Delay	0.0	0.6	0.0	0.0	0.2
Total Delay	136.3	16.4	1.2	67.6	16.5
Queue Length 50th (ft)	~575	665	0	~505	325
Queue Length 95th (ft)	#722	360	m0	m#503	m327
Internal Link Dist (ft)		324			498
Turn Bay Length (ft)				100	
Base Capacity (vph)	823	2159	990	516	2314
Starvation Cap Reductn	0	46	0	0	0
Spillback Cap Reductn	0	0	0	0	163
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.18	0.92	0.01	1.02	0.70

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

3: S Lamar Blvd & Menchaca Road
 HCM Signalized Intersection Capacity Analysis



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↔↔	↕↕	↗	↘	↕↕
Traffic Volume (vph)	0	926	1460	5	449	1343
Future Volume (vph)	0	926	1460	5	449	1343
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0
Lane Util. Factor		0.88	0.95	1.00	1.00	0.95
Frbp, ped/bikes		1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		2787	3471	1589	1787	3471
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		2787	3471	1589	1787	3471
Peak-hour factor, PHF	0.92	0.95	0.75	0.60	0.85	0.89
Adj. Flow (vph)	0	975	1947	8	528	1509
RTOR Reduction (vph)	0	18	0	2	0	0
Lane Group Flow (vph)	0	957	1947	6	528	1509
Confl. Peds. (#/hr)		1		4	4	
Heavy Vehicles (%)	2%	2%	4%	0%	1%	4%
Turn Type		pt+ov	NA	Perm	Prot	NA
Protected Phases		1 4	2 3		1 4	1 2
Permitted Phases				2 3		
Actuated Green, G (s)		39.0	84.0	84.0	39.0	90.0
Effective Green, g (s)		39.0	84.0	84.0	39.0	90.0
Actuated g/C Ratio		0.29	0.62	0.62	0.29	0.67
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		805	2159	988	516	2314
v/s Ratio Prot		c0.34	c0.56		0.30	0.43
v/s Ratio Perm				0.00		
v/c Ratio		1.19	0.90	0.01	1.02	0.65
Uniform Delay, d1		48.0	22.0	9.7	48.0	13.3
Progression Factor		1.00	0.51	0.19	0.83	1.18
Incremental Delay, d2		97.0	3.4	0.0	27.9	0.4
Delay (s)		145.0	14.6	1.8	67.5	16.1
Level of Service		F	B	A	E	B
Approach Delay (s)	145.0		14.5			29.4
Approach LOS	F		B			C
Intersection Summary						
HCM 2000 Control Delay			46.2		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			1.10			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	24.0
Intersection Capacity Utilization			91.9%		ICU Level of Service	F
Analysis Period (min)			15			
c Critical Lane Group						

























Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	202	442	135	192	196	1797	61	57	1506
v/c Ratio	0.96	0.61	1.32	0.29	1.87	0.78	0.06	2.19	0.70
Control Delay	107.4	37.0	240.9	48.3	433.7	20.5	2.5	646.6	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0
Total Delay	107.4	37.0	240.9	48.3	433.7	21.3	2.5	646.6	4.5
Queue Length 50th (ft)	178	124	~153	76	~264	556	1	~79	325
Queue Length 95th (ft)	179	171	#187	100	m#290	466	m2	#99	101
Internal Link Dist (ft)		257		238		436			324
Turn Bay Length (ft)	90		100		125		160	100	
Base Capacity (vph)	210	719	102	654	105	2314	1045	26	2143
Starvation Cap Reductn	0	0	0	0	0	0	0	0	19
Spillback Cap Reductn	0	0	0	0	0	235	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.61	1.32	0.29	1.87	0.86	0.06	2.19	0.71

Intersection Summary

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

4: S Lamar Blvd & Barton Skyway/Lightsey Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	148	238	89	148	7	167	1330	57	32	1231	75
Future Volume (vph)	127	148	238	89	148	7	167	1330	57	32	1231	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.91		1.00	0.99		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1748	3227		1800	3522		1787	3471	1531	1805	3440	
Flt Permitted	0.62	1.00		0.29	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1136	3227		551	3522		1787	3471	1531	1805	3440	
Peak-hour factor, PHF	0.63	0.86	0.88	0.66	0.80	0.95	0.85	0.74	0.93	0.56	0.88	0.70
Adj. Flow (vph)	202	172	270	135	185	7	196	1797	61	57	1399	107
RTOR Reduction (vph)	0	122	0	0	2	0	0	0	20	0	4	0
Lane Group Flow (vph)	202	320	0	135	190	0	196	1797	41	57	1502	0
Confl. Peds. (#/hr)	2		4	4		2	2		4	4		2
Confl. Bikes (#/hr)			1						1			2
Heavy Vehicles (%)	3%	1%	0%	0%	1%	25%	1%	4%	4%	0%	4%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		8			8		5	5 6		7	6 7	
Permitted Phases	8			8					5 6			
Actuated Green, G (s)	25.0	25.0		25.0	25.0		8.0	90.0	90.0	2.0	84.0	
Effective Green, g (s)	25.0	25.0		25.0	25.0		8.0	90.0	90.0	2.0	84.0	
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.06	0.67	0.67	0.01	0.62	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0			6.0		
Vehicle Extension (s)	2.0	2.0		2.0	2.0		1.0			1.0		
Lane Grp Cap (vph)	210	597		102	652		105	2314	1020	26	2140	
v/s Ratio Prot		0.10			0.05		c0.11	c0.52		c0.03	0.44	
v/s Ratio Perm	0.18			c0.24					0.03			
v/c Ratio	0.96	0.54		1.32	0.29		1.87	0.78	0.04	2.19	0.70	
Uniform Delay, d1	54.5	49.7		55.0	47.4		63.5	15.6	7.7	66.5	17.1	
Progression Factor	1.00	1.00		1.00	1.00		0.88	1.23	1.96	0.70	0.17	
Incremental Delay, d2	52.9	3.4		198.5	1.1		402.8	1.0	0.0	621.7	0.7	
Delay (s)	107.5	53.2		253.5	48.5		458.6	20.0	15.2	668.0	3.6	
Level of Service	F	D		F	D		F	C	B	F	A	
Approach Delay (s)		70.2			133.2			61.8			27.8	
Approach LOS		E			F			E			C	
Intersection Summary												
HCM 2000 Control Delay			56.5				HCM 2000 Level of Service				E	
HCM 2000 Volume to Capacity ratio			1.02									
Actuated Cycle Length (s)			135.0				Sum of lost time (s)				24.0	
Intersection Capacity Utilization			98.2%				ICU Level of Service				F	
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	114	203	272	29	2382	259	1493
v/c Ratio	0.75	0.81	0.83	0.16	0.95	4.89	0.60
Control Delay	72.4	75.9	69.2	8.6	27.0	1787.5	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.4	75.9	69.2	8.6	27.0	1787.5	9.8
Queue Length 50th (ft)	83	171	216	7	874	~413	342
Queue Length 95th (ft)	96	175	191	15	517	m#476	m402
Internal Link Dist (ft)	270		212		208		469
Turn Bay Length (ft)		120		95		125	
Base Capacity (vph)	153	250	328	178	2505	53	2508
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.81	0.83	0.16	0.95	4.89	0.60

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.




















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

Queue shown is maximum after two cycles.

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

5: S Lamar Blvd & Private Driveway/Panther Trail
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	9	23	130	4	204	20	1503	167	197	1362	21
Future Volume (veh/h)	36	9	23	130	4	204	20	1503	167	197	1362	21
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1854	1900	1827	1812	1900	1900	1865	1900	1810	1843	1900
Adj Flow Rate, veh/h	64	15	35	203	7	265	29	2147	235	259	1465	28
Adj No. of Lanes	0	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.56	0.62	0.65	0.64	0.60	0.77	0.69	0.70	0.71	0.76	0.93	0.75
Percent Heavy Veh, %	0	0	8	4	0	5	0	2	1	5	3	8
Cap, veh/h	68	20	21	266	8	310	238	2319	249	71	2524	48
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.72	0.72	0.72	0.72	0.72	0.72
Sat Flow, veh/h	126	97	99	1323	39	1493	358	3227	347	143	3513	67
Grp Volume(v), veh/h	114	0	0	203	0	272	29	1160	1222	259	729	764
Grp Sat Flow(s),veh/h/ln	323	0	0	1323	0	1533	358	1771	1802	143	1751	1829
Q Serve(g_s), s	4.9	0.0	0.0	0.0	0.0	23.1	5.8	72.2	79.9	17.1	27.1	27.2
Cycle Q Clear(g_c), s	28.0	0.0	0.0	26.3	0.0	23.1	33.0	72.2	79.9	97.0	27.1	27.2
Prop In Lane	0.56		0.31	1.00		0.97	1.00		0.19	1.00		0.04
Lane Grp Cap(c), veh/h	109	0	0	266	0	318	238	1273	1295	71	1258	1314
V/C Ratio(X)	1.05	0.00	0.00	0.76	0.00	0.86	0.12	0.91	0.94	3.63	0.58	0.58
Avail Cap(c_a), veh/h	109	0	0	266	0	318	238	1273	1295	71	1258	1314
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.4	0.0	0.0	52.8	0.0	51.6	17.2	15.5	16.6	65.3	9.2	9.2
Incr Delay (d2), s/veh	100.4	0.0	0.0	18.5	0.0	24.4	1.0	11.4	14.7	1216.5	2.0	1.9
Initial Q Delay(d3),s/veh	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	0.0	0.0	8.9	0.0	11.9	0.6	38.8	44.3	26.8	13.6	14.3
LnGrp Delay(d),s/veh	162.4	0.0	0.0	71.3	0.0	75.9	18.2	26.9	31.3	1281.9	11.1	11.1
LnGrp LOS	F			E		E	B	C	C	F	B	B
Approach Vol, veh/h		114			475			2411			1752	
Approach Delay, s/veh		162.4			74.0			29.0			198.9	
Approach LOS		F			E			C			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		102.0		33.0		102.0		33.0				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		97.0		28.0		97.0		28.0				
Max Q Clear Time (g_c+I1), s		81.9		30.0		99.0		28.3				
Green Ext Time (p_c), s		7.2		0.0		0.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				99.4								
HCM 2010 LOS				F								

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Private Driveway

Queues

Phase 2-2031 Forecasted AM



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL2	SBT	NWL	NWR
Lane Group Flow (vph)	364	242	116	147	1290	137	1396	437	1582
v/c Ratio	1.38	0.57	0.64	0.44	1.07	0.94	0.48	2.15	1.48
Control Delay	229.4	13.7	56.1	18.5	87.8	118.6	23.2	562.1	249.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	229.4	13.7	56.1	18.5	87.8	118.6	23.2	562.1	249.5
Queue Length 50th (ft)	~393	12	78	23	~632	117	220	~587	~978
Queue Length 95th (ft)	#225	6	97	30	385	#150	253	#612	#820
Internal Link Dist (ft)		165		155	240		599	179	
Turn Bay Length (ft)						160			
Base Capacity (vph)	264	427	183	335	1207	146	2906	203	1070
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.38	0.57	0.63	0.44	1.07	0.94	0.48	2.15	1.48

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

























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

Queue shown is maximum after two cycles.

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Private Driveway

HCM Signalized Intersection Capacity Analysis

Phase 2-2031 Forecasted AM

												
Movement	EBL	EBT	EBR2	WBL	WBT	WBR	NBT	SBL2	SBT	SBR	NWL	NWR
Lane Configurations									  			 
Traffic Volume (vph)	193	10	174	79	19	67	774	92	1069	129	319	1090
Future Volume (vph)	193	10	174	79	19	67	774	92	1069	129	319	1090
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		5.5	7.0	5.5		7.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		0.95	1.00	0.86		1.00	0.88
Frbp, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.86		1.00	0.88		1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1804	1634		1770	1656		3610	1736	6091		1703	2790
Flt Permitted	0.54	1.00		0.26	1.00		1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	1022	1634		478	1656		3610	1736	6091		1703	2790
Peak-hour factor, PHF	0.53	0.62	0.77	0.68	0.62	0.58	0.60	0.67	0.90	0.62	0.73	0.74
Adj. Flow (vph)	364	16	226	116	31	116	1290	137	1188	208	437	1473
RTOR Reduction (vph)	0	194	0	0	99	0	0	0	24	0	0	137
Lane Group Flow (vph)	364	48	0	116	48	0	1290	137	1372	0	437	1445
Confl. Peds. (#/hr)	1						1	1		3	3	
Confl. Bikes (#/hr)							1			2		
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	4%	2%	20%	6%	2%
Turn Type	pm+pt	NA		pm+pt	NA		NA	Prot	NA		Prot	Prot
Protected Phases	7	4		3	8		2!	1	6		5	2!
Permitted Phases	4			8								
Actuated Green, G (s)	27.1	18.6		26.9	18.5		43.5	11.0	61.5		15.5	43.5
Effective Green, g (s)	27.1	18.6		26.9	18.5		43.5	11.0	61.5		15.5	43.5
Actuated g/C Ratio	0.21	0.14		0.21	0.14		0.33	0.08	0.47		0.12	0.33
Clearance Time (s)	6.5	6.5		6.5	6.5		5.5	7.0	5.5		7.5	5.5
Vehicle Extension (s)	1.0	3.0		3.0	3.0		3.0	2.0	2.0		3.0	3.0
Lane Grp Cap (vph)	264	233		182	235		1207	146	2881		203	933
v/s Ratio Prot	c0.09	0.03		0.04	0.03		0.36	c0.08	0.23		c0.26	c0.52
v/s Ratio Perm	c0.20			0.09								
v/c Ratio	1.38	0.21		0.64	0.20		1.07	0.94	0.48		2.15	1.55
Uniform Delay, d1	50.6	49.2		44.2	49.2		43.2	59.2	23.3		57.2	43.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	192.4	2.0		7.1	1.9		46.4	59.6	0.6		534.8	252.2
Delay (s)	243.0	51.2		51.4	51.2		89.7	118.8	23.9		592.0	295.5
Level of Service	F	D		D	D		F	F	C		F	F
Approach Delay (s)		166.4			51.3		89.7		32.3		359.7	
Approach LOS		F			D		F		C		F	

Intersection Summary		
HCM 2000 Control Delay	176.1	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	1.53	F
Actuated Cycle Length (s)	130.0	Sum of lost time (s)
Intersection Capacity Utilization	140.7%	33.0
Analysis Period (min)	15	ICU Level of Service
		H

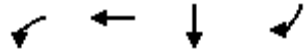
! Phase conflict between lane groups.
c Critical Lane Group

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Private Driveway
 HCM Signalized Intersection Capacity Analysis

Phase 2-2031 Forecasted AM



Movement	NWR2
Lane Configurations	
Traffic Volume (vph)	60
Future Volume (vph)	60
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frbp, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.55
Adj. Flow (vph)	109
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	1
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Lane Group	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	616	1973	815	356
v/c Ratio	0.59	0.91	0.69	0.23
Control Delay	3.4	15.8	54.2	0.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.4	15.8	54.2	0.3
Queue Length 50th (ft)	4	951	195	0
Queue Length 95th (ft)	m0	m587	225	0
Internal Link Dist (ft)		23	453	
Turn Bay Length (ft)				
Base Capacity (vph)	1043	2168	1187	1564
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.59	0.91	0.69	0.23

Intersection Summary

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

7: S Lamar Blvd & Capity of Texas Hwy
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations				↖	↗						↑↑↑	↗	
Traffic Volume (vph)	0	0	0	575	1771	0	0	0	0	0	709	313	
Future Volume (vph)	0	0	0	575	1771	0	0	0	0	0	709	313	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				6.0	6.0						6.0	4.0	
Lane Util. Factor				0.91	0.91						0.86	1.00	
Frbp, ped/bikes				1.00	1.00						1.00	0.99	
Flpb, ped/bikes				1.00	1.00						1.00	1.00	
Frt				1.00	1.00						1.00	0.85	
Flt Protected				0.95	1.00						1.00	1.00	
Satd. Flow (prot)				1595	3383						6166	1564	
Flt Permitted				0.95	1.00						1.00	1.00	
Satd. Flow (perm)				1595	3383						6166	1564	
Peak-hour factor, PHF	0.92	0.92	0.92	0.84	0.93	0.92	0.92	0.92	0.92	0.92	0.87	0.88	
Adj. Flow (vph)	0	0	0	685	1904	0	0	0	0	0	815	356	
RTOR Reduction (vph)	0	0	0	38	38	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	578	1935	0	0	0	0	0	815	356	
Confl. Peds. (#/hr)												1	
Heavy Vehicles (%)	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	6%	2%	
Turn Type				custom	NA						NA	Free	
Protected Phases				1 2 4 8	1 2 4 8						5 6 7		
Permitted Phases				3	3							Free	
Actuated Green, G (s)				86.0	86.0						33.0	135.0	
Effective Green, g (s)				86.0	86.0						33.0	135.0	
Actuated g/C Ratio				0.64	0.64						0.24	1.00	
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				1086	2305						1507	1564	
v/s Ratio Prot				0.33	0.53						0.13		
v/s Ratio Perm				0.03	0.04							0.23	
v/c Ratio				0.53	0.84						0.54	0.23	
Uniform Delay, d1				13.5	19.1						44.4	0.0	
Progression Factor				0.37	1.00						1.00	1.00	
Incremental Delay, d2				0.0	0.3						1.4	0.3	
Delay (s)				5.1	19.5						45.8	0.3	
Level of Service				A	B						D	A	
Approach Delay (s)		0.0			16.0			0.0			32.0		
Approach LOS		A			B			A			C		
Intersection Summary													
HCM 2000 Control Delay			21.0		HCM 2000 Level of Service						C		
HCM 2000 Volume to Capacity ratio			1.00										
Actuated Cycle Length (s)			135.0		Sum of lost time (s)					40.0			
Intersection Capacity Utilization			80.5%		ICU Level of Service					D			
Analysis Period (min)			15										
c Critical Lane Group													















Lane Group	WBT	NBL	NBT
Lane Group Flow (vph)	2034	366	1147
v/c Ratio	1.46	0.41	0.43
Control Delay	247.2	1.4	2.3
Queue Delay	0.2	0.5	0.2
Total Delay	247.3	1.9	2.5
Queue Length 50th (ft)	~886	8	51
Queue Length 95th (ft)	m#824	m8	m10
Internal Link Dist (ft)	133		295
Turn Bay Length (ft)			
Base Capacity (vph)	1393	898	2673
Starvation Cap Reductn	0	213	656
Spillback Cap Reductn	59	46	68
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.52	0.53	0.57

Intersection Summary

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

8: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↑	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1932	0	423	789	0	0	0	0
Future Volume (vph)	0	0	0	0	1932	0	423	789	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0		6.0	6.0				
Lane Util. Factor					0.91		0.86	0.86				
Frbp, ped/bikes					1.00		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					1.00		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					5085		1552	4792				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					5085		1552	4792				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.95	0.79	0.89	0.76	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	2034	0	475	1038	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	47	47	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2034	0	319	1100	0	0	0	0
Confl. Peds. (#/hr)						1						
Heavy Vehicles (%)	2%	2%	2%	2%	2%	6%	0%	2%	2%	2%	2%	2%
Turn Type					NA		custom	NA				
Protected Phases					1 7 8		2 3 4 5	2 3 4 5				
Permitted Phases							6	6				
Actuated Green, G (s)					40.0		77.0	77.0				
Effective Green, g (s)					38.0		75.0	75.0				
Actuated g/C Ratio					0.28		0.56	0.56				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)					1431		931	2875				
v/s Ratio Prot					c0.40		0.14	c0.16				
v/s Ratio Perm							0.06	0.07				
v/c Ratio					1.42		0.34	0.38				
Uniform Delay, d1					48.5		16.5	16.9				
Progression Factor					1.05		0.11	0.18				
Incremental Delay, d2					192.9		0.0	0.0				
Delay (s)					243.6		1.8	3.0				
Level of Service					F		A	A				
Approach Delay (s)		0.0			243.6			2.7			0.0	
Approach LOS		A			F			A			A	
Intersection Summary												
HCM 2000 Control Delay			140.9				HCM 2000 Level of Service				F	
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			135.0				Sum of lost time (s)				40.0	
Intersection Capacity Utilization			87.0%				ICU Level of Service				E	
Analysis Period (min)			15									

c Critical Lane Group



Lane Group	EBT	SBL	SBT
Lane Group Flow (vph)	1003	370	1165
v/c Ratio	1.04	0.39	0.38
Control Delay	93.6	2.7	2.6
Queue Delay	10.1	0.8	0.3
Total Delay	103.7	3.5	2.9
Queue Length 50th (ft)	~348	1	10
Queue Length 95th (ft)	#443	m0	11
Internal Link Dist (ft)	69		291
Turn Bay Length (ft)			
Base Capacity (vph)	960	943	3046
Starvation Cap Reductn	0	301	1082
Spillback Cap Reductn	24	27	43
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.07	0.58	0.59

Intersection Summary

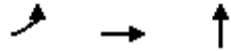
- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

9: S Lamar Blvd & Capity of Texas Hwy
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↑↑↑								↘	↑↑↑		
Traffic Volume (vph)	0	913	0	0	0	0	0	0	0	374	961	0	
Future Volume (vph)	0	913	0	0	0	0	0	0	0	374	961	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.0								6.0	6.0		
Lane Util. Factor		0.91								0.86	0.86		
Frbp, ped/bikes		1.00								1.00	1.00		
Flpb, ped/bikes		1.00								1.00	1.00		
Frt		1.00								1.00	1.00		
Flt Protected		1.00								0.95	1.00		
Satd. Flow (prot)		4988								1437	4779		
Flt Permitted		1.00								0.95	1.00		
Satd. Flow (perm)		4988								1437	4779		
Peak-hour factor, PHF	0.92	0.91	0.88	0.92	0.92	0.92	0.92	0.92	0.92	0.87	0.87	0.92	
Adj. Flow (vph)	0	1003	0	0	0	0	0	0	0	430	1105	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	38	38	0	
Lane Group Flow (vph)	0	1003	0	0	0	0	0	0	0	332	1127	0	
Confl. Bikes (#/hr)			1										
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	8%	2%	2%	
Turn Type		NA								custom	NA		
Protected Phases		4 5								1 2 6 8	1 2 6 8		
Permitted Phases										7	7		
Actuated Green, G (s)		26.0								86.0	86.0		
Effective Green, g (s)		26.0								86.0	86.0		
Actuated g/C Ratio		0.19								0.64	0.64		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)		960								979	3256		
v/s Ratio Prot		c0.20								0.21	c0.22		
v/s Ratio Perm										0.02	0.02		
v/c Ratio		1.04								0.34	0.35		
Uniform Delay, d1		54.5								11.3	11.4		
Progression Factor		1.00								0.29	0.31		
Incremental Delay, d2		41.4								0.1	0.0		
Delay (s)		95.9								3.4	3.5		
Level of Service		F								A	A		
Approach Delay (s)		95.9			0.0			0.0			3.5		
Approach LOS		F			A			A			A		
Intersection Summary													
HCM 2000 Control Delay			40.0		HCM 2000 Level of Service						D		
HCM 2000 Volume to Capacity ratio			0.62										
Actuated Cycle Length (s)			135.0		Sum of lost time (s)					40.0			
Intersection Capacity Utilization			73.3%		ICU Level of Service					D			
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBL	EBT	NBT
Lane Group Flow (vph)	496	1040	1461
v/c Ratio	0.50	0.53	0.96
Control Delay	3.6	4.7	63.7
Queue Delay	7.8	9.0	0.0
Total Delay	11.4	13.7	63.7
Queue Length 50th (ft)	21	28	359
Queue Length 95th (ft)	8	m35	#435
Internal Link Dist (ft)		38	673
Turn Bay Length (ft)			
Base Capacity (vph)	985	1950	1528
Starvation Cap Reductn	440	876	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.91	0.97	0.96

Intersection Summary



















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

Queue shown is maximum after two cycles.

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

10: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 						  				
Traffic Volume (vph)	382	892	0	0	0	0	0	1029	284	0	0	0
Future Volume (vph)	382	892	0	0	0	0	0	1029	284	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0						6.0				
Lane Util. Factor	0.91	0.91						0.86				
Frt	1.00	1.00						0.97				
Flt Protected	0.95	1.00						1.00				
Satd. Flow (prot)	1610	3258						6286				
Flt Permitted	0.95	1.00						1.00				
Satd. Flow (perm)	1610	3258						6286				
Peak-hour factor, PHF	0.64	0.95	0.92	0.92	0.92	0.92	0.92	0.91	0.86	0.92	0.92	0.92
Adj. Flow (vph)	597	939	0	0	0	0	0	1131	330	0	0	0
RTOR Reduction (vph)	43	43	0	0	0	0	0	36	0	0	0	0
Lane Group Flow (vph)	453	997	0	0	0	0	0	1425	0	0	0	0
Heavy Vehicles (%)	2%	6%	2%	2%	2%	2%	2%	0%	2%	2%	2%	2%
Turn Type	custom	NA						NA				
Protected Phases	4 5 6 8	4 5 6 8						1 2 3				
Permitted Phases	7	7										
Actuated Green, G (s)	80.0	80.0						39.0				
Effective Green, g (s)	80.0	80.0						39.0				
Actuated g/C Ratio	0.59	0.59						0.29				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	1025	2075						1815				
v/s Ratio Prot	0.26	c0.28						c0.23				
v/s Ratio Perm	0.02	0.02										
v/c Ratio	0.44	0.48						0.78				
Uniform Delay, d1	15.2	15.7						44.1				
Progression Factor	0.27	0.37						1.00				
Incremental Delay, d2	0.1	0.0						3.5				
Delay (s)	4.2	5.9						47.6				
Level of Service	A	A						D				
Approach Delay (s)		5.3			0.0			47.6			0.0	
Approach LOS		A			A			D			A	
Intersection Summary												
HCM 2000 Control Delay			26.0					HCM 2000 Level of Service		C		
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			135.0					Sum of lost time (s)		40.0		
Intersection Capacity Utilization			65.2%					ICU Level of Service		C		
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	463	968	165	204	304	30
v/c Ratio	1.42	1.43	0.29	0.69	0.19	0.02
Control Delay	231.5	227.7	1.2	24.6	2.1	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	231.5	227.7	1.2	24.6	2.1	10.4
Queue Length 50th (ft)	~296	~310	0	38	7	1
Queue Length 95th (ft)	#475	#390	0	m47	m7	6
Internal Link Dist (ft)		364			236	206
Turn Bay Length (ft)						
Base Capacity (vph)	327	677	578	294	1670	1438
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.42	1.43	0.29	0.69	0.18	0.02

Intersection Summary

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

11: West Gate Blvd & US 290 WBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations				↙	↕	↗	↙	↕			↕	↗	
Traffic Volume (vph)	0	0	0	604	662	91	375	88	0	0	13	11	
Future Volume (vph)	0	0	0	604	662	91	375	88	0	0	13	11	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				5.5	5.5	5.5	5.5	6.0			6.0		
Lane Util. Factor				0.91	0.91	1.00	0.91	0.91			0.91		
Frbp, ped/bikes				1.00	1.00	0.99	1.00	1.00			1.00		
Flpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00		
Frt				1.00	1.00	0.85	1.00	1.00			0.93		
Flt Protected				0.95	0.99	1.00	0.95	0.97			1.00		
Satd. Flow (prot)				1610	3332	1562	1595	3280			4422		
Flt Permitted				0.95	0.99	1.00	0.74	0.76			1.00		
Satd. Flow (perm)				1610	3332	1562	1235	2587			4422		
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.84	0.55	0.92	0.88	0.92	0.92	0.88	0.75	
Adj. Flow (vph)	0	0	0	643	788	165	408	100	0	0	15	15	
RTOR Reduction (vph)	0	0	0	0	0	133	0	0	0	0	10	0	
Lane Group Flow (vph)	0	0	0	463	968	32	204	304	0	0	20	0	
Confl. Peds. (#/hr)						1							
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	3%	0%	2%	2%	0%	17%	
Turn Type				Perm	NA	Perm	custom	NA			NA		
Protected Phases					4 5			1 2 6 7			1 2		
Permitted Phases				4 5		4 5	6 7						
Actuated Green, G (s)				12.7	12.7	12.7	15.5	40.8			19.8		
Effective Green, g (s)				12.7	12.7	12.7	15.5	29.8			19.8		
Actuated g/C Ratio				0.20	0.20	0.20	0.24	0.46			0.30		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				314	651	305	294	1186			1347		
v/s Ratio Prot											0.00		
v/s Ratio Perm				0.29	0.29	0.02	c0.17	c0.12					
v/c Ratio				1.47	1.49	0.11	0.69	0.26			0.01		
Uniform Delay, d1				26.1	26.1	21.5	22.6	10.8			15.8		
Progression Factor				1.00	1.00	1.00	0.63	0.39			1.00		
Incremental Delay, d2				230.1	227.3	0.7	3.5	0.0			0.0		
Delay (s)				256.2	253.4	22.2	17.7	4.2			15.8		
Level of Service				F	F	C	B	A			B		
Approach Delay (s)		0.0			230.3			9.6			15.8		
Approach LOS		A			F			A			B		
Intersection Summary													
HCM 2000 Control Delay			174.8		HCM 2000 Level of Service						F		
HCM 2000 Volume to Capacity ratio			1.12										
Actuated Cycle Length (s)			65.0		Sum of lost time (s)						34.0		
Intersection Capacity Utilization			86.1%		ICU Level of Service						E		
Analysis Period (min)			15										

c Critical Lane Group



Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	64	872	833	391	65	606
v/c Ratio	0.19	1.30	0.86	0.62	0.12	0.27
Control Delay	24.2	171.8	25.8	7.6	35.3	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.2	171.8	25.8	7.6	35.3	0.7
Queue Length 50th (ft)	22	~231	107	0	29	1
Queue Length 95th (ft)	41	#335	#212	70	m22	m0
Internal Link Dist (ft)		52	369			236
Turn Bay Length (ft)						
Base Capacity (vph)	333	670	968	632	505	2173
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.19	1.30	0.86	0.62	0.13	0.28

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

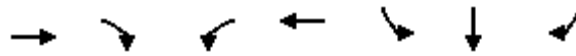
m Volume for 95th percentile queue is metered by upstream signal.

12: West Gate Blvd & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	46	592	168	0	0	0	0	420	712	45	582	0	
Future Volume (vph)	46	592	168	0	0	0	0	420	712	45	582	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.0	6.0						6.0	6.0	5.5	5.5		
Lane Util. Factor	1.00	0.95						0.91	0.91	1.00	0.95		
Frpb, ped/bikes	1.00	1.00						0.99	0.99	1.00	1.00		
Flpb, ped/bikes	1.00	1.00						1.00	1.00	1.00	1.00		
Frt	1.00	0.96						0.93	0.85	1.00	1.00		
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1805	3383						3130	1436	1736	3539		
Flt Permitted	0.95	1.00						1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1805	3383						3130	1436	1736	3539		
Peak-hour factor, PHF	0.72	0.89	0.81	0.92	0.92	0.92	0.92	0.95	0.91	0.69	0.96	0.92	
Adj. Flow (vph)	64	665	207	0	0	0	0	442	782	65	606	0	
RTOR Reduction (vph)	0	50	0	0	0	0	0	244	298	0	0	0	
Lane Group Flow (vph)	64	822	0	0	0	0	0	589	93	65	606	0	
Confl. Peds. (#/hr)			2						1	1			
Heavy Vehicles (%)	0%	2%	4%	2%	2%	2%	2%	3%	1%	4%	2%	2%	
Turn Type	Split	NA						NA	Perm	Prot	NA		
Protected Phases	1 7	1 7						5 6		2 4	2 4 5 6		
Permitted Phases									5 6				
Actuated Green, G (s)	12.0	12.0						15.5	15.5	20.5	41.5		
Effective Green, g (s)	6.5	6.5						15.5	15.5	20.5	35.5		
Actuated g/C Ratio	0.10	0.10						0.24	0.24	0.32	0.55		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)	180	338						746	342	547	1932		
v/s Ratio Prot	0.04	c0.24						c0.19		0.04	c0.17		
v/s Ratio Perm									0.06				
v/c Ratio	0.36	2.43						0.79	0.27	0.12	0.31		
Uniform Delay, d1	27.3	29.2						23.2	20.2	15.8	8.1		
Progression Factor	1.00	1.00						1.00	1.00	2.18	0.14		
Incremental Delay, d2	0.4	652.8						8.3	2.0	0.0	0.0		
Delay (s)	27.7	682.0						31.6	22.1	34.5	1.1		
Level of Service	C	F						C	C	C	A		
Approach Delay (s)		637.3			0.0			28.5			4.4		
Approach LOS		F			A			C			A		
Intersection Summary													
HCM 2000 Control Delay			224.1		HCM 2000 Level of Service						F		
HCM 2000 Volume to Capacity ratio			1.14										
Actuated Cycle Length (s)			65.0		Sum of lost time (s)					34.0			
Intersection Capacity Utilization			86.1%		ICU Level of Service					E			
Analysis Period (min)			15										

c Critical Lane Group



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1759	706	193	4895	171	176	621
v/c Ratio	0.54	0.25	0.61	1.20	0.87	0.85	0.40
Control Delay	17.8	0.2	22.8	118.5	114.4	109.2	0.8
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	0.0
Total Delay	17.8	0.2	22.8	118.8	114.4	109.2	0.8
Queue Length 50th (ft)	394	0	70	~2606	212	217	0
Queue Length 95th (ft)	430	0	m41	m1718	#282	172	0
Internal Link Dist (ft)	834			1419		192	
Turn Bay Length (ft)			950				
Base Capacity (vph)	3242	2777	316	4096	196	208	1553
Starvation Cap Reductn	0	0	0	720	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.25	0.61	1.45	0.87	0.85	0.40

Intersection Summary

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

13: Capital of Texas Hwy & Mopac SBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑↑	↑	↑↑↑					↑	↑	↑
Traffic Volume (vph)	0	1689	593	114	4552	0	0	0	0	188	55	565
Future Volume (vph)	0	1689	593	114	4552	0	0	0	0	188	55	565
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	4.0	7.0	7.0					6.5	6.5	4.0
Lane Util. Factor		0.91	0.88	1.00	0.91					0.95	0.95	1.00
Frbp, ped/bikes		1.00	0.99	1.00	1.00					1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.98	1.00
Satd. Flow (prot)		4988	2777	1752	5085					1649	1742	1553
Flt Permitted		1.00	1.00	0.09	1.00					0.95	0.98	1.00
Satd. Flow (perm)		4988	2777	163	5085					1649	1742	1553
Peak-hour factor, PHF	0.92	0.96	0.84	0.59	0.93	0.92	0.92	0.92	0.92	0.78	0.52	0.91
Adj. Flow (vph)	0	1759	706	193	4895	0	0	0	0	241	106	621
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1759	706	193	4895	0	0	0	0	171	176	621
Confl. Bikes (#/hr)			6									
Heavy Vehicles (%)	2%	4%	1%	3%	2%	2%	2%	2%	2%	4%	0%	4%
Turn Type		NA	Free	pm+pt	NA					Perm	NA	Free
Protected Phases		2		1	6						8	
Permitted Phases			Free	6						8		Free
Actuated Green, G (s)		117.0	180.0	145.0	145.0					21.5	21.5	180.0
Effective Green, g (s)		117.0	180.0	145.0	145.0					21.5	21.5	180.0
Actuated g/C Ratio		0.65	1.00	0.81	0.81					0.12	0.12	1.00
Clearance Time (s)		7.0		7.0	7.0					6.5	6.5	
Vehicle Extension (s)		4.0		2.0	4.0					2.0	2.0	
Lane Grp Cap (vph)		3242	2777	316	4096					196	208	1553
v/s Ratio Prot		0.35		0.07	c0.96							
v/s Ratio Perm			0.25	0.42						c0.10	0.10	0.40
v/c Ratio		0.54	0.25	0.61	1.20					0.87	0.85	0.40
Uniform Delay, d1		17.0	0.0	25.2	17.5					77.9	77.6	0.0
Progression Factor		1.00	1.00	1.13	1.82					1.00	1.00	1.00
Incremental Delay, d2		0.7	0.2	0.8	88.0					37.9	32.4	0.8
Delay (s)		17.7	0.2	29.2	119.8					115.8	110.0	0.8
Level of Service		B	A	C	F					F	F	A
Approach Delay (s)		12.7			116.4			0.0			41.0	
Approach LOS		B			F			A			D	
Intersection Summary												
HCM 2000 Control Delay			77.8			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			1.20									
Actuated Cycle Length (s)			180.0			Sum of lost time (s)				20.5		
Intersection Capacity Utilization			125.5%			ICU Level of Service				H		
Analysis Period (min)			15									

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	379	1665	3161	3177	1806	215	425
v/c Ratio	1.33	0.67	1.15	2.05	1.72	0.54	1.11
Control Delay	208.8	13.0	117.5	492.9	366.7	69.5	132.1
Queue Delay	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Total Delay	208.8	13.0	119.5	492.9	366.7	69.5	132.1
Queue Length 50th (ft)	~528	363	~1599	~5684	~1110	230	~506
Queue Length 95th (ft)	m#744	385	m777	m#2977	#1198	283	#526
Internal Link Dist (ft)		1419	756			675	
Turn Bay Length (ft)					300		
Base Capacity (vph)	286	2487	2740	1549	1050	395	382
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	1413	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.33	0.67	2.38	2.05	1.72	0.54	1.11

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.




















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

Queue shown is maximum after two cycles.

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

14: Mopac NBFR & Capital of Texas Hwy
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	349	1565	0	0	2940	3082	1698	172	319	0	0	0
Future Volume (veh/h)	349	1565	0	0	2940	3082	1698	172	319	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1827	0	0	1863	1845	1881	1900	1863			
Adj Flow Rate, veh/h	379	1665	0	0	3161	0	1806	215	0			
Adj No. of Lanes	1	2	0	0	3	1	3	1	1			
Peak Hour Factor	0.92	0.94	0.92	0.92	0.93	0.97	0.94	0.80	0.75			
Percent Heavy Veh, %	2	4	0	0	2	3	1	0	2			
Cap, veh/h	286	2488	0	0	2740	845	1053	396	330			
Arrive On Green	0.28	1.00	0.00	0.00	0.54	0.00	0.21	0.21	0.00			
Sat Flow, veh/h	1774	3563	0	0	5253	1568	5052	1900	1583			
Grp Volume(v), veh/h	379	1665	0	0	3161	0	1806	215	0			
Grp Sat Flow(s),veh/h/ln	1774	1736	0	0	1695	1568	1684	1900	1583			
Q Serve(g_s), s	25.0	0.0	0.0	0.0	97.0	0.0	37.5	18.2	0.0			
Cycle Q Clear(g_c), s	25.0	0.0	0.0	0.0	97.0	0.0	37.5	18.2	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	286	2488	0	0	2740	845	1053	396	330			
V/C Ratio(X)	1.32	0.67	0.00	0.00	1.15	0.00	1.72	0.54	0.00			
Avail Cap(c_a), veh/h	286	2488	0	0	2740	845	1053	396	330			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.80	0.80	0.00	0.00	1.00	0.00	1.00	1.00	0.00			
Uniform Delay (d), s/veh	63.3	0.0	0.0	0.0	41.5	0.0	71.3	63.6	0.0			
Incr Delay (d2), s/veh	163.7	1.2	0.0	0.0	73.7	0.0	326.2	0.9	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			
%ile BackOfQ(50%),veh/ln	27.2	0.4	0.0	0.0	63.9	0.0	49.2	9.6	0.0			
LnGrp Delay(d),s/veh	227.0	1.2	0.0	0.0	115.2	0.0	397.4	64.5	0.0			
LnGrp LOS	F	A			F		F	E				
Approach Vol, veh/h		2044			3161			2021				
Approach Delay, s/veh		43.0			115.2			362.0				
Approach LOS		D			F			F				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		136.0		44.0	32.0	104.0						
Change Period (Y+Rc), s		7.0		6.5	7.0	7.0						
Max Green Setting (Gmax), s		129.0		37.5	25.0	97.0						
Max Q Clear Time (g_c+I1), s		2.0		39.5	27.0	99.0						
Green Ext Time (p_c), s		5.0		0.0	0.0	0.0						
Intersection Summary												
HCM 2010 Ctrl Delay				163.8								
HCM 2010 LOS				F								



Lane Group	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	167	6037	150	582	4346
v/c Ratio	0.31	1.61	0.13	1.71	1.17
Control Delay	64.8	297.6	6.3	373.3	103.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	64.8	297.6	6.3	373.3	103.3
Queue Length 50th (ft)	98	~3724	42	~1018	~2236
Queue Length 95th (ft)	121	#3644	41	m#1133	m#2206
Internal Link Dist (ft)		1281			1273
Turn Bay Length (ft)			430	550	
Base Capacity (vph)	536	3757	1197	340	3721
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.31	1.61	0.13	1.71	1.17

Intersection Summary

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

15: Capital of Texas Hwy & Barton Creek Plaza Driveway
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted AM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↔↔	↑↑↑	↔	↔	↑↑↑
Traffic Volume (vph)	0	130	5916	93	489	4129
Future Volume (vph)	0	130	5916	93	489	4129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	7.0	7.0	6.0	7.0
Lane Util. Factor		0.88	0.91	1.00	1.00	0.91
Frbp, ped/bikes		1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		2842	5085	1615	1805	5036
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		2842	5085	1615	1805	5036
Peak-hour factor, PHF	0.92	0.78	0.98	0.62	0.84	0.95
Adj. Flow (vph)	0	167	6037	150	582	4346
RTOR Reduction (vph)	0	0	0	4	0	0
Lane Group Flow (vph)	0	167	6037	146	582	4346
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	2%	0%	2%	0%	0%	3%
Turn Type		Over	NA	Prot	Prot	NA
Protected Phases		5	6	6	5	6
Permitted Phases						
Actuated Green, G (s)		34.0	133.0	133.0	34.0	133.0
Effective Green, g (s)		34.0	133.0	133.0	34.0	133.0
Actuated g/C Ratio		0.19	0.74	0.74	0.19	0.74
Clearance Time (s)		6.0	7.0	7.0	6.0	7.0
Vehicle Extension (s)		2.0	4.0	4.0	2.0	4.0
Lane Grp Cap (vph)		536	3757	1193	340	3721
v/s Ratio Prot		0.06	c1.19	0.09	c0.32	0.86
v/s Ratio Perm						
v/c Ratio		0.31	1.61	0.12	1.71	1.17
Uniform Delay, d1		62.9	23.5	6.7	73.0	23.5
Progression Factor		1.00	1.00	1.00	1.07	1.00
Incremental Delay, d2		0.1	274.4	0.2	332.2	78.7
Delay (s)		63.0	297.9	7.0	410.0	102.2
Level of Service		E	F	A	F	F
Approach Delay (s)	63.0		290.8			138.6
Approach LOS	E		F			F
Intersection Summary						
HCM 2000 Control Delay			220.9		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.63			
Actuated Cycle Length (s)			180.0		Sum of lost time (s)	13.0
Intersection Capacity Utilization			152.2%		ICU Level of Service	H
Analysis Period (min)			15			

c Critical Lane Group



Lane Group	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	174	1758	104	360	421	208
v/c Ratio	0.25	1.19	0.24	0.40	0.98	0.43
Control Delay	27.3	130.1	11.2	13.9	88.8	15.1
Queue Delay	0.0	0.0	0.5	3.9	5.2	0.0
Total Delay	27.3	130.1	11.7	17.8	94.0	15.1
Queue Length 50th (ft)	99	~979	40	185	371	32
Queue Length 95th (ft)	m148	m#1102	m52	159	#509	29
Internal Link Dist (ft)		522		175	200	
Turn Bay Length (ft)			70			90
Base Capacity (vph)	692	1473	508	892	431	486
Starvation Cap Reductn	0	0	189	437	0	0
Spillback Cap Reductn	35	0	0	0	10	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	1.19	0.33	0.79	1.00	0.43

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.



















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

Queue shown is maximum after two cycles.

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

16: US 290 WBFR & Victory Drive
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted AM

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (vph)	0	0	0	153	1440	199	98	223	0	0	320	127		
Future Volume (vph)	0	0	0	153	1440	199	98	223	0	0	320	127		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)				5.5	5.5		5.5	4.5			4.5	4.5		
Lane Util. Factor				1.00	0.95		1.00	1.00			1.00	1.00		
Frbp, ped/bikes				1.00	1.00		1.00	1.00			1.00	0.98		
Flpb, ped/bikes				1.00	1.00		1.00	1.00			1.00	1.00		
Frt				1.00	0.98		1.00	1.00			1.00	0.85		
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00		
Satd. Flow (prot)				1597	3376		1769	1827			1759	1489		
Flt Permitted				0.95	1.00		0.14	1.00			1.00	1.00		
Satd. Flow (perm)				1597	3376		260	1827			1759	1489		
Peak-hour factor, PHF	0.92	0.92	0.92	0.88	0.96	0.77	0.94	0.62	0.92	0.92	0.76	0.61		
Adj. Flow (vph)	0	0	0	174	1500	258	104	360	0	0	421	208		
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	122		
Lane Group Flow (vph)	0	0	0	174	1748	0	104	360	0	0	421	86		
Confl. Peds. (#/hr)						6	6					6		
Confl. Bikes (#/hr)												4		
Heavy Vehicles (%)	2%	2%	2%	13%	3%	11%	2%	4%	2%	2%	8%	6%		
Turn Type				Split	NA		pm+pt	NA			NA	Perm		
Protected Phases				7 8	7 8		2 10 1 2 6 10				1 6			
Permitted Phases							1 2 6 10					1 6		
Actuated Green, G (s)				58.0	58.0		61.0	66.5			33.1	33.1		
Effective Green, g (s)				58.0	58.0		50.5	55.0			33.1	33.1		
Actuated g/C Ratio				0.43	0.43		0.37	0.41			0.25	0.25		
Clearance Time (s)														
Vehicle Extension (s)														
Lane Grp Cap (vph)				686	1450		342	744			431	365		
v/s Ratio Prot				0.11	c0.52		0.05	c0.20			c0.24			
v/s Ratio Perm							0.06					0.06		
v/c Ratio				0.25	1.21		0.30	0.48			0.98	0.23		
Uniform Delay, d1				24.6	38.5		30.5	29.5			50.6	40.8		
Progression Factor				1.07	1.05		0.53	0.59			1.00	1.00		
Incremental Delay, d2				0.1	99.2		0.1	0.1			36.8	0.1		
Delay (s)				26.4	139.8		16.2	17.6			87.3	40.9		
Level of Service				C	F		B	B			F	D		
Approach Delay (s)		0.0			129.6			17.3			72.0			
Approach LOS		A			F			B			E			
Intersection Summary														
HCM 2000 Control Delay			100.4									HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio			1.10											
Actuated Cycle Length (s)			135.0								32.0			
Intersection Capacity Utilization			111.6%										ICU Level of Service	H
Analysis Period (min)			15											
c	Critical Lane Group													



Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1788	200	201	386	130
v/c Ratio	1.09	0.26	0.30	0.61	0.14
Control Delay	98.4	27.5	12.3	14.1	3.7
Queue Delay	4.3	0.0	0.0	0.8	1.4
Total Delay	102.7	27.5	12.3	14.9	5.1
Queue Length 50th (ft)	~655	115	46	70	11
Queue Length 95th (ft)	m#702	165	87	m145	m16
Internal Link Dist (ft)	53	253			175
Turn Bay Length (ft)			125	70	
Base Capacity (vph)	1640	751	662	635	926
Starvation Cap Reductn	0	0	0	73	635
Spillback Cap Reductn	101	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.16	0.27	0.30	0.69	0.45

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.























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

Queue shown is maximum after two cycles.

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

17: Pack Saddle Pass & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted AM

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations		  							 	 	 			
Traffic Volume (vph)	135	1381	56	0	0	0	0	172	167	336	117	0		
Future Volume (vph)	135	1381	56	0	0	0	0	172	167	336	117	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)		6.0						4.5	4.5	5.5	4.5			
Lane Util. Factor		0.91						1.00	1.00	1.00	1.00			
Frbp, ped/bikes		1.00						1.00	1.00	1.00	1.00			
Flpb, ped/bikes		1.00						1.00	1.00	1.00	1.00			
Frt		0.99						1.00	0.85	1.00	1.00			
Flt Protected		0.99						1.00	1.00	0.95	1.00			
Satd. Flow (prot)		4913						1845	1455	1702	1583			
Flt Permitted		0.99						1.00	1.00	0.56	1.00			
Satd. Flow (perm)		4913						1845	1455	997	1583			
Peak-hour factor, PHF	0.54	0.94	0.81	0.92	0.92	0.92	0.92	0.86	0.83	0.87	0.90	0.92		
Adj. Flow (vph)	250	1469	69	0	0	0	0	200	201	386	130	0		
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	74	0	0	0		
Lane Group Flow (vph)	0	1785	0	0	0	0	0	200	127	386	130	0		
Confl. Peds. (#/hr)			3						1	1				
Confl. Bikes (#/hr)			1											
Heavy Vehicles (%)	6%	4%	0%	2%	2%	2%	2%	3%	11%	6%	20%	2%		
Turn Type	Split	NA						NA	Prot	D.P+P	NA			
Protected Phases	8 10	8 10						1 2 6	1 2 6	7	1 2 6 7			
Permitted Phases										1 2 6				
Actuated Green, G (s)		45.0						55.5	55.5	74.0	78.5			
Effective Green, g (s)		45.0						50.0	50.0	69.5	73.0			
Actuated g/C Ratio		0.33						0.37	0.37	0.51	0.54			
Clearance Time (s)										5.5				
Vehicle Extension (s)										1.5				
Lane Grp Cap (vph)		1637						683	538	609	855			
v/s Ratio Prot		c0.36						0.11	0.09	c0.09	0.08			
v/s Ratio Perm										c0.24				
v/c Ratio		1.09						0.29	0.24	0.63	0.15			
Uniform Delay, d1		45.0						30.0	29.3	28.8	15.5			
Progression Factor		1.16						1.00	1.00	0.55	0.28			
Incremental Delay, d2		50.2						0.1	0.1	1.0	0.0			
Delay (s)		102.5						30.1	29.4	16.9	4.3			
Level of Service		F						C	C	B	A			
Approach Delay (s)		102.5			0.0			29.8			13.7			
Approach LOS		F			A			C			B			
Intersection Summary														
HCM 2000 Control Delay			74.8									HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio			0.90											
Actuated Cycle Length (s)			135.0							32.0			Sum of lost time (s)	
Intersection Capacity Utilization			111.6%										ICU Level of Service	H
Analysis Period (min)			15											
c Critical Lane Group														



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	552	1146	880	676	1043	1255
v/c Ratio	2.15	2.16	2.16	3.22	0.39	1.40
Control Delay	556.1	555.8	552.5	1017.5	0.6	224.3
Queue Delay	0.1	0.1	0.0	0.0	2.1	1.5
Total Delay	556.2	555.9	552.5	1017.5	2.6	225.9
Queue Length 50th (ft)	~814	~847	~1062	~950	8	~512
Queue Length 95th (ft)	#1016	#990	#1215	m#932	m8	#569
Internal Link Dist (ft)		53			174	314
Turn Bay Length (ft)						
Base Capacity (vph)	257	530	407	210	2694	898
Starvation Cap Reductn	0	0	0	0	1450	0
Spillback Cap Reductn	2	4	0	0	0	209
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	2.16	2.18	2.16	3.22	0.84	1.82

Intersection Summary

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

18: US 290 WBFR & Menchaca Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations				↙	↕	↗	↙	↕			↕	↗	
Traffic Volume (vph)	0	0	0	572	979	748	575	960	0	0	889	197	
Future Volume (vph)	0	0	0	572	979	748	575	960	0	0	889	197	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				6.0	6.0	6.0	5.0	5.0			5.0		
Lane Util. Factor				0.91	0.91	1.00	1.00	0.95			0.91		
Frbp, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00		
Flpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00		
Frt				1.00	1.00	0.85	1.00	1.00			0.97		
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00		
Satd. Flow (prot)				1595	3284	1599	1769	3574			4929		
Flt Permitted				0.95	1.00	1.00	0.21	1.00			1.00		
Satd. Flow (perm)				1595	3284	1599	391	3574			4929		
Peak-hour factor, PHF	0.92	0.92	0.92	0.87	0.94	0.85	0.85	0.92	0.92	0.92	0.86	0.89	
Adj. Flow (vph)	0	0	0	657	1041	880	676	1043	0	0	1034	221	
RTOR Reduction (vph)	0	0	0	0	0	149	0	0	0	0	26	0	
Lane Group Flow (vph)	0	0	0	552	1146	731	676	1043	0	0	1229	0	
Confl. Peds. (#/hr)							1					1	
Confl. Bikes (#/hr)												1	
Heavy Vehicles (%)	2%	2%	2%	3%	5%	1%	2%	1%	2%	2%	2%	3%	
Turn Type				Perm	NA	Perm	custom	NA				NA	
Protected Phases					7 8			1 2 6 10				1 6	
Permitted Phases				7 8		7 8	2 10						
Actuated Green, G (s)				21.0	21.0	21.0	70.0	98.0				23.0	
Effective Green, g (s)				21.0	21.0	21.0	70.0	98.0				23.0	
Actuated g/C Ratio				0.16	0.16	0.16	0.54	0.75				0.18	
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				257	530	258	210	2694				872	
v/s Ratio Prot								0.29				c0.25	
v/s Ratio Perm				0.35	0.35	c0.46	c1.73						
v/c Ratio				2.15	2.16	2.83	3.22	0.39				1.41	
Uniform Delay, d1				54.5	54.5	54.5	30.0	5.6				53.5	
Progression Factor				1.00	1.00	1.00	0.54	0.07				1.00	
Incremental Delay, d2				529.3	529.3	835.2	1003.1	0.0				191.3	
Delay (s)				583.8	583.8	889.7	1019.4	0.4				244.8	
Level of Service				F	F	F	F	A				F	
Approach Delay (s)		0.0			688.2			401.2				244.8	
Approach LOS		A			F			F				F	
Intersection Summary													
HCM 2000 Control Delay			499.1		HCM 2000 Level of Service							F	
HCM 2000 Volume to Capacity ratio			3.23										
Actuated Cycle Length (s)			130.0		Sum of lost time (s)						32.0		
Intersection Capacity Utilization			132.2%		ICU Level of Service						H		
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	276	502	232	2148	785	932
v/c Ratio	0.80	0.74	0.51	1.21dr	1.68	0.37
Control Delay	68.7	57.2	13.3	70.4	331.1	7.2
Queue Delay	21.0	0.0	0.0	22.0	3.5	51.2
Total Delay	89.7	57.2	13.3	92.4	334.6	58.4
Queue Length 50th (ft)	224	212	21	~717	~945	92
Queue Length 95th (ft)	#354	272	100	#812	m#432	m57
Internal Link Dist (ft)		62		300		174
Turn Bay Length (ft)						
Base Capacity (vph)	343	674	457	2048	467	2534
Starvation Cap Reductn	0	0	0	0	138	1714
Spillback Cap Reductn	64	0	0	534	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.74	0.51	1.42	2.39	1.14

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

19: Menchaca Road & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗					↑↑↑		↘	↑↑	
Traffic Volume (vph)	246	447	225	0	0	0	0	1241	724	636	913	0
Future Volume (vph)	246	447	225	0	0	0	0	1241	724	636	913	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0					5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00					0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99					1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.94		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1787	3505	1533					4810		1787	3505	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1787	3505	1533					4810		1787	3505	
Peak-hour factor, PHF	0.89	0.89	0.97	0.92	0.92	0.92	0.92	0.95	0.86	0.81	0.98	0.92
Adj. Flow (vph)	276	502	232	0	0	0	0	1306	842	785	932	0
RTOR Reduction (vph)	0	0	162	0	0	0	0	14	0	0	0	0
Lane Group Flow (vph)	276	502	70	0	0	0	0	2134	0	785	932	0
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	3%	4%	2%	2%	2%	2%	1%	1%	1%	3%	2%
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		8 10						1 2		6 7	1 2 6 7	
Permitted Phases	8 10		8 10									
Actuated Green, G (s)	26.0	26.0	26.0					55.0		33.0	93.0	
Effective Green, g (s)	26.0	26.0	26.0					55.0		33.0	93.0	
Actuated g/C Ratio	0.20	0.20	0.20					0.42		0.25	0.72	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	357	701	306					2035		453	2507	
v/s Ratio Prot		0.14						c0.44		c0.44	0.27	
v/s Ratio Perm	c0.15		0.05									
v/c Ratio	0.77	0.72	0.23					1.21dr		1.73	0.37	
Uniform Delay, d1	49.2	48.6	43.6					37.5		48.5	7.2	
Progression Factor	1.00	1.00	1.00					1.00		0.55	1.04	
Incremental Delay, d2	9.1	2.9	0.1					34.1		330.6	0.0	
Delay (s)	58.4	51.5	43.7					71.6		357.4	7.5	
Level of Service	E	D	D					E		F	A	
Approach Delay (s)		51.6			0.0			71.6			167.5	
Approach LOS		D			A			E			F	

Intersection Summary

HCM 2000 Control Delay	101.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.38		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	32.0
Intersection Capacity Utilization	132.2%	ICU Level of Service	H
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

Intersection												
Int Delay, s/veh	49.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	14	171	167	15	152	4	163	11	111	2	21	32
Future Vol, veh/h	14	171	167	15	152	4	163	11	111	2	21	32
Conflicting Peds, #/hr	15	0	4	4	0	15	9	0	15	15	0	9
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	66	74	95	58	60	76	75	60	60	60	75
Heavy Vehicles, %	0	0	6	0	0	0	11	17	2	0	0	0
Mvmt Flow	28	259	226	16	262	7	214	15	185	3	35	43

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	284	0	0	489	0	0	778	748	391	856	858	290
Stage 1	-	-	-	-	-	-	432	432	-	313	313	-
Stage 2	-	-	-	-	-	-	346	316	-	543	545	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.21	6.67	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.21	5.67	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.21	5.67	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.599	4.153	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1290	-	-	1085	-	-	303	324	658	280	297	754
Stage 1	-	-	-	-	-	-	585	557	-	702	661	-
Stage 2	-	-	-	-	-	-	651	629	-	528	522	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1272	-	-	1081	-	-	246	303	646	180	278	737
Mov Cap-2 Maneuver	-	-	-	-	-	-	246	303	-	180	278	-
Stage 1	-	-	-	-	-	-	565	538	-	670	641	-
Stage 2	-	-	-	-	-	-	565	610	-	350	504	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.5			150.9			16.3		
HCM LOS							F			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	343	1272	-	-	1081	-	-	400
HCM Lane V/C Ratio	1.207	0.022	-	-	0.015	-	-	0.203
HCM Control Delay (s)	150.9	7.9	0	-	8.4	0	-	16.3
HCM Lane LOS	F	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	17.7	0.1	-	-	0	-	-	0.7



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	630	526	2059	816	501	2487
v/c Ratio	0.71	0.68	1.30	0.90	1.29	1.04
Control Delay	50.5	32.2	165.4	20.7	186.0	54.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.5	32.2	165.4	20.7	186.0	54.3
Queue Length 50th (ft)	259	345	~1210	190	~510	~1241
Queue Length 95th (ft)	309	481	m#1299	m171	#632	#1368
Internal Link Dist (ft)	497		121			322
Turn Bay Length (ft)		125			125	
Base Capacity (vph)	890	778	1588	905	387	2382
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.68	1.30	0.90	1.29	1.04

Intersection Summary

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

1: S Lamar Blvd & W Oltorf Street
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰↰	↱	↕↕	↱	↰	↕↕
Traffic Volume (vph)	542	494	1935	694	411	2313
Future Volume (vph)	542	494	1935	694	411	2313
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1615	3574	1542	1787	3574
Flt Permitted	0.95	1.00	1.00	1.00	0.06	1.00
Satd. Flow (perm)	3433	1615	3574	1542	116	3574
Peak-hour factor, PHF	0.86	0.94	0.94	0.85	0.82	0.93
Adj. Flow (vph)	630	526	2059	816	501	2487
RTOR Reduction (vph)	0	1	0	221	0	0
Lane Group Flow (vph)	630	525	2059	595	501	2487
Confl. Peds. (#/hr)		10		6	6	
Confl. Bikes (#/hr)				5		
Heavy Vehicles (%)	2%	0%	1%	2%	1%	1%
Turn Type	Prot	pt+ov	NA	Perm	pm+pt	NA
Protected Phases	4	1 4	2		1	6
Permitted Phases		4		2	6	
Actuated Green, G (s)	35.0	65.0	60.0	60.0	90.0	90.0
Effective Green, g (s)	35.0	65.0	60.0	60.0	90.0	90.0
Actuated g/C Ratio	0.26	0.48	0.44	0.44	0.67	0.67
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	1.0		1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	890	777	1588	685	386	2382
v/s Ratio Prot	0.18	c0.33	0.58		c0.24	0.70
v/s Ratio Perm				0.39	c0.62	
v/c Ratio	0.71	0.68	1.30	0.87	1.30	1.04
Uniform Delay, d1	45.4	26.9	37.5	33.9	46.4	22.5
Progression Factor	1.00	1.00	0.84	0.68	1.00	1.00
Incremental Delay, d2	4.7	4.7	136.0	8.0	152.0	31.2
Delay (s)	50.1	31.6	167.7	31.1	198.4	53.7
Level of Service	D	C	F	C	F	D
Approach Delay (s)	41.7		128.9			78.0
Approach LOS	D		F			E
Intersection Summary						
HCM 2000 Control Delay			92.9		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.16			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			104.2%		ICU Level of Service	G
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	154	394	143	240	2360	186	56	2613
v/c Ratio	0.66	0.90	0.65	1.14	0.96	0.17	1.00	1.31
Control Delay	56.9	63.1	58.0	108.7	27.1	6.9	100.3	170.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.9	63.1	58.0	108.7	27.1	6.9	100.3	170.7
Queue Length 50th (ft)	113	273	96	~203	919	43	43	~1551
Queue Length 95th (ft)	141	136	129	m#273	m#1195	m46	m#56	m#1492
Internal Link Dist (ft)		215	74		201			588
Turn Bay Length (ft)	75			50		125	50	
Base Capacity (vph)	234	506	295	211	2457	1073	56	1992
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.78	0.48	1.14	0.96	0.17	1.00	1.31

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

2: S Lamar Blvd & Bluebonnet Lane
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	117	49	249	0	56	62	202	2124	141	40	2506	2
Future Volume (vph)	117	49	249	0	56	62	202	2124	141	40	2506	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.97			0.97		1.00	1.00	0.95	1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.89			0.94		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1798	1633			1733		1787	3574	1529	1805	3539	
Flt Permitted	0.34	1.00			1.00		0.05	1.00	1.00	0.05	1.00	
Satd. Flow (perm)	646	1633			1733		93	3574	1529	100	3539	
Peak-hour factor, PHF	0.76	0.47	0.86	0.69	0.75	0.91	0.84	0.90	0.76	0.72	0.96	0.60
Adj. Flow (vph)	154	104	290	0	75	68	240	2360	186	56	2610	3
RTOR Reduction (vph)	0	62	0	0	26	0	0	0	23	0	0	0
Lane Group Flow (vph)	154	332	0	0	117	0	240	2360	163	56	2613	0
Confl. Peds. (#/hr)	12		12	12		12	8		9	9		8
Confl. Bikes (#/hr)			6			5			12			4
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%	1%	1%	0%	0%	2%	0%
Turn Type	pm+pt	NA			NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4						2		2	6		
Actuated Green, G (s)	31.2	31.2			15.2		92.8	92.8	92.8	76.0	76.0	
Effective Green, g (s)	31.2	31.2			15.2		92.8	92.8	92.8	76.0	76.0	
Actuated g/C Ratio	0.23	0.23			0.11		0.69	0.69	0.69	0.56	0.56	
Clearance Time (s)	6.0	6.0			6.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0			2.0		1.0	1.0	1.0	1.0	1.0	
Lane Grp Cap (vph)	234	377			195		211	2456	1051	56	1992	
v/s Ratio Prot	0.05	c0.20			0.07		0.10	c0.66			c0.74	
v/s Ratio Perm	0.10						0.68		0.11	0.56		
v/c Ratio	0.66	0.88			0.60		1.14	0.96	0.16	1.00	1.31	
Uniform Delay, d1	44.1	50.1			57.0		48.3	19.4	7.4	29.5	29.5	
Progression Factor	1.00	1.00			1.00		0.89	1.15	1.32	1.11	1.08	
Incremental Delay, d2	5.0	19.6			3.6		76.4	3.8	0.1	62.8	141.3	
Delay (s)	49.1	69.7			60.6		119.4	26.2	9.9	95.6	173.3	
Level of Service	D	E			E		F	C	A	F	F	
Approach Delay (s)		63.9			60.6			33.1			171.6	
Approach LOS		E			E			C			F	
Intersection Summary												
HCM 2000 Control Delay			96.7				HCM 2000 Level of Service				F	
HCM 2000 Volume to Capacity ratio			1.25									
Actuated Cycle Length (s)			135.0				Sum of lost time (s)				22.0	
Intersection Capacity Utilization			114.7%				ICU Level of Service				H	
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	884	2111	37	821	2483
v/c Ratio	1.07	0.95	0.04	1.59	1.04
Control Delay	96.8	21.7	0.7	305.5	29.8
Queue Delay	0.0	1.7	0.0	0.0	24.6
Total Delay	96.8	23.4	0.7	305.5	54.3
Queue Length 50th (ft)	~481	985	1	~1052	~1218
Queue Length 95th (ft)	#627	#1112	m1	m#801	m148
Internal Link Dist (ft)		324			498
Turn Bay Length (ft)				100	
Base Capacity (vph)	825	2223	992	516	2385
Starvation Cap Reductn	0	46	0	0	0
Spillback Cap Reductn	0	0	0	0	267
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.07	0.97	0.04	1.59	1.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

3: S Lamar Blvd & Menchaca Road
 HCM Signalized Intersection Capacity Analysis



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↔↔	↕↕	↗	↘	↕↕
Traffic Volume (vph)	0	813	1900	28	706	2284
Future Volume (vph)	0	813	1900	28	706	2284
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0
Lane Util. Factor		0.88	0.95	1.00	1.00	0.95
Frbp, ped/bikes		1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		2814	3574	1581	1787	3539
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		2814	3574	1581	1787	3539
Peak-hour factor, PHF	0.92	0.92	0.90	0.75	0.86	0.92
Adj. Flow (vph)	0	884	2111	37	821	2483
RTOR Reduction (vph)	0	13	0	9	0	0
Lane Group Flow (vph)	0	871	2111	28	821	2483
Confl. Peds. (#/hr)		7		6	6	
Confl. Bikes (#/hr)		1		9		
Heavy Vehicles (%)	2%	1%	1%	0%	1%	2%
Turn Type		pt+ov	NA	Perm	Prot	NA
Protected Phases		1 4	2 3		1 4	1 2
Permitted Phases				2 3		
Actuated Green, G (s)		39.0	84.0	84.0	39.0	91.0
Effective Green, g (s)		39.0	84.0	84.0	39.0	91.0
Actuated g/C Ratio		0.29	0.62	0.62	0.29	0.67
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		812	2223	983	516	2385
v/s Ratio Prot		0.31	c0.59		c0.46	c0.70
v/s Ratio Perm				0.02		
v/c Ratio		1.07	0.95	0.03	1.59	1.04
Uniform Delay, d1		48.0	23.5	9.8	48.0	22.0
Progression Factor		1.00	0.59	0.13	1.30	0.32
Incremental Delay, d2		53.0	6.3	0.0	266.8	20.1
Delay (s)		101.0	20.3	1.3	329.2	27.2
Level of Service		F	C	A	F	C
Approach Delay (s)	101.0		20.0			102.2
Approach LOS	F		B			F
Intersection Summary						
HCM 2000 Control Delay			74.2		HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			1.33			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	24.0
Intersection Capacity Utilization			118.3%		ICU Level of Service	H
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	136	466	116	205	264	1953	90	117	2439
v/c Ratio	0.68	0.69	1.38	0.32	2.20	0.81	0.08	4.68	1.11
Control Delay	70.0	44.4	270.4	46.6	578.9	8.4	0.3	1676.4	61.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.1
Total Delay	70.0	44.4	270.4	46.6	578.9	9.9	0.3	1676.4	61.2
Queue Length 50th (ft)	113	152	~134	77	~372	386	1	~191	~1287
Queue Length 95th (ft)	#182	173	#261	109	m#401	m494	m1	m#184	m#1201
Internal Link Dist (ft)		257		238		436			324
Turn Bay Length (ft)	90		100		125		160	100	
Base Capacity (vph)	200	677	84	636	120	2409	1088	25	2191
Starvation Cap Reductn	0	0	0	0	0	0	0	0	57
Spillback Cap Reductn	0	0	0	0	0	260	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.69	1.38	0.32	2.20	0.91	0.08	4.68	1.14

Intersection Summary

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

4: S Lamar Blvd & Barton Skyway/Lightsey Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	117	159	207	106	147	19	232	1758	79	88	2111	70
Future Volume (vph)	117	159	207	106	147	19	232	1758	79	88	2111	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.92		1.00	0.98		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1798	3263		1799	3516		1805	3574	1579	1736	3519	
Flt Permitted	0.60	1.00		0.25	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1127	3263		477	3516		1805	3574	1579	1736	3519	
Peak-hour factor, PHF	0.86	0.78	0.79	0.91	0.85	0.60	0.88	0.90	0.88	0.75	0.90	0.75
Adj. Flow (vph)	136	204	262	116	173	32	264	1953	90	117	2346	93
RTOR Reduction (vph)	0	97	0	0	12	0	0	0	24	0	2	0
Lane Group Flow (vph)	136	369	0	116	193	0	264	1953	66	117	2437	0
Confl. Peds. (#/hr)	3		5	5		3	5		18	18		5
Confl. Bikes (#/hr)			2						7			8
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	4%	2%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		8			8		5	5 6		7	6 7	
Permitted Phases	8			8					5 6			
Actuated Green, G (s)	24.0	24.0		24.0	24.0		9.0	91.0	91.0	2.0	84.0	
Effective Green, g (s)	24.0	24.0		24.0	24.0		9.0	91.0	91.0	2.0	84.0	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.07	0.67	0.67	0.01	0.62	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0			6.0		
Vehicle Extension (s)	2.0	2.0		2.0	2.0		1.0			1.0		
Lane Grp Cap (vph)	200	580		84	625		120	2409	1064	25	2189	
v/s Ratio Prot		0.11			0.06		c0.15	0.55		c0.07	c0.69	
v/s Ratio Perm	0.12			c0.24					0.04			
v/c Ratio	0.68	0.64		1.38	0.31		2.20	0.81	0.06	4.68	1.11	
Uniform Delay, d1	51.9	51.5		55.5	48.3		63.0	15.8	7.5	66.5	25.5	
Progression Factor	1.00	1.00		1.00	1.00		1.18	0.46	0.11	0.70	0.18	
Incremental Delay, d2	17.1	5.3		229.5	1.3		548.7	1.0	0.0	1664.2	51.6	
Delay (s)	69.0	56.7		285.0	49.6		623.0	8.2	0.9	1710.9	56.2	
Level of Service	E	E		F	D		F	A	A	F	E	
Approach Delay (s)		59.5			134.6			78.3			132.0	
Approach LOS		E			F			E			F	
Intersection Summary												
HCM 2000 Control Delay			103.2				HCM 2000 Level of Service			F		
HCM 2000 Volume to Capacity ratio			1.35									
Actuated Cycle Length (s)			135.0				Sum of lost time (s)			24.0		
Intersection Capacity Utilization			126.0%				ICU Level of Service			H		
Analysis Period (min)			15									
c Critical Lane Group												






















Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	134	183	274	43	2187	284	2224
v/c Ratio	0.81	0.76	0.71	0.77	0.99	1.99	0.87
Control Delay	79.5	70.7	43.1	93.2	40.7	473.5	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.5	70.7	43.1	93.2	40.7	473.5	4.9
Queue Length 50th (ft)	100	152	149	25	926	~348	135
Queue Length 95th (ft)	105	196	125	#91	#1165	m#312	m126
Internal Link Dist (ft)	270		212		208		469
Turn Bay Length (ft)		120		95		125	
Base Capacity (vph)	165	242	387	56	2217	143	2562
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.76	0.71	0.77	0.99	1.99	0.87

Intersection Summary

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

5: S Lamar Blvd & Private Driveway/Panther Trail
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	14	39	139	9	207	34	1907	155	247	2111	17
Future Volume (veh/h)	43	14	39	139	9	207	34	1907	155	247	2111	17
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	1.00		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1814	1900	1900	1880	1900	1827	1881	1900
Adj Flow Rate, veh/h	61	23	50	183	15	259	43	2007	180	284	2199	25
Adj No. of Lanes	0	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.70	0.60	0.78	0.76	0.60	0.80	0.79	0.95	0.86	0.87	0.96	0.69
Percent Heavy Veh, %	0	0	0	0	0	5	0	1	2	4	1	0
Cap, veh/h	58	27	27	234	17	295	102	2085	184	149	2600	29
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.63	0.63	0.63	0.05	0.72	0.72
Sat Flow, veh/h	92	129	131	1348	82	1421	175	3311	292	1740	3619	41
Grp Volume(v), veh/h	134	0	0	183	0	274	43	1065	1122	284	1083	1141
Grp Sat Flow(s),veh/h/ln	352	0	0	1348	0	1503	175	1786	1817	1740	1787	1873
Q Serve(g_s), s	4.1	0.0	0.0	0.0	0.0	23.9	31.6	74.0	80.6	7.0	58.5	59.2
Cycle Q Clear(g_c), s	28.0	0.0	0.0	28.0	0.0	23.9	78.8	74.0	80.6	7.0	58.5	59.2
Prop In Lane	0.46		0.37	1.00		0.95	1.00		0.16	1.00		0.02
Lane Grp Cap(c), veh/h	112	0	0	234	0	312	102	1124	1144	149	1284	1346
V/C Ratio(X)	1.20	0.00	0.00	0.78	0.00	0.88	0.42	0.95	0.98	1.90	0.84	0.85
Avail Cap(c_a), veh/h	112	0	0	234	0	312	102	1124	1144	149	1284	1346
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.2	0.0	0.0	53.7	0.0	51.9	46.3	23.0	24.2	46.3	13.6	13.7
Incr Delay (d2), s/veh	148.2	0.0	0.0	22.3	0.0	27.8	12.1	16.9	22.3	430.3	6.9	6.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	0.0	0.0	8.3	0.0	12.3	1.9	41.4	47.0	23.4	30.7	32.6
LnGrp Delay(d),s/veh	207.5	0.0	0.0	76.0	0.0	79.6	58.5	39.8	46.4	476.6	20.5	20.4
LnGrp LOS	F			E		E	E	D	D	F	C	C
Approach Vol, veh/h		134			457			2230			2508	
Approach Delay, s/veh		207.5			78.2			43.5			72.1	
Approach LOS		F			E			D			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	12.0	90.0		33.0		102.0		33.0				
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s	7.0	85.0		28.0		97.0		28.0				
Max Q Clear Time (g_c+I1), s	9.0	82.6		30.0		61.2		30.0				
Green Ext Time (p_c), s	0.0	1.8		0.0		7.3		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				64.1								
HCM 2010 LOS				E								

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Private Driveway

Queues

Phase 2-2031 Forecasted PM



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL2	SBT	NWL	NWR
Lane Group Flow (vph)	434	428	192	186	726	217	2069	719	1521
v/c Ratio	1.88	1.05	1.10	0.52	0.61	1.43	0.68	3.34	1.40
Control Delay	439.3	85.7	139.3	18.4	38.7	267.8	27.8	1084.4	214.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	439.3	85.7	139.3	18.4	38.7	267.8	27.8	1084.4	214.9
Queue Length 50th (ft)	~454	~232	~152	27	268	~246	381	~1070	~908
Queue Length 95th (ft)	#574	#249	#286	13	334	#386	423	#845	#986
Internal Link Dist (ft)		165		155	240		599	179	
Turn Bay Length (ft)						160			
Base Capacity (vph)	231	408	174	358	1195	152	3033	215	1088
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.88	1.05	1.10	0.52	0.61	1.43	0.68	3.34	1.40

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Private Driveway

HCM Signalized Intersection Capacity Analysis

Phase 2-2031 Forecasted PM

Movement	EBL	EBT	EBR2	WBL	WBT	WBR	NBT	SBL2	SBT	SBR	NWL	NWR
Lane Configurations												
Traffic Volume (vph)	356	42	322	182	18	104	668	187	1764	115	446	1145
Future Volume (vph)	356	42	322	182	18	104	668	187	1764	115	446	1145
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		5.5	7.0	5.5		7.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		0.95	1.00	0.86		1.00	0.88
Frbp, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.87		1.00	0.88		1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1804	1631		1787	1616		3574	1805	6386		1805	2842
Flt Permitted	0.42	1.00		0.22	1.00		1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	799	1631		407	1616		3574	1805	6386		1805	2842
Peak-hour factor, PHF	0.82	0.72	0.87	0.95	0.55	0.68	0.92	0.86	0.93	0.67	0.62	0.86
Adj. Flow (vph)	434	58	370	192	33	153	726	217	1897	172	719	1331
RTOR Reduction (vph)	0	177	0	0	129	0	0	0	11	0	0	137
Lane Group Flow (vph)	434	251	0	192	57	0	726	217	2058	0	719	1384
Confl. Peds. (#/hr)	2		1	1		2				10	10	
Confl. Bikes (#/hr)			1			2				1		
Heavy Vehicles (%)	0%	0%	0%	1%	0%	2%	1%	0%	1%	0%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA		NA	Prot	NA		Prot	Prot
Protected Phases	7	4		3	8		2!	1	6		5	2!
Permitted Phases	4			8								
Actuated Green, G (s)	27.0	18.5		27.0	18.5		43.5	11.0	61.5		15.5	43.5
Effective Green, g (s)	27.0	18.5		27.0	18.5		43.5	11.0	61.5		15.5	43.5
Actuated g/C Ratio	0.21	0.14		0.21	0.14		0.33	0.08	0.47		0.12	0.33
Clearance Time (s)	6.5	6.5		6.5	6.5		5.5	7.0	5.5		7.5	5.5
Vehicle Extension (s)	1.0	3.0		3.0	3.0		3.0	2.0	2.0		3.0	3.0
Lane Grp Cap (vph)	231	232		174	229		1195	152	3021		215	950
v/s Ratio Prot	c0.12	0.15		0.07	0.04		0.20	c0.12	0.32		c0.40	c0.49
v/s Ratio Perm	c0.27			0.16								
v/c Ratio	1.88	1.08		1.10	0.25		0.61	1.43	0.68		3.34	1.46
Uniform Delay, d1	50.4	55.8		49.1	49.6		36.1	59.5	26.6		57.2	43.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	411.5	83.0		98.6	2.6		2.3	226.1	1.3		1066.7	211.4
Delay (s)	461.9	138.8		147.7	52.2		38.4	285.6	27.9		1123.9	254.7
Level of Service	F	F		F	D		D	F	C		F	F
Approach Delay (s)		301.4			100.7		38.4		52.4		533.7	
Approach LOS		F			F		D		D		F	

Intersection Summary		
HCM 2000 Control Delay	252.8	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	1.87	F
Actuated Cycle Length (s)	130.0	Sum of lost time (s)
Intersection Capacity Utilization	155.9%	33.0
Analysis Period (min)	15	ICU Level of Service
		H

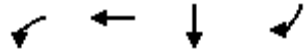
! Phase conflict between lane groups.
 c Critical Lane Group

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Private Driveway
 HCM Signalized Intersection Capacity Analysis

Phase 2-2031 Forecasted PM



Movement	NWR2
Lane Configurations	
Traffic Volume (vph)	114
Future Volume (vph)	114
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frbp, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.60
Adj. Flow (vph)	190
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	2
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



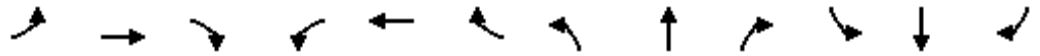
Lane Group	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	733	1523	1699	395
v/c Ratio	0.91	0.95	0.73	0.25
Control Delay	13.3	14.0	39.6	0.4
Queue Delay	0.2	0.0	0.2	0.0
Total Delay	13.5	14.1	39.8	0.4
Queue Length 50th (ft)	612	638	373	0
Queue Length 95th (ft)	m26	m26	405	0
Internal Link Dist (ft)		23	453	
Turn Bay Length (ft)				
Base Capacity (vph)	803	1607	2325	1595
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	2	1	134	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.92	0.95	0.78	0.25

Intersection Summary

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

7: S Lamar Blvd & Capity of Texas Hwy
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↗						↑↑↑↑	↗
Traffic Volume (vph)	0	0	0	724	1140	0	0	0	0	0	1495	359
Future Volume (vph)	0	0	0	724	1140	0	0	0	0	0	1495	359
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0	6.0						6.0	4.0
Lane Util. Factor				0.91	0.91						0.86	1.00
Frbp, ped/bikes				1.00	1.00						1.00	0.99
Flpb, ped/bikes				1.00	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1626	3377						6408	1595
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1626	3377						6408	1595
Peak-hour factor, PHF	0.92	0.92	0.92	0.82	0.83	0.92	0.92	0.92	0.92	0.92	0.88	0.91
Adj. Flow (vph)	0	0	0	883	1373	0	0	0	0	0	1699	395
RTOR Reduction (vph)	0	0	0	56	56	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	677	1467	0	0	0	0	0	1699	395
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	2%	2%	1%	2%	0%	2%	2%	2%	2%	2%	0%
Turn Type				custom	NA						NA	Free
Protected Phases				1 2 4 8	1 2 4 8						5 6 7	
Permitted Phases				3	3							Free
Actuated Green, G (s)				63.0	63.0						56.0	135.0
Effective Green, g (s)				63.0	63.0						56.0	135.0
Actuated g/C Ratio				0.47	0.47						0.41	1.00
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)				831	1726						2658	1595
v/s Ratio Prot				0.37	c0.39						c0.27	
v/s Ratio Perm				0.04	0.04							0.25
v/c Ratio				0.81	0.85						0.64	0.25
Uniform Delay, d1				31.0	31.8						31.5	0.0
Progression Factor				0.43	0.43						1.00	1.00
Incremental Delay, d2				0.6	0.4						1.2	0.4
Delay (s)				13.8	14.1						32.6	0.4
Level of Service				B	B						C	A
Approach Delay (s)		0.0			14.0			0.0			26.6	
Approach LOS		A			B			A			C	
Intersection Summary												
HCM 2000 Control Delay			20.0									C
HCM 2000 Volume to Capacity ratio			0.99									
Actuated Cycle Length (s)			135.0							40.0		
Intersection Capacity Utilization			88.4%									E
Analysis Period (min)			15									
c Critical Lane Group												















Lane Group	WBT	NBL	NBT
Lane Group Flow (vph)	1762	397	1254
v/c Ratio	1.61	0.41	0.42
Control Delay	312.0	5.6	6.4
Queue Delay	1.5	1.7	0.7
Total Delay	313.5	7.2	7.1
Queue Length 50th (ft)	~817	0	5
Queue Length 95th (ft)	#893	m15	m18
Internal Link Dist (ft)	133		295
Turn Bay Length (ft)			
Base Capacity (vph)	1092	974	3001
Starvation Cap Reductn	0	397	1292
Spillback Cap Reductn	274	65	97
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	2.15	0.69	0.73

Intersection Summary

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

8: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↑	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1568	0	428	1027	0	0	0	0
Future Volume (vph)	0	0	0	0	1568	0	428	1027	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0		6.0	6.0				
Lane Util. Factor					0.91		0.86	0.86				
Frt					1.00		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					5085		1537	4873				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					5085		1537	4873				
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.89	0.89	0.82	0.91	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1762	0	522	1129	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	40	40	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1762	0	357	1214	0	0	0	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	0%	2%	2%	2%	2%
Turn Type					NA		custom	NA				
Protected Phases					1 7 8		2 3 4 5	2 3 4 5				
Permitted Phases							6	6				
Actuated Green, G (s)					32.0		85.0	85.0				
Effective Green, g (s)					30.0		83.0	83.0				
Actuated g/C Ratio					0.22		0.61	0.61				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)					1130		1013	3212				
v/s Ratio Prot					c0.35		0.11	c0.12				
v/s Ratio Perm							0.12	0.13				
v/c Ratio					1.56		0.35	0.38				
Uniform Delay, d1					52.5		12.8	13.0				
Progression Factor					0.87		0.71	0.64				
Incremental Delay, d2					255.9		0.0	0.0				
Delay (s)					301.5		9.1	8.3				
Level of Service					F		A	A				
Approach Delay (s)		0.0			301.5			8.5			0.0	
Approach LOS		A			F			A			A	
Intersection Summary												
HCM 2000 Control Delay			159.8				HCM 2000 Level of Service		F			
HCM 2000 Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			135.0				Sum of lost time (s)		40.0			
Intersection Capacity Utilization			86.3%				ICU Level of Service		E			
Analysis Period (min)			15									
c Critical Lane Group												















Lane Group	EBT	SBL	SBT
Lane Group Flow (vph)	1582	589	1837
v/c Ratio	1.33	0.58	0.58
Control Delay	194.2	6.3	6.3
Queue Delay	0.3	0.7	0.3
Total Delay	194.5	7.1	6.6
Queue Length 50th (ft)	~657	43	244
Queue Length 95th (ft)	#742	m201	m535
Internal Link Dist (ft)	69		291
Turn Bay Length (ft)			
Base Capacity (vph)	1191	1018	3160
Starvation Cap Reductn	0	171	584
Spillback Cap Reductn	69	45	70
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.41	0.70	0.71

Intersection Summary

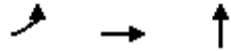
- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

9: S Lamar Blvd & Capity of Texas Hwy
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted PM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↑↑↑								↘	↑↑↑		
Traffic Volume (vph)	0	1408	0	0	0	0	0	0	0	786	1395	0	
Future Volume (vph)	0	1408	0	0	0	0	0	0	0	786	1395	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		2.0								6.0	6.0		
Lane Util. Factor		0.91								0.86	0.86		
Frbp, ped/bikes		1.00								1.00	1.00		
Flpb, ped/bikes		1.00								1.00	1.00		
Frt		1.00								1.00	1.00		
Flt Protected		1.00								0.95	0.99		
Satd. Flow (prot)		5187								1522	4846		
Flt Permitted		1.00								0.95	0.99		
Satd. Flow (perm)		5187								1522	4846		
Peak-hour factor, PHF	0.92	0.89	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.88	0.91	0.92	
Adj. Flow (vph)	0	1582	0	0	0	0	0	0	0	893	1533	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	37	37	0	
Lane Group Flow (vph)	0	1582	0	0	0	0	0	0	0	552	1800	0	
Confl. Bikes (#/hr)			1										
Heavy Vehicles (%)	2%	0%	0%	2%	2%	2%	2%	2%	2%	2%	0%	0%	
Turn Type		NA								custom	NA		
Protected Phases		3 4 5								1 2 6 8	1 2 6 8		
Permitted Phases										7	7		
Actuated Green, G (s)		27.0								88.0	88.0		
Effective Green, g (s)		21.0								88.0	88.0		
Actuated g/C Ratio		0.16								0.65	0.65		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)		806								1059	3374		
v/s Ratio Prot		c0.30								0.34	c0.34		
v/s Ratio Perm										0.03	0.03		
v/c Ratio		1.96								0.52	0.53		
Uniform Delay, d1		57.0								12.4	12.5		
Progression Factor		1.00								0.64	0.66		
Incremental Delay, d2		437.8								0.1	0.0		
Delay (s)		494.8								8.1	8.3		
Level of Service		F								A	A		
Approach Delay (s)		494.8			0.0			0.0			8.2		
Approach LOS		F			A			A			A		
Intersection Summary													
HCM 2000 Control Delay			200.3		HCM 2000 Level of Service						F		
HCM 2000 Volume to Capacity ratio			0.96										
Actuated Cycle Length (s)			135.0		Sum of lost time (s)					40.0			
Intersection Capacity Utilization			67.7%		ICU Level of Service					C			
Analysis Period (min)			15										

c Critical Lane Group



Lane Group	EBL	EBT	NBT
Lane Group Flow (vph)	589	1701	1751
v/c Ratio	0.51	0.72	1.89
Control Delay	2.0	9.7	435.3
Queue Delay	17.5	48.0	0.2
Total Delay	19.5	57.7	435.4
Queue Length 50th (ft)	2	706	~675
Queue Length 95th (ft)	m0	m536	#674
Internal Link Dist (ft)		38	673
Turn Bay Length (ft)			
Base Capacity (vph)	1165	2362	926
Starvation Cap Reductn	570	848	0
Spillback Cap Reductn	2	1	29
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.99	1.12	1.95

Intersection Summary

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

10: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	582	1587	0	0	0	0	0	1096	358	0	0	0	
Future Volume (vph)	582	1587	0	0	0	0	0	1096	358	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.0	6.0						6.0					
Lane Util. Factor	0.91	0.91						0.86					
Frpb, ped/bikes	1.00	1.00						1.00					
Flpb, ped/bikes	1.00	1.00						1.00					
Frt	1.00	1.00						0.96					
Flt Protected	0.95	1.00						1.00					
Satd. Flow (prot)	1643	3419						6273					
Flt Permitted	0.95	1.00						1.00					
Satd. Flow (perm)	1643	3419						6273					
Peak-hour factor, PHF	0.89	0.97	0.92	0.92	0.92	0.92	0.92	0.83	0.83	0.92	0.92	0.92	
Adj. Flow (vph)	654	1636	0	0	0	0	0	1320	431	0	0	0	
RTOR Reduction (vph)	45	33	0	0	0	0	0	41	0	0	0	0	
Lane Group Flow (vph)	544	1668	0	0	0	0	0	1710	0	0	0	0	
Confl. Bikes (#/hr)									2				
Heavy Vehicles (%)	0%	1%	2%	2%	2%	2%	2%	0%	0%	2%	2%	2%	
Turn Type	custom	NA						NA					
Protected Phases	4 5 6 8	4 5 6 8						1 2 3					
Permitted Phases	7	7											
Actuated Green, G (s)	93.0	93.0						26.0					
Effective Green, g (s)	93.0	93.0						26.0					
Actuated g/C Ratio	0.69	0.69						0.19					
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)	1204	2507						1208					
v/s Ratio Prot	0.31	c0.45						c0.27					
v/s Ratio Perm	0.02	0.03											
v/c Ratio	0.45	0.67						1.42					
Uniform Delay, d1	9.5	12.1						54.5					
Progression Factor	0.36	1.12						1.00					
Incremental Delay, d2	0.0	0.0						191.9					
Delay (s)	3.4	13.5						246.4					
Level of Service	A	B						F					
Approach Delay (s)		10.9			0.0			246.4			0.0		
Approach LOS		B			A			F			A		
Intersection Summary													
HCM 2000 Control Delay			113.0					HCM 2000 Level of Service		F			
HCM 2000 Volume to Capacity ratio			1.07										
Actuated Cycle Length (s)			135.0					Sum of lost time (s)		40.0			
Intersection Capacity Utilization			72.4%					ICU Level of Service		C			
Analysis Period (min)			15										
c Critical Lane Group													






















Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	862	1788	31	183	220	204
v/c Ratio	3.04	3.07	0.08	0.36	0.14	0.18
Control Delay	944.3	953.6	0.4	7.8	1.3	27.0
Queue Delay	2.6	1.1	0.0	3.1	0.0	0.3
Total Delay	946.8	954.7	0.4	10.9	1.3	27.3
Queue Length 50th (ft)	~1384	~1439	0	19	4	32
Queue Length 95th (ft)	#1615	#1584	0	m19	m4	43
Internal Link Dist (ft)		364			236	206
Turn Bay Length (ft)						
Base Capacity (vph)	284	583	392	516	1609	1113
Starvation Cap Reductn	0	0	0	238	0	0
Spillback Cap Reductn	50	78	0	0	0	495
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	3.68	3.54	0.08	0.66	0.14	0.33

Intersection Summary

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

11: West Gate Blvd & US 290 WBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted PM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	0	0	1380	1017	22	329	29	0	0	96	51	
Future Volume (vph)	0	0	0	1380	1017	22	329	29	0	0	96	51	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				5.5	5.5	5.5	5.5	6.0			6.0		
Lane Util. Factor				0.91	0.91	1.00	0.91	0.91			0.91		
Frbp, ped/bikes				1.00	1.00	0.99	1.00	1.00			0.99		
Flpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00		
Frt				1.00	1.00	0.85	1.00	1.00			0.95		
Flt Protected				0.95	0.98	1.00	0.95	0.96			1.00		
Satd. Flow (prot)				1643	3371	1487	1625	3263			4775		
Flt Permitted				0.95	0.98	1.00	0.62	0.65			1.00		
Satd. Flow (perm)				1643	3371	1487	1058	2199			4775		
Peak-hour factor, PHF	0.92	0.92	0.92	0.88	0.94	0.70	0.90	0.79	0.92	0.92	0.74	0.69	
Adj. Flow (vph)	0	0	0	1568	1082	31	366	37	0	0	130	74	
RTOR Reduction (vph)	0	0	0	0	0	26	0	0	0	0	57	0	
Lane Group Flow (vph)	0	0	0	862	1788	5	183	220	0	0	147	0	
Confl. Peds. (#/hr)							2					2	
Confl. Bikes (#/hr)						2							
Heavy Vehicles (%)	2%	2%	2%	0%	1%	7%	1%	5%	2%	2%	0%	6%	
Turn Type				Perm	NA	Perm	custom	NA				NA	
Protected Phases					4 5			1 2 6 7				1 2	
Permitted Phases				4 5		4 5	6 7						
Actuated Green, G (s)				22.0	22.0	22.0	61.8	96.5				29.2	
Effective Green, g (s)				22.0	22.0	22.0	61.8	85.5				29.2	
Actuated g/C Ratio				0.17	0.17	0.17	0.48	0.66				0.22	
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				278	570	251	502	1446				1072	
v/s Ratio Prot												0.03	
v/s Ratio Perm				0.52	0.53	0.00	c0.17	c0.10					
v/c Ratio				3.10	3.14	0.02	0.36	0.15				0.14	
Uniform Delay, d1				54.0	54.0	45.0	21.6	8.5				40.3	
Progression Factor				1.00	1.00	1.00	0.33	0.24				1.00	
Incremental Delay, d2				954.8	966.2	0.2	0.1	0.0				0.0	
Delay (s)				1008.8	1020.2	45.2	7.2	2.0				40.3	
Level of Service				F	F	D	A	A				D	
Approach Delay (s)		0.0			1005.3			4.4				40.3	
Approach LOS		A			F			A				D	
Intersection Summary													
HCM 2000 Control Delay			822.7		HCM 2000 Level of Service							F	
HCM 2000 Volume to Capacity ratio			1.00										
Actuated Cycle Length (s)			130.0		Sum of lost time (s)						34.0		
Intersection Capacity Utilization			106.6%		ICU Level of Service						G		
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	37	1097	712	332	135	1588
v/c Ratio	0.05	0.81	1.04	0.67	0.25	0.85
Control Delay	24.3	40.3	87.1	15.9	59.7	35.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	48.4
Total Delay	24.3	40.3	87.1	15.9	59.7	84.4
Queue Length 50th (ft)	19	419	~296	31	89	403
Queue Length 95th (ft)	31	449	#430	105	m36	m4
Internal Link Dist (ft)		52	369			236
Turn Bay Length (ft)						
Base Capacity (vph)	699	1329	682	493	531	1869
Starvation Cap Reductn	0	0	0	0	0	805
Spillback Cap Reductn	1	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.83	1.04	0.67	0.25	1.49

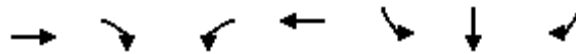
Intersection Summary

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

12: West Gate Blvd & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	25	648	291	0	0	0	0	345	552	111	1397	0	
Future Volume (vph)	25	648	291	0	0	0	0	345	552	111	1397	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.0	6.0						6.0	6.0	5.5	5.5		
Lane Util. Factor	1.00	0.95						0.91	0.91	1.00	0.95		
Frbp, ped/bikes	1.00	1.00						0.99	0.99	1.00	1.00		
Flpb, ped/bikes	1.00	1.00						1.00	1.00	1.00	1.00		
Frt	1.00	0.96						0.93	0.85	1.00	1.00		
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1805	3407						3161	1433	1805	3610		
Flt Permitted	0.95	1.00						1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1805	3407						3161	1433	1805	3610		
Peak-hour factor, PHF	0.67	0.83	0.92	0.92	0.92	0.92	0.92	0.91	0.83	0.82	0.88	0.92	
Adj. Flow (vph)	37	781	316	0	0	0	0	379	665	135	1588	0	
RTOR Reduction (vph)	0	10	0	0	0	0	0	122	239	0	0	0	
Lane Group Flow (vph)	37	1087	0	0	0	0	0	590	93	135	1588	0	
Confl. Peds. (#/hr)			1						1	1			
Confl. Bikes (#/hr)			1						1				
Heavy Vehicles (%)	0%	1%	1%	2%	2%	2%	2%	1%	1%	0%	0%	0%	
Turn Type	Split	NA						NA	Perm	Prot	NA		
Protected Phases	1 7	1 7						5 6		2 4	2 4 5 6		
Permitted Phases									5 6				
Actuated Green, G (s)	51.2	51.2						23.5	23.5	38.3	67.3		
Effective Green, g (s)	45.7	45.7						23.5	23.5	38.3	61.3		
Actuated g/C Ratio	0.35	0.35						0.18	0.18	0.29	0.47		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)	634	1197						571	259	531	1702		
v/s Ratio Prot	0.02	c0.32						c0.19		0.07	c0.44		
v/s Ratio Perm									0.06				
v/c Ratio	0.06	0.91						1.03	0.36	0.25	0.93		
Uniform Delay, d1	27.9	40.1						53.2	46.6	35.0	32.4		
Progression Factor	1.00	1.00						1.00	1.00	1.67	1.28		
Incremental Delay, d2	0.0	9.8						46.5	3.8	0.1	1.3		
Delay (s)	27.9	50.0						99.7	50.5	58.3	42.8		
Level of Service	C	D						F	D	E	D		
Approach Delay (s)		49.2			0.0			84.1			44.0		
Approach LOS		D			A			F			D		
Intersection Summary													
HCM 2000 Control Delay			56.2									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			1.09										
Actuated Cycle Length (s)			130.0									Sum of lost time (s)	34.0
Intersection Capacity Utilization			106.6%									ICU Level of Service	G
Analysis Period (min)			15										
c	Critical Lane Group												



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	3411	1749	296	3246	378	392	371
v/c Ratio	1.05	0.62	1.35	0.82	1.44	1.45	0.23
Control Delay	63.0	1.0	212.3	20.2	268.9	271.9	0.3
Queue Delay	22.1	0.0	0.0	3.0	0.0	0.0	0.0
Total Delay	85.1	1.0	212.3	23.2	268.9	271.9	0.3
Queue Length 50th (ft)	~1598	0	~413	1458	~635	~660	0
Queue Length 95th (ft)	#1639	0	m#433	m1143	#815	#868	0
Internal Link Dist (ft)	834			1419		192	
Turn Bay Length (ft)			950				
Base Capacity (vph)	3252	2814	220	3966	262	270	1595
Starvation Cap Reductn	0	0	0	604	0	0	0
Spillback Cap Reductn	672	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.32	0.62	1.35	0.97	1.44	1.45	0.23

Intersection Summary

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

13: Capital of Texas Hwy & Mopac SBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑↑	↑	↑↑↑					↑	↑	↑
Traffic Volume (vph)	0	3275	1644	234	3116	0	0	0	0	391	277	286
Future Volume (vph)	0	3275	1644	234	3116	0	0	0	0	391	277	286
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	4.0	7.0	7.0					6.5	6.5	4.0
Lane Util. Factor		0.91	0.88	1.00	0.91					0.95	0.95	1.00
Frbp, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	0.99
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		5136	2814	1787	5136					1715	1773	1595
Flt Permitted		1.00	1.00	0.03	1.00					0.95	0.99	1.00
Satd. Flow (perm)		5136	2814	62	5136					1715	1773	1595
Peak-hour factor, PHF	0.92	0.96	0.94	0.79	0.96	0.92	0.92	0.92	0.92	0.86	0.88	0.77
Adj. Flow (vph)	0	3411	1749	296	3246	0	0	0	0	455	315	371
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	3411	1749	296	3246	0	0	0	0	378	392	371
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	1%	1%	1%	1%	2%	2%	2%	2%	0%	1%	0%
Turn Type		NA	Free	pm+pt	NA					Perm	NA	Free
Protected Phases		2		1	6						8	
Permitted Phases			Free	6						8		Free
Actuated Green, G (s)		114.0	180.0	139.0	139.0					27.5	27.5	180.0
Effective Green, g (s)		114.0	180.0	139.0	139.0					27.5	27.5	180.0
Actuated g/C Ratio		0.63	1.00	0.77	0.77					0.15	0.15	1.00
Clearance Time (s)		7.0		7.0	7.0					6.5	6.5	
Vehicle Extension (s)		4.0		2.0	4.0					2.0	2.0	
Lane Grp Cap (vph)		3252	2814	220	3966					262	270	1595
v/s Ratio Prot		0.66		c0.13	0.63							
v/s Ratio Perm			0.62	c0.90						0.22	0.22	0.23
v/c Ratio		1.05	0.62	1.35	0.82					1.44	1.45	0.23
Uniform Delay, d1		33.0	0.0	71.1	12.7					76.2	76.2	0.0
Progression Factor		1.00	1.00	1.16	1.52					1.00	1.00	1.00
Incremental Delay, d2		30.6	1.0	163.0	0.5					219.6	222.9	0.3
Delay (s)		63.6	1.0	245.2	19.8					295.8	299.1	0.3
Level of Service		E	A	F	B					F	F	A
Approach Delay (s)		42.4			38.6			0.0			200.9	
Approach LOS		D			D			A			F	
Intersection Summary												
HCM 2000 Control Delay			59.4			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			1.38									
Actuated Cycle Length (s)			180.0			Sum of lost time (s)				20.5		
Intersection Capacity Utilization			129.1%			ICU Level of Service				H		
Analysis Period (min)			15									

c Critical Lane Group






















Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	432	3593	2343	2689	1220	130	482
v/c Ratio	1.20	1.40	0.92	1.68	1.15	0.33	1.27
Control Delay	142.5	203.7	35.1	327.9	139.5	63.3	185.0
Queue Delay	0.0	0.0	0.8	0.0	0.0	0.0	0.0
Total Delay	142.5	203.7	35.9	327.9	139.5	63.3	185.0
Queue Length 50th (ft)	~579	~2972	808	~2775	~598	132	~648
Queue Length 95th (ft)	m#508	m#2627	m499	m#1385	#641	198	#762
Internal Link Dist (ft)		1419	756			675	
Turn Bay Length (ft)					300		
Base Capacity (vph)	359	2561	2596	1599	1060	395	381
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	78	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.20	1.40	0.93	1.68	1.15	0.33	1.27

Intersection Summary

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

14: Mopac NBFR & Capital of Texas Hwy
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	380	3377	0	0	2296	2474	1049	114	395	0	0	0
Future Volume (veh/h)	380	3377	0	0	2296	2474	1049	114	395	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1881	0	0	1881	1881	1900	1900	1881			
Adj Flow Rate, veh/h	432	3593	0	0	2343	0	1220	130	0			
Adj No. of Lanes	1	2	0	0	3	1	3	1	1			
Peak Hour Factor	0.88	0.94	0.92	0.92	0.98	0.92	0.86	0.88	0.82			
Percent Heavy Veh, %	2	1	0	0	1	1	0	0	1			
Cap, veh/h	398	2562	0	0	2458	765	1063	396	333			
Arrive On Green	0.26	0.95	0.00	0.00	0.48	0.00	0.21	0.21	0.00			
Sat Flow, veh/h	1774	3668	0	0	5305	1599	5103	1900	1599			
Grp Volume(v), veh/h	432	3593	0	0	2343	0	1220	130	0			
Grp Sat Flow(s),veh/h/ln	1774	1787	0	0	1712	1599	1701	1900	1599			
Q Serve(g_s), s	35.8	129.0	0.0	0.0	78.7	0.0	37.5	10.5	0.0			
Cycle Q Clear(g_c), s	35.8	129.0	0.0	0.0	78.7	0.0	37.5	10.5	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	398	2562	0	0	2458	765	1063	396	333			
V/C Ratio(X)	1.09	1.40	0.00	0.00	0.95	0.00	1.15	0.33	0.00			
Avail Cap(c_a), veh/h	398	2562	0	0	2596	808	1063	396	333			
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	0.00	1.00	1.00	0.00			
Uniform Delay (d), s/veh	64.1	4.2	0.0	0.0	45.0	0.0	71.3	60.5	0.0			
Incr Delay (d2), s/veh	43.3	181.4	0.0	0.0	8.7	0.0	77.7	0.2	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			
%ile BackOfQ(50%),veh/ln	24.5	118.6	0.0	0.0	39.1	0.0	25.3	5.5	0.0			
LnGrp Delay(d),s/veh	107.4	185.6	0.0	0.0	53.6	0.0	148.9	60.7	0.0			
LnGrp LOS	F	F			D		F	E				
Approach Vol, veh/h		4025			2343			1350				
Approach Delay, s/veh		177.2			53.6			140.4				
Approach LOS		F			D			F				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		136.0		44.0	42.8	93.2						
Change Period (Y+Rc), s		7.0		6.5	7.0	7.0						
Max Green Setting (Gmax), s		129.0		37.5	31.0	91.0						
Max Q Clear Time (g_c+11), s		131.0		39.5	37.8	80.7						
Green Ext Time (p_c), s		0.0		0.0	0.0	5.4						
Intersection Summary												
HCM 2010 Ctrl Delay				133.3								
HCM 2010 LOS				F								



Lane Group	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	334	4884	67	423	6472
v/c Ratio	0.62	1.29	0.06	1.24	1.71
Control Delay	72.9	155.9	2.2	176.4	341.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	72.9	155.9	2.2	176.4	341.1
Queue Length 50th (ft)	209	~2675	4	~617	~4116
Queue Length 95th (ft)	227	#2651	8	m#470	m#3130
Internal Link Dist (ft)		1281			1273
Turn Bay Length (ft)			430	550	
Base Capacity (vph)	536	3794	1161	340	3794
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.62	1.29	0.06	1.24	1.71

Intersection Summary

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

15: Capital of Texas Hwy & Barton Creek Plaza Driveway
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↔↔	↑↑↑	↗	↘	↑↑↑
Traffic Volume (vph)	0	257	4542	43	326	6148
Future Volume (vph)	0	257	4542	43	326	6148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	7.0	7.0	6.0	7.0
Lane Util. Factor		0.88	0.91	1.00	1.00	0.91
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		2842	5136	1553	1805	5136
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		2842	5136	1553	1805	5136
Peak-hour factor, PHF	0.92	0.77	0.93	0.64	0.77	0.95
Adj. Flow (vph)	0	334	4884	67	423	6472
RTOR Reduction (vph)	0	0	0	14	0	0
Lane Group Flow (vph)	0	334	4884	53	423	6472
Heavy Vehicles (%)	2%	0%	1%	4%	0%	1%
Turn Type		Over	NA	Prot	Prot	NA
Protected Phases		5	6	6	5	6
Permitted Phases						
Actuated Green, G (s)		34.0	133.0	133.0	34.0	133.0
Effective Green, g (s)		34.0	133.0	133.0	34.0	133.0
Actuated g/C Ratio		0.19	0.74	0.74	0.19	0.74
Clearance Time (s)		6.0	7.0	7.0	6.0	7.0
Vehicle Extension (s)		2.0	4.0	4.0	2.0	4.0
Lane Grp Cap (vph)		536	3794	1147	340	3794
v/s Ratio Prot		0.12	0.95	0.03	c0.23	c1.26
v/s Ratio Perm						
v/c Ratio		0.62	1.29	0.05	1.24	1.71
Uniform Delay, d1		67.1	23.5	6.4	73.0	23.5
Progression Factor		1.00	1.00	1.00	0.93	1.03
Incremental Delay, d2		1.6	131.4	0.1	123.5	318.3
Delay (s)		68.7	154.9	6.4	191.3	342.5
Level of Service		E	F	A	F	F
Approach Delay (s)	68.7		152.9			333.2
Approach LOS	E		F			F
Intersection Summary						
HCM 2000 Control Delay			252.7		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.61			
Actuated Cycle Length (s)			180.0		Sum of lost time (s)	13.0
Intersection Capacity Utilization			124.6%		ICU Level of Service	H
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	145	1342	128	151	522	100
v/c Ratio	0.16	0.68	0.69	0.24	1.20	0.22
Control Delay	14.9	22.8	42.9	15.8	152.9	6.6
Queue Delay	0.1	0.0	0.0	1.4	1.1	0.0
Total Delay	15.0	22.8	42.9	17.2	154.0	6.6
Queue Length 50th (ft)	59	410	48	56	~558	0
Queue Length 95th (ft)	m92	m477	m46	m69	#767	18
Internal Link Dist (ft)		522		175	200	
Turn Bay Length (ft)			70			90
Base Capacity (vph)	925	1986	190	635	436	445
Starvation Cap Reductn	0	0	0	327	0	0
Spillback Cap Reductn	287	0	0	0	48	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.68	0.67	0.49	1.35	0.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.



















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

Queue shown is maximum after two cycles.

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

16: US 290 WBFR & Victory Drive
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted PM

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (vph)	0	0	0	141	1132	129	73	119	0	0	465	75		
Future Volume (vph)	0	0	0	141	1132	129	73	119	0	0	465	75		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)				5.5	5.5		5.5	4.5			4.5	4.5		
Lane Util. Factor				1.00	0.95		1.00	1.00			1.00	1.00		
Frbp, ped/bikes				1.00	1.00		1.00	1.00			1.00	0.98		
Flpb, ped/bikes				1.00	1.00		1.00	1.00			1.00	1.00		
Frt				1.00	0.98		1.00	1.00			1.00	0.85		
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00		
Satd. Flow (prot)				1612	3449		1805	1827			1792	1476		
Flt Permitted				0.95	1.00		0.14	1.00			1.00	1.00		
Satd. Flow (perm)				1612	3449		268	1827			1792	1476		
Peak-hour factor, PHF	0.92	0.92	0.92	0.97	0.95	0.86	0.57	0.79	0.92	0.92	0.89	0.75		
Adj. Flow (vph)	0	0	0	145	1192	150	128	151	0	0	522	100		
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	0	0	0	76		
Lane Group Flow (vph)	0	0	0	145	1335	0	128	151	0	0	522	24		
Confl. Peds. (#/hr)						1	6					6		
Confl. Bikes (#/hr)												3		
Heavy Vehicles (%)	2%	2%	2%	12%	2%	8%	0%	4%	2%	2%	6%	7%		
Turn Type				Split	NA		pm+pt	NA			NA	Perm		
Protected Phases				7 8	7 8		2	1 2 6			1 6			
Permitted Phases							1 2 6					1 6		
Actuated Green, G (s)				77.0	77.0		42.0	47.5			32.9	32.9		
Effective Green, g (s)				77.0	77.0		37.5	42.0			32.9	32.9		
Actuated g/C Ratio				0.57	0.57		0.28	0.31			0.24	0.24		
Clearance Time (s)							5.5							
Vehicle Extension (s)							1.5							
Lane Grp Cap (vph)				919	1967		178	568			436	359		
v/s Ratio Prot				0.09	c0.39		c0.05	0.08			c0.29			
v/s Ratio Perm							0.15					0.02		
v/c Ratio				0.16	0.68		0.72	0.27			1.20	0.07		
Uniform Delay, d1				13.7	20.3		40.3	34.9			51.0	39.3		
Progression Factor				1.06	1.05		0.76	0.48			1.00	1.00		
Incremental Delay, d2				0.0	0.7		10.0	0.1			109.1	0.0		
Delay (s)				14.6	22.0		40.6	16.9			160.2	39.3		
Level of Service				B	C		D	B			F	D		
Approach Delay (s)		0.0			21.3			27.7			140.8			
Approach LOS		A			C			C			F			
Intersection Summary														
HCM 2000 Control Delay			53.2									HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio			0.90											
Actuated Cycle Length (s)			135.0							26.0				
Intersection Capacity Utilization			114.5%										ICU Level of Service	H
Analysis Period (min)			15											
c Critical Lane Group														
























Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	2240	159	129	521	155
v/c Ratio	1.10	0.24	0.23	0.89	0.17
Control Delay	92.8	32.2	15.8	27.2	3.6
Queue Delay	0.0	0.0	0.0	3.5	1.9
Total Delay	92.8	32.2	15.8	30.6	5.5
Queue Length 50th (ft)	~832	98	35	243	14
Queue Length 95th (ft)	m#757	136	72	m171	m14
Internal Link Dist (ft)	53	253			175
Turn Bay Length (ft)			125	70	
Base Capacity (vph)	2031	661	556	588	911
Starvation Cap Reductn	0	0	0	28	615
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.10	0.24	0.23	0.93	0.52

Intersection Summary

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

17: Pack Saddle Pass & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted PM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  							 	 			
Traffic Volume (vph)	66	1932	82	0	0	0	0	127	106	453	138	0	
Future Volume (vph)	66	1932	82	0	0	0	0	127	106	453	138	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.0						4.5	4.5	5.5	4.5		
Lane Util. Factor		0.91						1.00	1.00	1.00	1.00		
Frbp, ped/bikes		1.00						1.00	1.00	1.00	1.00		
Flpb, ped/bikes		1.00						1.00	1.00	1.00	1.00		
Frt		0.99						1.00	0.85	1.00	1.00		
Flt Protected		1.00						1.00	1.00	0.95	1.00		
Satd. Flow (prot)		5071						1900	1468	1719	1759		
Flt Permitted		1.00						1.00	1.00	0.59	1.00		
Satd. Flow (perm)		5071						1900	1468	1063	1759		
Peak-hour factor, PHF	0.81	0.94	0.79	0.92	0.92	0.92	0.92	0.80	0.82	0.87	0.89	0.92	
Adj. Flow (vph)	81	2055	104	0	0	0	0	159	129	521	155	0	
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	48	0	0	0	
Lane Group Flow (vph)	0	2236	0	0	0	0	0	159	81	521	155	0	
Confl. Bikes (#/hr)			3						1				
Heavy Vehicles (%)	10%	1%	0%	2%	2%	2%	2%	0%	10%	5%	8%	2%	
Turn Type	Split	NA						NA	Prot	D.P+P	NA		
Protected Phases	8	8						1 2 6	1 2 6	7	1 2 6 7		
Permitted Phases										1 2 6			
Actuated Green, G (s)		54.0						47.5	47.5	65.0	69.5		
Effective Green, g (s)		54.0						42.0	42.0	60.5	64.0		
Actuated g/C Ratio		0.40						0.31	0.31	0.45	0.47		
Clearance Time (s)		6.0								5.5			
Vehicle Extension (s)		1.5								1.5			
Lane Grp Cap (vph)		2028						591	456	561	833		
v/s Ratio Prot		c0.44						0.08	0.06	c0.12	0.09		
v/s Ratio Perm										c0.30			
v/c Ratio		1.10						0.27	0.18	0.93	0.19		
Uniform Delay, d1		40.5						35.0	33.9	36.0	20.5		
Progression Factor		1.13						1.00	1.00	0.61	0.20		
Incremental Delay, d2		50.2						0.1	0.1	8.7	0.0		
Delay (s)		96.1						35.0	34.0	30.6	4.2		
Level of Service		F						D	C	C	A		
Approach Delay (s)		96.1			0.0			34.6			24.6		
Approach LOS		F			A			C			C		
Intersection Summary													
HCM 2000 Control Delay			75.5									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			1.06										
Actuated Cycle Length (s)			135.0									Sum of lost time (s)	26.0
Intersection Capacity Utilization			114.5%									ICU Level of Service	H
Analysis Period (min)			15										

c Critical Lane Group






















Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	572	1174	587	400	696	1354
v/c Ratio	1.32	1.31	0.93	0.63	0.30	1.00
Control Delay	202.4	188.7	49.8	13.8	5.2	77.3
Queue Delay	0.2	0.1	0.0	30.3	3.2	0.0
Total Delay	202.6	188.8	49.8	44.1	8.5	77.3
Queue Length 50th (ft)	~792	~807	334	71	51	481
Queue Length 95th (ft)	#1052	#953	#576	m70	m50	#594
Internal Link Dist (ft)		53			174	314
Turn Bay Length (ft)						
Base Capacity (vph)	433	899	633	637	2358	1357
Starvation Cap Reductn	0	0	0	247	1532	0
Spillback Cap Reductn	7	15	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.34	1.33	0.93	1.03	0.84	1.00

Intersection Summary

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

18: US 290 WBFR & Menchaca Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	868	774	569	340	633	0	0	1088	171
Future Volume (vph)	0	0	0	868	774	569	340	633	0	0	1088	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0	6.0	6.0	6.0	5.0			5.0	
Lane Util. Factor				0.91	0.91	1.00	1.00	0.95			0.91	
Frt				1.00	1.00	0.85	1.00	1.00			0.98	
Flt Protected				0.95	0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1626	3373	1615	1805	3574			5024	
Flt Permitted				0.95	0.99	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1626	3373	1615	1805	3574			5024	
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.97	0.85	0.91	0.92	0.92	0.95	0.82
Adj. Flow (vph)	0	0	0	923	823	587	400	696	0	0	1145	209
RTOR Reduction (vph)	0	0	0	0	0	201	0	0	0	0	18	0
Lane Group Flow (vph)	0	0	0	572	1174	386	400	696	0	0	1336	0
Heavy Vehicles (%)	2%	2%	2%	1%	1%	0%	0%	1%	2%	2%	1%	0%
Turn Type				Perm	NA	Perm	Prot	NA			NA	
Protected Phases					8 9		4 13	1 4 13				1
Permitted Phases				8 9		8 9						
Actuated Green, G (s)				41.0	41.0	41.0	53.0	98.0			40.0	
Effective Green, g (s)				41.0	41.0	41.0	48.0	98.0			40.0	
Actuated g/C Ratio				0.27	0.27	0.27	0.32	0.65			0.27	
Clearance Time (s)											5.0	
Vehicle Extension (s)											1.0	
Lane Grp Cap (vph)				444	921	441	577	2335			1339	
v/s Ratio Prot							c0.22	0.19			c0.27	
v/s Ratio Perm				c0.35	0.35	0.24						
v/c Ratio				1.29	1.27	0.87	0.69	0.30			1.00	
Uniform Delay, d1				54.5	54.5	52.0	44.6	11.2			55.0	
Progression Factor				1.00	1.00	1.00	0.33	0.48			1.00	
Incremental Delay, d2				145.8	132.1	16.8	0.3	0.0			23.9	
Delay (s)				200.3	186.6	68.9	14.8	5.4			78.9	
Level of Service				F	F	E	B	A			E	
Approach Delay (s)		0.0			160.3			8.8			78.9	
Approach LOS		A			F			A			E	
Intersection Summary												
HCM 2000 Control Delay			102.6									F
HCM 2000 Volume to Capacity ratio			1.02									
Actuated Cycle Length (s)			150.0						27.0			
Intersection Capacity Utilization			120.9%									H
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	260	577	479	1265	598	1583
v/c Ratio	0.94	1.05	1.51	1.15	0.64	0.57
Control Delay	103.2	112.6	279.3	126.4	5.5	0.6
Queue Delay	0.0	0.0	0.0	0.0	37.8	31.3
Total Delay	103.2	112.6	279.3	126.5	43.4	31.9
Queue Length 50th (ft)	255	~323	~577	~506	67	10
Queue Length 95th (ft)	#399	#448	#805	#606	m56	m8
Internal Link Dist (ft)		62		300		174
Turn Bay Length (ft)						
Base Capacity (vph)	276	548	317	1099	932	2763
Starvation Cap Reductn	0	0	0	0	368	1267
Spillback Cap Reductn	0	0	0	10	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.94	1.05	1.51	1.16	1.06	1.06

Intersection Summary

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

19: Menchaca Road & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Forecasted PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	224	554	441	0	0	0	0	747	397	508	1488	0	
Future Volume (vph)	224	554	441	0	0	0	0	747	397	508	1488	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.0	6.0	6.0					5.0		5.0	5.0		
Lane Util. Factor	1.00	0.95	1.00					0.91		1.00	0.95		
Frbp, ped/bikes	1.00	1.00	0.99					1.00		1.00	1.00		
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00		
Frt	1.00	1.00	0.85					0.95		1.00	1.00		
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00		
Satd. Flow (prot)	1805	3574	1593					4831		1770	3574		
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00		
Satd. Flow (perm)	1805	3574	1593					4831		1770	3574		
Peak-hour factor, PHF	0.86	0.96	0.92	0.92	0.92	0.92	0.92	0.93	0.86	0.85	0.94	0.92	
Adj. Flow (vph)	260	577	479	0	0	0	0	803	462	598	1583	0	
RTOR Reduction (vph)	0	0	74	0	0	0	0	69	0	0	0	0	
Lane Group Flow (vph)	260	577	405	0	0	0	0	1196	0	598	1583	0	
Confl. Bikes (#/hr)			1						1				
Heavy Vehicles (%)	0%	1%	0%	2%	2%	2%	2%	1%	1%	2%	1%	2%	
Turn Type	Perm	NA	Perm					NA		Prot	NA		
Protected Phases		4 8						13		1 9	1 9 13		
Permitted Phases	4 8		4 8										
Actuated Green, G (s)	23.0	23.0	23.0					32.0		79.0	116.0		
Effective Green, g (s)	23.0	23.0	23.0					32.0		79.0	116.0		
Actuated g/C Ratio	0.15	0.15	0.15					0.21		0.53	0.77		
Clearance Time (s)								5.0					
Vehicle Extension (s)								1.0					
Lane Grp Cap (vph)	276	548	244					1030		932	2763		
v/s Ratio Prot		0.16						c0.25		c0.34	0.44		
v/s Ratio Perm	0.14		c0.25										
v/c Ratio	0.94	1.05	1.66					1.16		0.64	0.57		
Uniform Delay, d1	62.8	63.5	63.5					59.0		25.4	6.9		
Progression Factor	1.00	1.00	1.00					1.00		0.20	0.07		
Incremental Delay, d2	38.3	53.1	315.1					83.4		0.1	0.0		
Delay (s)	101.1	116.6	378.6					142.4		5.2	0.5		
Level of Service	F	F	F					F		A	A		
Approach Delay (s)		208.9			0.0			142.4			1.8		
Approach LOS		F			A			F			A		
Intersection Summary													
HCM 2000 Control Delay			96.4									HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.02										
Actuated Cycle Length (s)			150.0									Sum of lost time (s)	27.0
Intersection Capacity Utilization			120.9%									ICU Level of Service	H
Analysis Period (min)			15										

c Critical Lane Group

Intersection												
Int Delay, s/veh	50.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	63	120	208	19	116	6	192	19	48	5	28	37
Future Vol, veh/h	63	120	208	19	116	6	192	19	48	5	28	37
Conflicting Peds, #/hr	14	0	9	9	0	14	6	0	11	11	0	6
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	87	87	50	76	50	80	75	60	60	56	75
Heavy Vehicles, %	0	0	7	0	0	0	5	0	0	0	0	0
Mvmt Flow	93	138	239	38	153	12	240	25	80	8	50	49

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	179	0	0	386	0	0	744	708	278	756	821	179
Stage 1	-	-	-	-	-	-	453	453	-	249	249	-
Stage 2	-	-	-	-	-	-	291	255	-	507	572	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.15	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.545	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1409	-	-	1184	-	-	327	362	766	327	312	869
Stage 1	-	-	-	-	-	-	581	573	-	759	704	-
Stage 2	-	-	-	-	-	-	710	700	-	552	508	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1390	-	-	1174	-	-	~ 237	311	751	243	268	853
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 237	311	-	243	268	-
Stage 1	-	-	-	-	-	-	525	518	-	683	670	-
Stage 2	-	-	-	-	-	-	593	666	-	423	459	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.5			1.5			155.8			17.9		
HCM LOS							F			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	288	1390	-	-	1174	-	-	386
HCM Lane V/C Ratio	1.199	0.067	-	-	0.032	-	-	0.279
HCM Control Delay (s)	155.8	7.8	0	-	8.2	0	-	17.9
HCM Lane LOS	F	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	15.5	0.2	-	-	0.1	-	-	1.1

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



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	490	638	2553	405	401	1203
v/c Ratio	0.56	1.09	1.30	0.43	2.16	0.51
Control Delay	46.1	103.1	159.7	3.4	560.2	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.1	103.1	159.7	3.4	560.2	12.4
Queue Length 50th (ft)	192	~627	~1510	25	~515	261
Queue Length 95th (ft)	250	#819	#1514	m10	#607	312
Internal Link Dist (ft)	497		121			322
Turn Bay Length (ft)		125			125	
Base Capacity (vph)	881	587	1966	935	186	2336
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.56	1.09	1.30	0.43	2.16	0.51

Intersection Summary

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

1: S Lamar Blvd & W Oltorf Street
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted AM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔	↔	↕↕	↔	↔	↕↕
Traffic Volume (vph)	441	555	2196	324	317	1167
Future Volume (vph)	441	555	2196	324	317	1167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1583	3539	1525	1770	3505
Flt Permitted	0.95	1.00	1.00	1.00	0.05	1.00
Satd. Flow (perm)	3400	1583	3539	1525	93	3505
Peak-hour factor, PHF	0.90	0.87	0.86	0.80	0.79	0.97
Adj. Flow (vph)	490	638	2553	405	401	1203
RTOR Reduction (vph)	0	1	0	88	0	0
Lane Group Flow (vph)	490	637	2553	317	401	1203
Confl. Peds. (#/hr)		4		2	2	
Confl. Bikes (#/hr)		1		5		
Heavy Vehicles (%)	3%	2%	2%	4%	2%	3%
Turn Type	Prot	pt+ov	NA	Perm	pm+pt	NA
Protected Phases	4	1 4	2		1	6
Permitted Phases		4		2	6	
Actuated Green, G (s)	35.0	50.0	75.0	75.0	90.0	90.0
Effective Green, g (s)	35.0	50.0	75.0	75.0	90.0	90.0
Actuated g/C Ratio	0.26	0.37	0.56	0.56	0.67	0.67
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	1.0		1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	881	586	1966	847	186	2336
v/s Ratio Prot	0.14	c0.40	0.72		c0.16	0.34
v/s Ratio Perm				0.21	c1.27	
v/c Ratio	0.56	1.09	1.30	0.37	2.16	0.51
Uniform Delay, d1	43.3	42.5	30.0	16.8	47.1	11.4
Progression Factor	1.00	1.00	0.70	0.31	1.00	1.00
Incremental Delay, d2	2.5	62.9	136.6	0.7	537.6	0.8
Delay (s)	45.8	105.4	157.7	6.0	584.7	12.2
Level of Service	D	F	F	A	F	B
Approach Delay (s)	79.5		136.9			155.3
Approach LOS	E		F			F

Intersection Summary			
HCM 2000 Control Delay	130.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.91		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	103.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	128	286	136	190	2395	101	49	1935
v/c Ratio	0.69	0.72	0.76	0.58	0.95	0.10	0.92	1.05
Control Delay	66.1	42.2	68.8	33.9	17.0	3.0	137.4	68.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.1	42.2	68.8	33.9	17.0	3.0	137.4	68.5
Queue Length 50th (ft)	98	153	86	109	748	8	40	~944
Queue Length 95th (ft)	123	161	143	m113	m751	m10	#71	#867
Internal Link Dist (ft)		215	74		201			588
Turn Bay Length (ft)	75			50		125	50	
Base Capacity (vph)	185	551	349	328	2533	1041	53	1849
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.52	0.39	0.58	0.95	0.10	0.92	1.05

Intersection Summary

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

2: S Lamar Blvd & Bluebonnet Lane
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗			↖		↖	↕	↗	↖	↗	
Traffic Volume (vph)	95	36	193	0	43	61	173	1964	82	30	1580	4
Future Volume (vph)	95	36	193	0	43	61	173	1964	82	30	1580	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	0.98			0.99		1.00	1.00	0.96	1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.88			0.91		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1769	1614			1718		1787	3505	1412	1703	3469	
Flt Permitted	0.28	1.00			1.00		0.05	1.00	1.00	0.06	1.00	
Satd. Flow (perm)	523	1614			1718		98	3505	1412	100	3469	
Peak-hour factor, PHF	0.74	0.71	0.82	0.87	0.86	0.71	0.91	0.82	0.81	0.61	0.82	0.50
Adj. Flow (vph)	128	51	235	0	50	86	190	2395	101	49	1927	8
RTOR Reduction (vph)	0	83	0	0	34	0	0	0	20	0	0	0
Lane Group Flow (vph)	128	203	0	0	102	0	190	2395	81	49	1935	0
Confl. Peds. (#/hr)	1		4	4			1	7		6	6	7
Confl. Bikes (#/hr)							1					1
Heavy Vehicles (%)	2%	0%	2%	3%	0%	0%	1%	3%	10%	6%	4%	0%
Turn Type	pm+pt	NA			NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4						2		2	6		
Actuated Green, G (s)	26.4	26.4			11.4		97.6	97.6	97.6	72.0	72.0	
Effective Green, g (s)	26.4	26.4			11.4		97.6	97.6	97.6	72.0	72.0	
Actuated g/C Ratio	0.20	0.20			0.08		0.72	0.72	0.72	0.53	0.53	
Clearance Time (s)	6.0	6.0			6.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0			2.0		1.0	1.0	1.0	1.0	1.0	
Lane Grp Cap (vph)	185	315			145		328	2533	1020	53	1850	
v/s Ratio Prot	0.05	c0.13			0.06		0.09	c0.68			c0.56	
v/s Ratio Perm	c0.09						0.33		0.06	0.49		
v/c Ratio	0.69	0.64			0.70		0.58	0.95	0.08	0.92	1.05	
Uniform Delay, d1	47.5	50.0			60.2		39.4	16.4	5.5	29.0	31.5	
Progression Factor	1.00	1.00			1.00		1.10	0.89	1.23	1.17	1.14	
Incremental Delay, d2	8.7	3.4			11.9		0.7	1.1	0.0	97.6	33.2	
Delay (s)	56.2	53.4			72.1		43.9	15.6	6.8	131.5	69.1	
Level of Service	E	D			E		D	B	A	F	E	
Approach Delay (s)		54.2			72.1			17.3			70.7	
Approach LOS		D			E			B			E	

Intersection Summary

HCM 2000 Control Delay	41.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	101.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	975	1976	8	528	1566
v/c Ratio	1.19	0.92	0.01	1.02	0.68
Control Delay	136.9	16.4	1.2	65.3	16.9
Queue Delay	0.0	0.8	0.0	0.0	0.2
Total Delay	136.9	17.2	1.2	65.3	17.0
Queue Length 50th (ft)	~576	679	0	~506	337
Queue Length 95th (ft)	#724	360	m0	m#476	m332
Internal Link Dist (ft)		324			498
Turn Bay Length (ft)				100	
Base Capacity (vph)	822	2159	990	516	2314
Starvation Cap Reductn	0	46	0	0	0
Spillback Cap Reductn	0	0	0	0	165
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.19	0.94	0.01	1.02	0.73

Intersection Summary

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

3: S Lamar Blvd & Menchaca Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted AM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↔↔	↕↕	↗	↘	↕↕
Traffic Volume (vph)	0	926	1482	5	449	1394
Future Volume (vph)	0	926	1482	5	449	1394
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0
Lane Util. Factor		0.88	0.95	1.00	1.00	0.95
Frbp, ped/bikes		1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		2787	3471	1589	1787	3471
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		2787	3471	1589	1787	3471
Peak-hour factor, PHF	0.92	0.95	0.75	0.60	0.85	0.89
Adj. Flow (vph)	0	975	1976	8	528	1566
RTOR Reduction (vph)	0	17	0	2	0	0
Lane Group Flow (vph)	0	958	1976	6	528	1566
Confl. Peds. (#/hr)		1		4	4	
Heavy Vehicles (%)	2%	2%	4%	0%	1%	4%
Turn Type		pt+ov	NA	Perm	Prot	NA
Protected Phases		1 4	2 3		1 4	1 2
Permitted Phases				2 3		
Actuated Green, G (s)		39.0	84.0	84.0	39.0	90.0
Effective Green, g (s)		39.0	84.0	84.0	39.0	90.0
Actuated g/C Ratio		0.29	0.62	0.62	0.29	0.67
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		805	2159	988	516	2314
v/s Ratio Prot		c0.34	c0.57		0.30	0.45
v/s Ratio Perm				0.00		
v/c Ratio		1.19	0.92	0.01	1.02	0.68
Uniform Delay, d1		48.0	22.4	9.7	48.0	13.7
Progression Factor		1.00	0.50	0.18	0.82	1.18
Incremental Delay, d2		97.7	3.9	0.0	25.8	0.4
Delay (s)		145.7	15.1	1.8	65.1	16.6
Level of Service		F	B	A	E	B
Approach Delay (s)	145.7		15.0			28.8
Approach LOS	F		B			C
Intersection Summary						
HCM 2000 Control Delay			46.0		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			1.11			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	24.0
Intersection Capacity Utilization			92.5%		ICU Level of Service	F
Analysis Period (min)			15			
c Critical Lane Group						

























Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	202	447	142	192	199	1827	62	57	1564
v/c Ratio	0.96	0.63	1.42	0.29	1.90	0.79	0.06	2.19	0.73
Control Delay	107.4	38.2	277.1	48.3	444.9	20.9	2.5	644.3	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0
Total Delay	107.4	38.2	277.1	48.3	444.9	21.9	2.5	644.3	4.7
Queue Length 50th (ft)	178	130	~168	76	~270	578	1	~79	338
Queue Length 95th (ft)	179	176	#200	100	m#291	477	m2	#99	97
Internal Link Dist (ft)		257		238		436			324
Turn Bay Length (ft)	90		100		125		160	100	
Base Capacity (vph)	210	714	100	654	105	2314	1045	26	2145
Starvation Cap Reductn	0	0	0	0	0	0	0	0	18
Spillback Cap Reductn	0	0	0	0	0	234	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.63	1.42	0.29	1.90	0.88	0.06	2.19	0.74

Intersection Summary

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

4: S Lamar Blvd & Barton Skyway/Lightsey Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	148	242	94	148	7	169	1352	58	32	1282	75
Future Volume (vph)	127	148	242	94	148	7	169	1352	58	32	1282	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.91		1.00	0.99		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1748	3225		1800	3522		1787	3471	1531	1805	3441	
Flt Permitted	0.62	1.00		0.29	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1136	3225		541	3522		1787	3471	1531	1805	3441	
Peak-hour factor, PHF	0.63	0.86	0.88	0.66	0.80	0.95	0.85	0.74	0.93	0.56	0.88	0.70
Adj. Flow (vph)	202	172	275	142	185	7	199	1827	62	57	1457	107
RTOR Reduction (vph)	0	117	0	0	2	0	0	0	21	0	4	0
Lane Group Flow (vph)	202	330	0	142	190	0	199	1827	41	57	1560	0
Confl. Peds. (#/hr)	2		4	4		2	2		4	4		2
Confl. Bikes (#/hr)			1						1			2
Heavy Vehicles (%)	3%	1%	0%	0%	1%	25%	1%	4%	4%	0%	4%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		8			8		5	5 6		7	6 7	
Permitted Phases	8			8					5 6			
Actuated Green, G (s)	25.0	25.0		25.0	25.0		8.0	90.0	90.0	2.0	84.0	
Effective Green, g (s)	25.0	25.0		25.0	25.0		8.0	90.0	90.0	2.0	84.0	
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.06	0.67	0.67	0.01	0.62	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0			6.0		
Vehicle Extension (s)	2.0	2.0		2.0	2.0		1.0			1.0		
Lane Grp Cap (vph)	210	597		100	652		105	2314	1020	26	2141	
v/s Ratio Prot		0.10			0.05		c0.11	c0.53		c0.03	0.45	
v/s Ratio Perm	0.18			c0.26					0.03			
v/c Ratio	0.96	0.55		1.42	0.29		1.90	0.79	0.04	2.19	0.73	
Uniform Delay, d1	54.5	49.9		55.0	47.4		63.5	15.8	7.7	66.5	17.6	
Progression Factor	1.00	1.00		1.00	1.00		0.87	1.23	1.95	0.70	0.17	
Incremental Delay, d2	52.9	3.7		237.4	1.1		414.5	1.0	0.0	619.4	0.8	
Delay (s)	107.5	53.6		292.4	48.5		470.0	20.4	15.0	665.9	3.7	
Level of Service	F	D		F	D		F	C	B	F	A	
Approach Delay (s)		70.3			152.2			63.1			27.0	
Approach LOS		E			F			E			C	
Intersection Summary												
HCM 2000 Control Delay			58.0				HCM 2000 Level of Service			E		
HCM 2000 Volume to Capacity ratio			1.05									
Actuated Cycle Length (s)			135.0				Sum of lost time (s)			24.0		
Intersection Capacity Utilization			99.7%				ICU Level of Service			F		
Analysis Period (min)			15									
c Critical Lane Group												






















Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	114	206	272	29	2421	259	1557
v/c Ratio	0.75	0.82	0.83	0.18	0.97	4.89	0.62
Control Delay	72.4	77.3	69.7	9.3	29.6	1785.9	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.4	77.3	69.7	9.3	29.6	1785.9	10.6
Queue Length 50th (ft)	83	174	217	7	922	~412	366
Queue Length 95th (ft)	96	178	192	15	535	m#476	m433
Internal Link Dist (ft)	270		212		208		469
Turn Bay Length (ft)		120		95		125	
Base Capacity (vph)	153	250	327	160	2505	53	2508
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.82	0.83	0.18	0.97	4.89	0.62

Intersection Summary

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

5: S Lamar Blvd & Private Driveway/Panther Trail
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	9	23	132	4	204	20	1529	168	197	1422	21
Future Volume (veh/h)	36	9	23	132	4	204	20	1529	168	197	1422	21
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1854	1900	1827	1812	1900	1900	1865	1900	1810	1843	1900
Adj Flow Rate, veh/h	64	15	35	206	7	265	29	2184	237	259	1529	28
Adj No. of Lanes	0	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.56	0.62	0.65	0.64	0.60	0.77	0.69	0.70	0.71	0.76	0.93	0.75
Percent Heavy Veh, %	0	0	8	4	0	5	0	2	1	5	3	8
Cap, veh/h	68	20	21	266	8	310	222	2321	247	66	2527	46
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.72	0.72	0.72	0.72	0.72	0.72
Sat Flow, veh/h	126	97	99	1323	39	1493	336	3230	344	137	3516	64
Grp Volume(v), veh/h	114	0	0	206	0	272	29	1179	1242	259	760	797
Grp Sat Flow(s),veh/h/ln	323	0	0	1323	0	1533	336	1771	1803	137	1751	1830
Q Serve(g_s), s	4.9	0.0	0.0	0.0	0.0	23.1	6.3	75.7	84.1	12.9	29.2	29.3
Cycle Q Clear(g_c), s	28.0	0.0	0.0	26.8	0.0	23.1	35.7	75.7	84.1	97.0	29.2	29.3
Prop In Lane	0.56		0.31	1.00		0.97	1.00		0.19	1.00		0.04
Lane Grp Cap(c), veh/h	109	0	0	266	0	318	222	1273	1295	66	1258	1315
V/C Ratio(X)	1.05	0.00	0.00	0.77	0.00	0.86	0.13	0.93	0.96	3.90	0.60	0.61
Avail Cap(c_a), veh/h	109	0	0	266	0	318	222	1273	1295	66	1258	1315
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.4	0.0	0.0	53.0	0.0	51.6	18.4	16.0	17.2	66.2	9.5	9.5
Incr Delay (d2), s/veh	100.4	0.0	0.0	19.4	0.0	24.4	1.2	12.9	16.9	1338.4	2.2	2.1
Initial Q Delay(d3),s/veh	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	0.0	0.0	9.0	0.0	11.9	0.7	40.9	47.1	27.2	14.7	15.4
LnGrp Delay(d),s/veh	162.4	0.0	0.0	72.4	0.0	75.9	19.6	28.9	34.1	1404.7	11.6	11.6
LnGrp LOS	F			E		E	B	C	C	F	B	B
Approach Vol, veh/h		114			478			2450			1816	
Approach Delay, s/veh		162.4			74.4			31.4			210.3	
Approach LOS		F			E			C			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		102.0		33.0		102.0		33.0				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		97.0		28.0		97.0		28.0				
Max Q Clear Time (g_c+I1), s		86.1		30.0		99.0		28.8				
Green Ext Time (p_c), s		6.2		0.0		0.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				105.6								
HCM 2010 LOS				F								

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Driveway B/Private Driveway
 Queues Phase 2-2031 Site+Forecasted AM



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL2	SBT	NWL	NWR
Lane Group Flow (vph)	413	265	116	147	1290	137	1444	501	1582
v/c Ratio	1.57	0.59	0.68	0.44	1.07	0.94	0.50	2.47	1.48
Control Delay	306.1	13.6	59.7	18.5	87.8	118.6	23.4	699.0	249.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	306.1	13.6	59.7	18.5	87.8	118.6	23.4	699.0	249.5
Queue Length 50th (ft)	~492	12	78	23	~632	117	229	~699	~978
Queue Length 95th (ft)	#287	2	97	30	385	#150	263	#710	#820
Internal Link Dist (ft)		165		155	240		328	179	
Turn Bay Length (ft)						160			
Base Capacity (vph)	263	446	172	335	1207	146	2887	203	1070
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.57	0.59	0.67	0.44	1.07	0.94	0.50	2.47	1.48

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Driveway B/Private Driveway
 HCM Signalized Intersection Capacity Analysis

Phase 2-2031 Site+Forecasted AM



Movement	EBL	EBT	EBR2	WBL	WBT	WBR	NBT	SBL2	SBT	SBR	NWL	NWR
Lane Configurations	↖	↗		↖	↗		↑↑	↖	↑↑↑		↖	↗
Traffic Volume (vph)	219	10	192	79	19	67	774	92	1076	154	366	1090
Future Volume (vph)	219	10	192	79	19	67	774	92	1076	154	366	1090
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		5.5	7.0	5.5		7.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		0.95	1.00	0.86		1.00	0.88
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.86		1.00	0.88		1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1804	1632		1770	1656		3610	1736	6044		1703	2790
Flt Permitted	0.54	1.00		0.22	1.00		1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	1022	1632		403	1656		3610	1736	6044		1703	2790
Peak-hour factor, PHF	0.53	0.62	0.77	0.68	0.62	0.58	0.60	0.67	0.90	0.62	0.73	0.74
Adj. Flow (vph)	413	16	249	116	31	116	1290	137	1196	248	501	1473
RTOR Reduction (vph)	0	213	0	0	99	0	0	0	29	0	0	137
Lane Group Flow (vph)	413	52	0	116	48	0	1290	137	1415	0	501	1445
Confl. Peds. (#/hr)	1						1	1		3	3	
Confl. Bikes (#/hr)							1			2		
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	4%	2%	20%	6%	2%
Turn Type	pm+pt	NA		pm+pt	NA		NA	Prot	NA		Prot	Prot
Protected Phases	7	4		3	8		2!	1	6		5	2!
Permitted Phases	4			8								
Actuated Green, G (s)	27.1	18.6		26.9	18.5		43.5	11.0	61.5		15.5	43.5
Effective Green, g (s)	27.1	18.6		26.9	18.5		43.5	11.0	61.5		15.5	43.5
Actuated g/C Ratio	0.21	0.14		0.21	0.14		0.33	0.08	0.47		0.12	0.33
Clearance Time (s)	6.5	6.5		6.5	6.5		5.5	7.0	5.5		7.5	5.5
Vehicle Extension (s)	1.0	3.0		3.0	3.0		3.0	2.0	2.0		3.0	3.0
Lane Grp Cap (vph)	264	233		171	235		1207	146	2859		203	933
v/s Ratio Prot	c0.10	0.03		0.04	0.03		0.36	c0.08	0.23		c0.29	c0.52
v/s Ratio Perm	c0.22			0.10								
v/c Ratio	1.56	0.22		0.68	0.20		1.07	0.94	0.49		2.47	1.55
Uniform Delay, d1	50.6	49.3		44.4	49.2		43.2	59.2	23.6		57.2	43.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	271.6	2.2		10.2	1.9		46.4	59.6	0.6		675.2	252.2
Delay (s)	322.3	51.5		54.6	51.2		89.7	118.8	24.2		732.4	295.5
Level of Service	F	D		D	D		F	F	C		F	F
Approach Delay (s)		216.4			52.7		89.7		32.4		400.6	
Approach LOS		F			D		F		C		F	

Intersection Summary

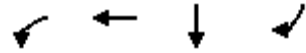
HCM 2000 Control Delay	197.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.63		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	33.0
Intersection Capacity Utilization	142.2%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group



Movement	NWR2
Lane Configurations	
Traffic Volume (vph)	60
Future Volume (vph)	60
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frbp, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.55
Adj. Flow (vph)	109
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	1
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Lane Group	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	616	2010	855	356
v/c Ratio	0.59	0.93	0.72	0.23
Control Delay	3.4	16.7	55.1	0.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.4	16.7	55.1	0.3
Queue Length 50th (ft)	4	973	206	0
Queue Length 95th (ft)	m0	m591	236	0
Internal Link Dist (ft)		23	453	
Turn Bay Length (ft)				
Base Capacity (vph)	1043	2168	1187	1564
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.59	0.93	0.72	0.23

Intersection Summary

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

7: S Lamar Blvd & Capity of Texas Hwy
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations				↖	↖↗						↑↑↑	↗	
Traffic Volume (vph)	0	0	0	575	1805	0	0	0	0	0	744	313	
Future Volume (vph)	0	0	0	575	1805	0	0	0	0	0	744	313	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				6.0	6.0						6.0	4.0	
Lane Util. Factor				0.91	0.91						0.86	1.00	
Frbp, ped/bikes				1.00	1.00						1.00	0.99	
Flpb, ped/bikes				1.00	1.00						1.00	1.00	
Frt				1.00	1.00						1.00	0.85	
Flt Protected				0.95	1.00						1.00	1.00	
Satd. Flow (prot)				1595	3383						6166	1564	
Flt Permitted				0.95	1.00						1.00	1.00	
Satd. Flow (perm)				1595	3383						6166	1564	
Peak-hour factor, PHF	0.92	0.92	0.92	0.84	0.93	0.92	0.92	0.92	0.92	0.92	0.87	0.88	
Adj. Flow (vph)	0	0	0	685	1941	0	0	0	0	0	855	356	
RTOR Reduction (vph)	0	0	0	38	38	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	578	1972	0	0	0	0	0	855	356	
Confl. Peds. (#/hr)												1	
Heavy Vehicles (%)	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	6%	2%	
Turn Type				custom	NA						NA	Free	
Protected Phases				1 2 4 8	1 2 4 8						5 6 7		
Permitted Phases				3	3							Free	
Actuated Green, G (s)				86.0	86.0						33.0	135.0	
Effective Green, g (s)				86.0	86.0						33.0	135.0	
Actuated g/C Ratio				0.64	0.64						0.24	1.00	
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				1086	2305						1507	1564	
v/s Ratio Prot				0.33	0.54						0.14		
v/s Ratio Perm				0.03	0.04							0.23	
v/c Ratio				0.53	0.86						0.57	0.23	
Uniform Delay, d1				13.5	19.5						44.7	0.0	
Progression Factor				0.37	1.02						1.00	1.00	
Incremental Delay, d2				0.0	0.3						1.6	0.3	
Delay (s)				5.0	20.2						46.3	0.3	
Level of Service				A	C						D	A	
Approach Delay (s)		0.0			16.6			0.0			32.8		
Approach LOS		A			B			A			C		
Intersection Summary													
HCM 2000 Control Delay			21.7		HCM 2000 Level of Service						C		
HCM 2000 Volume to Capacity ratio			1.02										
Actuated Cycle Length (s)			135.0		Sum of lost time (s)					40.0			
Intersection Capacity Utilization			81.9%		ICU Level of Service					D			
Analysis Period (min)			15										
c Critical Lane Group													















Lane Group	WBT	NBL	NBT
Lane Group Flow (vph)	2059	375	1182
v/c Ratio	1.48	0.42	0.44
Control Delay	254.7	1.4	2.5
Queue Delay	0.2	0.5	0.2
Total Delay	254.9	2.0	2.7
Queue Length 50th (ft)	~903	8	54
Queue Length 95th (ft)	m#825	m8	m10
Internal Link Dist (ft)	133		295
Turn Bay Length (ft)			
Base Capacity (vph)	1393	898	2673
Starvation Cap Reductn	0	214	657
Spillback Cap Reductn	58	46	67
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.54	0.55	0.59

Intersection Summary

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

8: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↑	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1956	0	433	813	0	0	0	0
Future Volume (vph)	0	0	0	0	1956	0	433	813	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0		6.0	6.0				
Lane Util. Factor					0.91		0.86	0.86				
Frbp, ped/bikes					1.00		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					1.00		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					5085		1552	4792				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					5085		1552	4792				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.95	0.79	0.89	0.76	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	2059	0	487	1070	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	47	47	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2059	0	328	1135	0	0	0	0
Confl. Peds. (#/hr)						1						
Heavy Vehicles (%)	2%	2%	2%	2%	2%	6%	0%	2%	2%	2%	2%	2%
Turn Type					NA		custom	NA				
Protected Phases					1 7 8		2 3 4 5	2 3 4 5				
Permitted Phases							6	6				
Actuated Green, G (s)					40.0		77.0	77.0				
Effective Green, g (s)					38.0		75.0	75.0				
Actuated g/C Ratio					0.28		0.56	0.56				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)					1431		931	2875				
v/s Ratio Prot					c0.40		0.15	c0.17				
v/s Ratio Perm							0.06	0.07				
v/c Ratio					1.44		0.35	0.39				
Uniform Delay, d1					48.5		16.6	17.1				
Progression Factor					1.05		0.11	0.19				
Incremental Delay, d2					200.5		0.0	0.0				
Delay (s)					251.3		1.9	3.3				
Level of Service					F		A	A				
Approach Delay (s)		0.0			251.3			2.9			0.0	
Approach LOS		A			F			A			A	
Intersection Summary												
HCM 2000 Control Delay			144.4		HCM 2000 Level of Service					F		
HCM 2000 Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			135.0		Sum of lost time (s)					40.0		
Intersection Capacity Utilization			88.0%		ICU Level of Service					E		
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	EBT	SBL	SBT
Lane Group Flow (vph)	1003	381	1194
v/c Ratio	1.04	0.40	0.39
Control Delay	93.6	3.0	2.8
Queue Delay	9.6	0.8	0.3
Total Delay	103.2	3.8	3.2
Queue Length 50th (ft)	~348	1	10
Queue Length 95th (ft)	#443	m0	m11
Internal Link Dist (ft)	69		291
Turn Bay Length (ft)			
Base Capacity (vph)	960	943	3045
Starvation Cap Reductn	0	301	1082
Spillback Cap Reductn	23	37	60
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.07	0.59	0.61

Intersection Summary

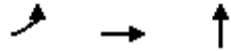
- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

9: S Lamar Blvd & Capity of Texas Hwy
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↑↑↑								↘	↑↑↑		
Traffic Volume (vph)	0	913	0	0	0	0	0	0	0	394	976	0	
Future Volume (vph)	0	913	0	0	0	0	0	0	0	394	976	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.0								6.0	6.0		
Lane Util. Factor		0.91								0.86	0.86		
Frbp, ped/bikes		1.00								1.00	1.00		
Flpb, ped/bikes		1.00								1.00	1.00		
Frt		1.00								1.00	1.00		
Flt Protected		1.00								0.95	1.00		
Satd. Flow (prot)		4988								1437	4774		
Flt Permitted		1.00								0.95	1.00		
Satd. Flow (perm)		4988								1437	4774		
Peak-hour factor, PHF	0.92	0.91	0.88	0.92	0.92	0.92	0.92	0.92	0.92	0.87	0.87	0.92	
Adj. Flow (vph)	0	1003	0	0	0	0	0	0	0	453	1122	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	38	38	0	
Lane Group Flow (vph)	0	1003	0	0	0	0	0	0	0	343	1156	0	
Confl. Bikes (#/hr)			1										
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	8%	2%	2%	
Turn Type		NA								custom	NA		
Protected Phases		4 5								1 2 6 8	1 2 6 8		
Permitted Phases										7	7		
Actuated Green, G (s)		26.0								86.0	86.0		
Effective Green, g (s)		26.0								86.0	86.0		
Actuated g/C Ratio		0.19								0.64	0.64		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)		960								979	3253		
v/s Ratio Prot		c0.20								0.22	c0.22		
v/s Ratio Perm										0.02	0.02		
v/c Ratio		1.04								0.35	0.36		
Uniform Delay, d1		54.5								11.4	11.5		
Progression Factor		1.00								0.32	0.33		
Incremental Delay, d2		41.4								0.1	0.0		
Delay (s)		95.9								3.8	3.8		
Level of Service		F								A	A		
Approach Delay (s)		95.9			0.0			0.0			3.8		
Approach LOS		F			A			A			A		
Intersection Summary													
HCM 2000 Control Delay			39.6		HCM 2000 Level of Service						D		
HCM 2000 Volume to Capacity ratio			0.63										
Actuated Cycle Length (s)			135.0		Sum of lost time (s)					40.0			
Intersection Capacity Utilization			73.9%		ICU Level of Service					D			
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBL	EBT	NBT
Lane Group Flow (vph)	501	1056	1498
v/c Ratio	0.51	0.54	0.98
Control Delay	3.6	4.8	68.0
Queue Delay	7.5	9.2	0.0
Total Delay	11.1	14.0	68.0
Queue Length 50th (ft)	21	29	371
Queue Length 95th (ft)	8	m36	#455
Internal Link Dist (ft)		38	673
Turn Bay Length (ft)			
Base Capacity (vph)	985	1949	1529
Starvation Cap Reductn	433	861	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.91	0.97	0.98

Intersection Summary

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

Queue shown is maximum after two cycles.

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

10: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↔↗						↑↑↑				
Traffic Volume (vph)	382	912	0	0	0	0	0	1063	284	0	0	0
Future Volume (vph)	382	912	0	0	0	0	0	1063	284	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0						6.0				
Lane Util. Factor	0.91	0.91						0.86				
Frt	1.00	1.00						0.97				
Flt Protected	0.95	1.00						1.00				
Satd. Flow (prot)	1610	3259						6292				
Flt Permitted	0.95	1.00						1.00				
Satd. Flow (perm)	1610	3259						6292				
Peak-hour factor, PHF	0.64	0.95	0.92	0.92	0.92	0.92	0.92	0.91	0.86	0.92	0.92	0.92
Adj. Flow (vph)	597	960	0	0	0	0	0	1168	330	0	0	0
RTOR Reduction (vph)	43	43	0	0	0	0	0	36	0	0	0	0
Lane Group Flow (vph)	458	1013	0	0	0	0	0	1462	0	0	0	0
Heavy Vehicles (%)	2%	6%	2%	2%	2%	2%	2%	0%	2%	2%	2%	2%
Turn Type	custom	NA						NA				
Protected Phases	4 5 6 8	4 5 6 8						1 2 3				
Permitted Phases	7	7										
Actuated Green, G (s)	80.0	80.0						39.0				
Effective Green, g (s)	80.0	80.0						39.0				
Actuated g/C Ratio	0.59	0.59						0.29				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	1025	2076						1817				
v/s Ratio Prot	0.26	c0.29						c0.23				
v/s Ratio Perm	0.02	0.03										
v/c Ratio	0.45	0.49						0.80				
Uniform Delay, d1	15.2	15.8						44.5				
Progression Factor	0.27	0.37						1.00				
Incremental Delay, d2	0.1	0.0						3.9				
Delay (s)	4.2	5.9						48.4				
Level of Service	A	A						D				
Approach Delay (s)		5.3			0.0			48.4			0.0	
Approach LOS		A			A			D			A	
Intersection Summary												
HCM 2000 Control Delay			26.5					HCM 2000 Level of Service		C		
HCM 2000 Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			135.0					Sum of lost time (s)		40.0		
Intersection Capacity Utilization			66.2%					ICU Level of Service		C		
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	470	979	165	204	304	30
v/c Ratio	1.46	1.47	0.29	0.69	0.19	0.02
Control Delay	250.1	244.4	1.3	24.6	2.1	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	250.1	244.4	1.3	24.6	2.1	10.4
Queue Length 50th (ft)	~303	~316	0	38	7	1
Queue Length 95th (ft)	#484	#395	0	m46	m7	6
Internal Link Dist (ft)		364			236	206
Turn Bay Length (ft)						
Base Capacity (vph)	322	667	574	294	1670	1438
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.46	1.47	0.29	0.69	0.18	0.02

Intersection Summary

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

11: West Gate Blvd & US 290 WBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations				↙	↕	↗	↙	↕			↕	↗	
Traffic Volume (vph)	0	0	0	605	676	91	375	88	0	0	13	11	
Future Volume (vph)	0	0	0	605	676	91	375	88	0	0	13	11	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				5.5	5.5	5.5	5.5	6.0			6.0		
Lane Util. Factor				0.91	0.91	1.00	0.91	0.91			0.91		
Frbp, ped/bikes				1.00	1.00	0.99	1.00	1.00			1.00		
Flpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00		
Frt				1.00	1.00	0.85	1.00	1.00			0.93		
Flt Protected				0.95	0.99	1.00	0.95	0.97			1.00		
Satd. Flow (prot)				1610	3333	1562	1595	3280			4422		
Flt Permitted				0.95	0.99	1.00	0.74	0.76			1.00		
Satd. Flow (perm)				1610	3333	1562	1235	2587			4422		
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.84	0.55	0.92	0.88	0.92	0.92	0.88	0.75	
Adj. Flow (vph)	0	0	0	644	805	165	408	100	0	0	15	15	
RTOR Reduction (vph)	0	0	0	0	0	133	0	0	0	0	10	0	
Lane Group Flow (vph)	0	0	0	470	979	32	204	304	0	0	20	0	
Confl. Peds. (#/hr)						1							
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	3%	0%	2%	2%	0%	17%	
Turn Type				Perm	NA	Perm	custom	NA			NA		
Protected Phases					4 5			1 2 6 7			1 2		
Permitted Phases				4 5		4 5	6 7						
Actuated Green, G (s)				12.5	12.5	12.5	15.5	41.0			20.0		
Effective Green, g (s)				12.5	12.5	12.5	15.5	30.0			20.0		
Actuated g/C Ratio				0.19	0.19	0.19	0.24	0.46			0.31		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				309	640	300	294	1194			1360		
v/s Ratio Prot											0.00		
v/s Ratio Perm				0.29	0.29	0.02	c0.17	c0.12					
v/c Ratio				1.52	1.53	0.11	0.69	0.25			0.01		
Uniform Delay, d1				26.2	26.2	21.6	22.6	10.7			15.6		
Progression Factor				1.00	1.00	1.00	0.63	0.39			1.00		
Incremental Delay, d2				250.4	246.2	0.7	3.5	0.0			0.0		
Delay (s)				276.6	272.5	22.4	17.7	4.2			15.6		
Level of Service				F	F	C	B	A			B		
Approach Delay (s)		0.0			248.1			9.6			15.6		
Approach LOS		A			F			A			B		
Intersection Summary													
HCM 2000 Control Delay			188.6		HCM 2000 Level of Service						F		
HCM 2000 Volume to Capacity ratio			1.13										
Actuated Cycle Length (s)			65.0		Sum of lost time (s)						34.0		
Intersection Capacity Utilization			87.3%		ICU Level of Service						E		
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	64	908	835	392	65	607
v/c Ratio	0.19	1.36	0.86	0.62	0.12	0.27
Control Delay	24.2	196.4	25.8	7.6	35.3	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.2	196.4	25.8	7.6	35.3	0.7
Queue Length 50th (ft)	22	~249	107	0	29	1
Queue Length 95th (ft)	41	#354	#212	70	m21	m0
Internal Link Dist (ft)		52	369			236
Turn Bay Length (ft)						
Base Capacity (vph)	333	668	969	632	499	2162
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.19	1.36	0.86	0.62	0.13	0.28

Intersection Summary

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

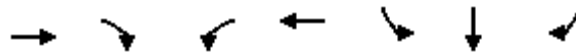
12: West Gate Blvd & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↘	↑↑						↑↑	↘	↘	↑↑		
Traffic Volume (vph)	46	624	168	0	0	0	0	420	714	45	583	0	
Future Volume (vph)	46	624	168	0	0	0	0	420	714	45	583	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.0	6.0						6.0	6.0	5.5	5.5		
Lane Util. Factor	1.00	0.95						0.91	0.91	1.00	0.95		
Frbp, ped/bikes	1.00	1.00						0.99	0.99	1.00	1.00		
Flpb, ped/bikes	1.00	1.00						1.00	1.00	1.00	1.00		
Frt	1.00	0.97						0.93	0.85	1.00	1.00		
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1805	3389						3129	1436	1736	3539		
Flt Permitted	0.95	1.00						1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1805	3389						3129	1436	1736	3539		
Peak-hour factor, PHF	0.72	0.89	0.81	0.92	0.92	0.92	0.92	0.95	0.91	0.69	0.96	0.92	
Adj. Flow (vph)	64	701	207	0	0	0	0	442	785	65	607	0	
RTOR Reduction (vph)	0	47	0	0	0	0	0	245	299	0	0	0	
Lane Group Flow (vph)	64	861	0	0	0	0	0	590	93	65	607	0	
Confl. Peds. (#/hr)			2						1	1			
Heavy Vehicles (%)	0%	2%	4%	2%	2%	2%	2%	3%	1%	4%	2%	2%	
Turn Type	Split	NA						NA	Perm	Prot	NA		
Protected Phases	1 7	1 7						5 6		2 4	2 4 5 6		
Permitted Phases									5 6				
Actuated Green, G (s)	12.0	12.0						15.5	15.5	20.5	41.5		
Effective Green, g (s)	6.5	6.5						15.5	15.5	20.5	35.5		
Actuated g/C Ratio	0.10	0.10						0.24	0.24	0.32	0.55		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)	180	338						746	342	547	1932		
v/s Ratio Prot	0.04	c0.25						c0.19		0.04	c0.17		
v/s Ratio Perm									0.07				
v/c Ratio	0.36	2.55						0.79	0.27	0.12	0.31		
Uniform Delay, d1	27.3	29.2						23.2	20.2	15.8	8.1		
Progression Factor	1.00	1.00						1.00	1.00	2.18	0.14		
Incremental Delay, d2	0.4	705.2						8.4	2.0	0.0	0.0		
Delay (s)	27.7	734.5						31.6	22.1	34.5	1.1		
Level of Service	C	F						C	C	C	A		
Approach Delay (s)		687.9			0.0			28.6			4.4		
Approach LOS		F			A			C			A		
Intersection Summary													
HCM 2000 Control Delay			246.1									HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.17										
Actuated Cycle Length (s)			65.0									Sum of lost time (s)	34.0
Intersection Capacity Utilization			87.3%									ICU Level of Service	E
Analysis Period (min)			15										

c Critical Lane Group



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1793	706	207	4909	183	188	621
v/c Ratio	0.55	0.25	0.67	1.20	0.93	0.91	0.40
Control Delay	18.0	0.2	27.8	119.9	125.3	119.0	0.8
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	0.0
Total Delay	18.0	0.2	27.8	120.2	125.3	119.0	0.8
Queue Length 50th (ft)	406	0	95	~2619	229	234	0
Queue Length 95th (ft)	443	0	m43	m1716	#315	183	0
Internal Link Dist (ft)	834			1419		192	
Turn Bay Length (ft)			950				
Base Capacity (vph)	3242	2777	311	4096	196	207	1553
Starvation Cap Reductn	0	0	0	719	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.25	0.67	1.45	0.93	0.91	0.40

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

13: Capital of Texas Hwy & Mopac SBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑↑	↑	↑↑↑					↑	↑	↑
Traffic Volume (vph)	0	1721	593	122	4565	0	0	0	0	207	55	565
Future Volume (vph)	0	1721	593	122	4565	0	0	0	0	207	55	565
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	4.0	7.0	7.0					6.5	6.5	4.0
Lane Util. Factor		0.91	0.88	1.00	0.91					0.95	0.95	1.00
Frbp, ped/bikes		1.00	0.99	1.00	1.00					1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.98	1.00
Satd. Flow (prot)		4988	2777	1752	5085					1649	1736	1553
Flt Permitted		1.00	1.00	0.08	1.00					0.95	0.98	1.00
Satd. Flow (perm)		4988	2777	155	5085					1649	1736	1553
Peak-hour factor, PHF	0.92	0.96	0.84	0.59	0.93	0.92	0.92	0.92	0.92	0.78	0.52	0.91
Adj. Flow (vph)	0	1793	706	207	4909	0	0	0	0	265	106	621
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1793	706	207	4909	0	0	0	0	183	188	621
Confl. Bikes (#/hr)			6									
Heavy Vehicles (%)	2%	4%	1%	3%	2%	2%	2%	2%	2%	4%	0%	4%
Turn Type		NA	Free	pm+pt	NA					Perm	NA	Free
Protected Phases		2		1	6						8	
Permitted Phases			Free	6						8		Free
Actuated Green, G (s)		117.0	180.0	145.0	145.0					21.5	21.5	180.0
Effective Green, g (s)		117.0	180.0	145.0	145.0					21.5	21.5	180.0
Actuated g/C Ratio		0.65	1.00	0.81	0.81					0.12	0.12	1.00
Clearance Time (s)		7.0		7.0	7.0					6.5	6.5	
Vehicle Extension (s)		4.0		2.0	4.0					2.0	2.0	
Lane Grp Cap (vph)		3242	2777	311	4096					196	207	1553
v/s Ratio Prot		0.36		0.08	c0.97							
v/s Ratio Perm			0.25	0.46						c0.11	0.11	0.40
v/c Ratio		0.55	0.25	0.67	1.20					0.93	0.91	0.40
Uniform Delay, d1		17.2	0.0	31.2	17.5					78.5	78.3	0.0
Progression Factor		1.00	1.00	1.09	1.81					1.00	1.00	1.00
Incremental Delay, d2		0.7	0.2	1.0	89.6					49.0	42.4	0.8
Delay (s)		17.9	0.2	35.1	121.2					127.5	120.7	0.8
Level of Service		B	A	D	F					F	F	A
Approach Delay (s)		12.9			117.7			0.0			46.9	
Approach LOS		B			F			A			D	
Intersection Summary												
HCM 2000 Control Delay			79.1		HCM 2000 Level of Service					E		
HCM 2000 Volume to Capacity ratio			1.21									
Actuated Cycle Length (s)			180.0		Sum of lost time (s)				20.5			
Intersection Capacity Utilization			125.9%		ICU Level of Service				H			
Analysis Period (min)			15									

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	379	1719	3185	3187	1806	215	451
v/c Ratio	1.33	0.69	1.16	2.06	1.72	0.54	1.18
Control Delay	208.5	13.4	121.0	495.8	366.7	69.5	154.5
Queue Delay	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Total Delay	208.5	13.4	123.0	495.8	366.7	69.5	154.5
Queue Length 50th (ft)	~528	381	~1620	~5710	~1110	230	~570
Queue Length 95th (ft)	m#738	405	m782	m#2989	#1198	283	#580
Internal Link Dist (ft)		1419	756			675	
Turn Bay Length (ft)					300		
Base Capacity (vph)	286	2487	2740	1549	1050	395	382
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	1416	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.33	0.69	2.41	2.06	1.72	0.54	1.18

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.




















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

Queue shown is maximum after two cycles.

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

14: Mopac NBFR & Capital of Texas Hwy
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	349	1616	0	0	2962	3091	1698	172	338	0	0	0
Future Volume (veh/h)	349	1616	0	0	2962	3091	1698	172	338	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1827	0	0	1863	1845	1881	1900	1863			
Adj Flow Rate, veh/h	379	1719	0	0	3185	0	1806	215	0			
Adj No. of Lanes	1	2	0	0	3	1	3	1	1			
Peak Hour Factor	0.92	0.94	0.92	0.92	0.93	0.97	0.94	0.80	0.75			
Percent Heavy Veh, %	2	4	0	0	2	3	1	0	2			
Cap, veh/h	286	2488	0	0	2740	845	1053	396	330			
Arrive On Green	0.28	1.00	0.00	0.00	0.54	0.00	0.21	0.21	0.00			
Sat Flow, veh/h	1774	3563	0	0	5253	1568	5052	1900	1583			
Grp Volume(v), veh/h	379	1719	0	0	3185	0	1806	215	0			
Grp Sat Flow(s),veh/h/ln	1774	1736	0	0	1695	1568	1684	1900	1583			
Q Serve(g_s), s	25.0	0.0	0.0	0.0	97.0	0.0	37.5	18.2	0.0			
Cycle Q Clear(g_c), s	25.0	0.0	0.0	0.0	97.0	0.0	37.5	18.2	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	286	2488	0	0	2740	845	1053	396	330			
V/C Ratio(X)	1.32	0.69	0.00	0.00	1.16	0.00	1.72	0.54	0.00			
Avail Cap(c_a), veh/h	286	2488	0	0	2740	845	1053	396	330			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.78	0.78	0.00	0.00	1.00	0.00	1.00	1.00	0.00			
Uniform Delay (d), s/veh	63.3	0.0	0.0	0.0	41.5	0.0	71.3	63.6	0.0			
Incr Delay (d2), s/veh	163.4	1.3	0.0	0.0	77.4	0.0	326.2	0.9	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			
%ile BackOfQ(50%),veh/ln	27.2	0.4	0.0	0.0	64.8	0.0	49.2	9.6	0.0			
LnGrp Delay(d),s/veh	226.6	1.3	0.0	0.0	118.9	0.0	397.4	64.5	0.0			
LnGrp LOS	F	A			F		F	E				
Approach Vol, veh/h		2098			3185			2021				
Approach Delay, s/veh		42.0			118.9			362.0				
Approach LOS		D			F			F				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		136.0		44.0	32.0	104.0						
Change Period (Y+Rc), s		7.0		6.5	7.0	7.0						
Max Green Setting (Gmax), s		129.0		37.5	25.0	97.0						
Max Q Clear Time (g_c+I1), s		2.0		39.5	27.0	99.0						
Green Ext Time (p_c), s		5.3		0.0	0.0	0.0						
Intersection Summary												
HCM 2010 Ctrl Delay				164.1								
HCM 2010 LOS				F								



Lane Group	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	186	6052	150	667	4346
v/c Ratio	0.35	1.61	0.13	1.96	1.17
Control Delay	65.5	299.3	6.7	478.1	103.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	65.5	299.3	6.7	478.1	103.4
Queue Length 50th (ft)	110	~3738	44	~1228	~2236
Queue Length 95th (ft)	133	#3657	44	m#1327	m#2186
Internal Link Dist (ft)		1281			1273
Turn Bay Length (ft)			430	550	
Base Capacity (vph)	536	3757	1195	340	3721
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.35	1.61	0.13	1.96	1.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

15: Capital of Texas Hwy & Barton Creek Plaza Driveway
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted AM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↔↔	↑↑↑	↗	↖	↑↑↑
Traffic Volume (vph)	0	145	5931	93	560	4129
Future Volume (vph)	0	145	5931	93	560	4129
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	7.0	7.0	6.0	7.0
Lane Util. Factor		0.88	0.91	1.00	1.00	0.91
Frbp, ped/bikes		1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		2842	5085	1615	1805	5036
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		2842	5085	1615	1805	5036
Peak-hour factor, PHF	0.92	0.78	0.98	0.62	0.84	0.95
Adj. Flow (vph)	0	186	6052	150	667	4346
RTOR Reduction (vph)	0	0	0	2	0	0
Lane Group Flow (vph)	0	186	6052	148	667	4346
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	2%	0%	2%	0%	0%	3%
Turn Type		Over	NA	Prot	Prot	NA
Protected Phases		5	6	6	5	6
Permitted Phases						
Actuated Green, G (s)		34.0	133.0	133.0	34.0	133.0
Effective Green, g (s)		34.0	133.0	133.0	34.0	133.0
Actuated g/C Ratio		0.19	0.74	0.74	0.19	0.74
Clearance Time (s)		6.0	7.0	7.0	6.0	7.0
Vehicle Extension (s)		2.0	4.0	4.0	2.0	4.0
Lane Grp Cap (vph)		536	3757	1193	340	3721
v/s Ratio Prot		0.07	c1.19	0.09	c0.37	0.86
v/s Ratio Perm						
v/c Ratio		0.35	1.61	0.12	1.96	1.17
Uniform Delay, d1		63.4	23.5	6.8	73.0	23.5
Progression Factor		1.00	1.00	1.00	1.06	1.00
Incremental Delay, d2		0.1	276.1	0.2	442.9	78.7
Delay (s)		63.5	299.6	7.0	520.6	102.3
Level of Service		E	F	A	F	F
Approach Delay (s)	63.5		292.6			157.9
Approach LOS	E		F			F
Intersection Summary						
HCM 2000 Control Delay			229.6		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.68			
Actuated Cycle Length (s)			180.0		Sum of lost time (s)	13.0
Intersection Capacity Utilization			156.5%		ICU Level of Service	H
Analysis Period (min)			15			

c Critical Lane Group





















Lane Group	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	174	1803	106	361	421	211
v/c Ratio	0.25	1.22	0.25	0.40	0.98	0.44
Control Delay	27.3	141.9	11.2	13.9	89.3	15.5
Queue Delay	0.0	0.0	0.6	3.9	5.3	0.0
Total Delay	27.3	141.9	11.7	17.8	94.6	15.5
Queue Length 50th (ft)	99	~1021	41	186	371	34
Queue Length 95th (ft)	m147	m#1145	m53	159	#509	31
Internal Link Dist (ft)		522		175	200	
Turn Bay Length (ft)			70			90
Base Capacity (vph)	692	1475	508	892	430	485
Starvation Cap Reductn	0	0	189	436	0	0
Spillback Cap Reductn	35	0	0	0	10	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	1.22	0.33	0.79	1.00	0.44

Intersection Summary

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

16: US 290 WBFR & Victory Drive
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	153	1483	199	100	224	0	0	320	129
Future Volume (vph)	0	0	0	153	1483	199	100	224	0	0	320	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.5	5.5		5.5	4.5			4.5	4.5
Lane Util. Factor				1.00	0.95		1.00	1.00			1.00	1.00
Frbp, ped/bikes				1.00	1.00		1.00	1.00			1.00	0.98
Flpb, ped/bikes				1.00	1.00		1.00	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1597	3379		1769	1827			1759	1489
Flt Permitted				0.95	1.00		0.14	1.00			1.00	1.00
Satd. Flow (perm)				1597	3379		261	1827			1759	1489
Peak-hour factor, PHF	0.92	0.92	0.92	0.88	0.96	0.77	0.94	0.62	0.92	0.92	0.76	0.61
Adj. Flow (vph)	0	0	0	174	1545	258	106	361	0	0	421	211
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	122
Lane Group Flow (vph)	0	0	0	174	1793	0	106	361	0	0	421	89
Confl. Peds. (#/hr)						6	6					6
Confl. Bikes (#/hr)												4
Heavy Vehicles (%)	2%	2%	2%	13%	3%	11%	2%	4%	2%	2%	8%	6%
Turn Type				Split	NA		pm+pt	NA			NA	Perm
Protected Phases				7 8	7 8		2 10 1 2 6 10				1 6	
Permitted Phases							1 2 6 10					1 6
Actuated Green, G (s)				58.0	58.0		61.0	66.5			33.0	33.0
Effective Green, g (s)				58.0	58.0		50.5	55.0			33.0	33.0
Actuated g/C Ratio				0.43	0.43		0.37	0.41			0.24	0.24
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)				686	1451		343	744			429	363
v/s Ratio Prot				0.11	c0.53		0.05	c0.20			c0.24	
v/s Ratio Perm							0.07					0.06
v/c Ratio				0.25	1.24		0.31	0.49			0.98	0.24
Uniform Delay, d1				24.6	38.5		30.5	29.5			50.7	41.0
Progression Factor				1.07	1.05		0.52	0.59			1.00	1.00
Incremental Delay, d2				0.1	112.1		0.1	0.1			38.3	0.1
Delay (s)				26.4	152.7		16.1	17.5			89.0	41.1
Level of Service				C	F		B	B			F	D
Approach Delay (s)		0.0			141.6			17.2			73.0	
Approach LOS		A			F			B			E	
Intersection Summary												
HCM 2000 Control Delay			108.6									F
HCM 2000 Volume to Capacity ratio			1.11									
Actuated Cycle Length (s)			135.0						32.0			
Intersection Capacity Utilization			113.2%									H
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1810	202	201	386	130
v/c Ratio	1.10	0.27	0.30	0.61	0.14
Control Delay	102.8	27.5	12.3	14.2	3.7
Queue Delay	0.2	0.0	0.0	0.7	1.4
Total Delay	103.1	27.5	12.3	15.0	5.1
Queue Length 50th (ft)	~669	116	46	71	11
Queue Length 95th (ft)	m#712	167	87	m146	m16
Internal Link Dist (ft)	53	253			175
Turn Bay Length (ft)			125	70	
Base Capacity (vph)	1640	750	661	634	925
Starvation Cap Reductn	0	0	0	71	635
Spillback Cap Reductn	101	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.18	0.27	0.30	0.69	0.45

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

17: Pack Saddle Pass & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (vph)	136	1399	57	0	0	0	0	174	167	336	117	0		
Future Volume (vph)	136	1399	57	0	0	0	0	174	167	336	117	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)		6.0						4.5	4.5	5.5	4.5			
Lane Util. Factor		0.91						1.00	1.00	1.00	1.00			
Frbp, ped/bikes		1.00						1.00	1.00	1.00	1.00			
Flpb, ped/bikes		1.00						1.00	1.00	1.00	1.00			
Frt		0.99						1.00	0.85	1.00	1.00			
Flt Protected		0.99						1.00	1.00	0.95	1.00			
Satd. Flow (prot)		4914						1845	1455	1702	1583			
Flt Permitted		0.99						1.00	1.00	0.55	1.00			
Satd. Flow (perm)		4914						1845	1455	992	1583			
Peak-hour factor, PHF	0.54	0.94	0.81	0.92	0.92	0.92	0.92	0.86	0.83	0.87	0.90	0.92		
Adj. Flow (vph)	252	1488	70	0	0	0	0	202	201	386	130	0		
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	74	0	0	0		
Lane Group Flow (vph)	0	1807	0	0	0	0	0	202	127	386	130	0		
Confl. Peds. (#/hr)			3						1	1				
Confl. Bikes (#/hr)			1											
Heavy Vehicles (%)	6%	4%	0%	2%	2%	2%	2%	3%	11%	6%	20%	2%		
Turn Type	Split	NA						NA	Prot	D.P+P	NA			
Protected Phases	8 10	8 10						1 2 6	1 2 6	7	1 2 6 7			
Permitted Phases										1 2 6				
Actuated Green, G (s)		45.0						55.5	55.5	74.0	78.5			
Effective Green, g (s)		45.0						50.0	50.0	69.5	73.0			
Actuated g/C Ratio		0.33						0.37	0.37	0.51	0.54			
Clearance Time (s)										5.5				
Vehicle Extension (s)										1.5				
Lane Grp Cap (vph)		1638						683	538	607	855			
v/s Ratio Prot		c0.37						0.11	0.09	c0.09	0.08			
v/s Ratio Perm										c0.24				
v/c Ratio		1.10						0.30	0.24	0.64	0.15			
Uniform Delay, d1		45.0						30.1	29.3	28.9	15.5			
Progression Factor		1.16						1.00	1.00	0.56	0.27			
Incremental Delay, d2		55.1						0.1	0.1	1.0	0.0			
Delay (s)		107.1						30.1	29.4	17.2	4.3			
Level of Service		F						C	C	B	A			
Approach Delay (s)		107.1			0.0			29.8			13.9			
Approach LOS		F			A			C			B			
Intersection Summary														
HCM 2000 Control Delay			78.1									HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio			0.91											
Actuated Cycle Length (s)			135.0							32.0			Sum of lost time (s)	
Intersection Capacity Utilization			113.2%										ICU Level of Service	H
Analysis Period (min)			15											
c Critical Lane Group														



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	558	1175	880	689	1043	1255
v/c Ratio	2.17	2.22	2.16	3.28	0.39	1.40
Control Delay	566.2	579.7	552.5	1045.1	0.6	224.3
Queue Delay	0.1	0.1	0.0	0.0	2.1	1.5
Total Delay	566.3	579.8	552.5	1045.1	2.7	225.9
Queue Length 50th (ft)	~825	~875	~1062	~973	8	~512
Queue Length 95th (ft)	#1027	#1019	#1215	m#950	m8	#569
Internal Link Dist (ft)		53			174	314
Turn Bay Length (ft)						
Base Capacity (vph)	257	530	407	210	2694	898
Starvation Cap Reductn	0	0	0	0	1453	0
Spillback Cap Reductn	2	4	0	0	0	209
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	2.19	2.23	2.16	3.28	0.84	1.82

Intersection Summary

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

18: US 290 WBFR & Menchaca Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	0	0	572	1011	748	586	960	0	0	889	197	
Future Volume (vph)	0	0	0	572	1011	748	586	960	0	0	889	197	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				6.0	6.0	6.0	5.0	5.0			5.0		
Lane Util. Factor				0.91	0.91	1.00	1.00	0.95			0.91		
Frbp, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00		
Flpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00		
Frt				1.00	1.00	0.85	1.00	1.00			0.97		
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00		
Satd. Flow (prot)				1595	3285	1599	1769	3574			4929		
Flt Permitted				0.95	1.00	1.00	0.21	1.00			1.00		
Satd. Flow (perm)				1595	3285	1599	391	3574			4929		
Peak-hour factor, PHF	0.92	0.92	0.92	0.87	0.94	0.85	0.85	0.92	0.92	0.92	0.86	0.89	
Adj. Flow (vph)	0	0	0	657	1076	880	689	1043	0	0	1034	221	
RTOR Reduction (vph)	0	0	0	0	0	149	0	0	0	0	26	0	
Lane Group Flow (vph)	0	0	0	558	1175	731	689	1043	0	0	1229	0	
Confl. Peds. (#/hr)							1					1	
Confl. Bikes (#/hr)												1	
Heavy Vehicles (%)	2%	2%	2%	3%	5%	1%	2%	1%	2%	2%	2%	3%	
Turn Type				Perm	NA	Perm	custom	NA				NA	
Protected Phases					7 8			1 2 6 10				1 6	
Permitted Phases				7 8		7 8	2 10						
Actuated Green, G (s)				21.0	21.0	21.0	70.0	98.0				23.0	
Effective Green, g (s)				21.0	21.0	21.0	70.0	98.0				23.0	
Actuated g/C Ratio				0.16	0.16	0.16	0.54	0.75				0.18	
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				257	530	258	210	2694				872	
v/s Ratio Prot								0.29				c0.25	
v/s Ratio Perm				0.35	0.36	c0.46	c1.76						
v/c Ratio				2.17	2.22	2.83	3.28	0.39				1.41	
Uniform Delay, d1				54.5	54.5	54.5	30.0	5.6				53.5	
Progression Factor				1.00	1.00	1.00	0.54	0.07				1.00	
Incremental Delay, d2				539.7	553.8	835.2	1030.9	0.0				191.3	
Delay (s)				594.2	608.3	889.7	1047.2	0.4				244.8	
Level of Service				F	F	F	F	A				F	
Approach Delay (s)		0.0			700.1			416.8				244.8	
Approach LOS		A			F			F				F	
Intersection Summary													
HCM 2000 Control Delay			510.4		HCM 2000 Level of Service							F	
HCM 2000 Volume to Capacity ratio			3.27										
Actuated Cycle Length (s)			130.0		Sum of lost time (s)						32.0		
Intersection Capacity Utilization			132.7%		ICU Level of Service						H		
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	276	517	236	2160	785	932
v/c Ratio	0.80	0.77	0.52	1.21dr	1.68	0.37
Control Delay	68.7	58.3	13.8	72.2	331.1	7.2
Queue Delay	23.6	0.0	0.0	19.9	3.5	51.2
Total Delay	92.3	58.3	13.8	92.1	334.6	58.4
Queue Length 50th (ft)	224	219	24	~724	~945	92
Queue Length 95th (ft)	#354	280	103	#819	m#429	m57
Internal Link Dist (ft)		62		300		174
Turn Bay Length (ft)						
Base Capacity (vph)	343	674	457	2049	467	2534
Starvation Cap Reductn	0	0	0	0	139	1715
Spillback Cap Reductn	67	0	0	536	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.77	0.52	1.43	2.39	1.14

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

19: Menchaca Road & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	246	460	229	0	0	0	0	1252	724	636	913	0
Future Volume (vph)	246	460	229	0	0	0	0	1252	724	636	913	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0					5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00					0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99					1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.94		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1787	3505	1533					4811		1787	3505	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1787	3505	1533					4811		1787	3505	
Peak-hour factor, PHF	0.89	0.89	0.97	0.92	0.92	0.92	0.92	0.95	0.86	0.81	0.98	0.92
Adj. Flow (vph)	276	517	236	0	0	0	0	1318	842	785	932	0
RTOR Reduction (vph)	0	0	162	0	0	0	0	13	0	0	0	0
Lane Group Flow (vph)	276	517	74	0	0	0	0	2147	0	785	932	0
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	3%	4%	2%	2%	2%	2%	1%	1%	1%	3%	2%
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		8 10						1 2		6 7	1 2 6 7	
Permitted Phases	8 10		8 10									
Actuated Green, G (s)	26.0	26.0	26.0					55.0		33.0	93.0	
Effective Green, g (s)	26.0	26.0	26.0					55.0		33.0	93.0	
Actuated g/C Ratio	0.20	0.20	0.20					0.42		0.25	0.72	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	357	701	306					2035		453	2507	
v/s Ratio Prot		0.15						c0.45		c0.44	0.27	
v/s Ratio Perm	c0.15		0.05									
v/c Ratio	0.77	0.74	0.24					1.21dr		1.73	0.37	
Uniform Delay, d1	49.2	48.8	43.7					37.5		48.5	7.2	
Progression Factor	1.00	1.00	1.00					1.00		0.55	1.04	
Incremental Delay, d2	9.1	3.5	0.2					36.3		330.6	0.0	
Delay (s)	58.4	52.3	43.9					73.8		357.5	7.5	
Level of Service	E	D	D					E		F	A	
Approach Delay (s)		52.0			0.0			73.8			167.5	
Approach LOS		D			A			E			F	
Intersection Summary												
HCM 2000 Control Delay			102.0					HCM 2000 Level of Service		F		
HCM 2000 Volume to Capacity ratio			1.38									
Actuated Cycle Length (s)			130.0					Sum of lost time (s)		32.0		
Intersection Capacity Utilization			132.7%					ICU Level of Service		H		
Analysis Period (min)			15									
dr Defacto Right Lane. Recode with 1 though lane as a right lane.												
c Critical Lane Group												

Intersection												
Int Delay, s/veh	50.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	14	172	167	15	154	4	163	11	111	2	21	32
Future Vol, veh/h	14	172	167	15	154	4	163	11	111	2	21	32
Conflicting Peds, #/hr	15	0	4	4	0	15	9	0	15	15	0	9
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	66	74	95	58	60	76	75	60	60	60	75
Heavy Vehicles, %	0	0	6	0	0	0	11	17	2	0	0	0
Mvmt Flow	28	261	226	16	266	7	214	15	185	3	35	43

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	288	0	0	491	0	0	784	754	393	862	864	294
Stage 1	-	-	-	-	-	-	434	434	-	317	317	-
Stage 2	-	-	-	-	-	-	350	320	-	545	547	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.21	6.67	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.21	5.67	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.21	5.67	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.599	4.153	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1286	-	-	1083	-	-	300	321	656	277	294	750
Stage 1	-	-	-	-	-	-	583	556	-	698	658	-
Stage 2	-	-	-	-	-	-	648	626	-	526	521	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1268	-	-	1079	-	-	243	300	644	178	275	733
Mov Cap-2 Maneuver	-	-	-	-	-	-	243	300	-	178	275	-
Stage 1	-	-	-	-	-	-	563	537	-	667	638	-
Stage 2	-	-	-	-	-	-	562	607	-	348	503	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.5			155.3			16.4		
HCM LOS							F			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	340	1268	-	-	1079	-	-	397
HCM Lane V/C Ratio	1.218	0.022	-	-	0.015	-	-	0.204
HCM Control Delay (s)	155.3	7.9	0	-	8.4	0	-	16.4
HCM Lane LOS	F	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	17.9	0.1	-	-	0	-	-	0.8

21: S Lamar Blvd & Driveway A
 HCM Unsignalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted AM



Movement	EBL	EBR	NBL	NBT	SBT	SBR					
Lane Configurations											
Traffic Volume (veh/h)	0	0	0	2151	1321	180					
Future Volume (Veh/h)	0	0	0	2151	1321	180					
Sign Control	Stop			Free		Free					
Grade	0%			0%		0%					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92					
Hourly flow rate (vph)	0	0	0	2338	1436	196					
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type				None	None						
Median storage (veh)											
Upstream signal (ft)				408	941						
pX, platoon unblocked											
vC, conflicting volume	2118	457	1632								
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	2118	457	1632								
tC, single (s)	6.8	6.9	4.1								
tC, 2 stage (s)											
tF (s)	3.5	3.3	2.2								
p0 queue free %	100	100	100								
cM capacity (veh/h)	43	551	394								
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4		
Volume Total	0	584	584	584	584	410	410	410	401		
Volume Left	0	0	0	0	0	0	0	0	0		
Volume Right	0	0	0	0	0	0	0	0	196		
cSH	1700	1700	1700	1700	1700	1700	1700	1700	1700		
Volume to Capacity	0.00	0.34	0.34	0.34	0.34	0.24	0.24	0.24	0.24		
Queue Length 95th (ft)	0	0	0	0	0	0	0	0	0		
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Lane LOS	A										
Approach Delay (s)	0.0	0.0					0.0				
Approach LOS	A										
Intersection Summary											
Average Delay	0.0										
Intersection Capacity Utilization	34.5%			ICU Level of Service				A			
Analysis Period (min)	15										

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑↑	
Traffic Vol, veh/h	0	103	0	774	953	36
Future Vol, veh/h	0	103	0	774	953	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	112	0	841	1036	39

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	538	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-
Pot Cap-1 Maneuver	0	417	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	417	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT EBLn1	SBT	SBR
Capacity (veh/h)	- 417	-	-
HCM Lane V/C Ratio	- 0.268	-	-
HCM Control Delay (s)	- 16.8	-	-
HCM Lane LOS	- C	-	-
HCM 95th %tile Q(veh)	- 1.1	-	-

Intersection						
Int Delay, s/veh	2.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑ ↑ ↑	↑ ↑ ↑			
Traffic Vol, veh/h	0	90	1921	196	0	0
Future Vol, veh/h	0	90	1921	196	0	0
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	-	-	-
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	98	2088	213	0	0

Major/Minor	Minor1	Major1	
Conflicting Flow All	-	1151	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.14	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.92	-
Pot Cap-1 Maneuver	0	164	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	-	164	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB
HCM Control Delay, s	55.1	0
HCM LOS	F	

Minor Lane/Major Mvmt	NBT	NBRWBLn1
Capacity (veh/h)	-	164
HCM Lane V/C Ratio	-	0.597
HCM Control Delay (s)	-	55.1
HCM Lane LOS	-	F
HCM 95th %tile Q(veh)	-	3.2



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	628	526	2144	841	501	2480
v/c Ratio	0.71	0.68	1.35	0.93	1.29	1.04
Control Delay	50.4	32.3	188.1	22.9	186.0	53.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.4	32.3	188.1	22.9	186.0	53.3
Queue Length 50th (ft)	258	346	~1292	273	~510	~1234
Queue Length 95th (ft)	308	482	m#1304	m170	#632	#1362
Internal Link Dist (ft)	497		121			322
Turn Bay Length (ft)		125			125	
Base Capacity (vph)	890	778	1588	904	387	2382
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.68	1.35	0.93	1.29	1.04

Intersection Summary

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

1: S Lamar Blvd & W Oltorf Street
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔	↔	↕↕	↔	↔	↕↕
Traffic Volume (vph)	540	494	2015	715	411	2306
Future Volume (vph)	540	494	2015	715	411	2306
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1615	3574	1542	1787	3574
Flt Permitted	0.95	1.00	1.00	1.00	0.06	1.00
Satd. Flow (perm)	3433	1615	3574	1542	116	3574
Peak-hour factor, PHF	0.86	0.94	0.94	0.85	0.82	0.93
Adj. Flow (vph)	628	526	2144	841	501	2480
RTOR Reduction (vph)	0	1	0	219	0	0
Lane Group Flow (vph)	628	525	2144	622	501	2480
Confl. Peds. (#/hr)		10		6	6	
Confl. Bikes (#/hr)				5		
Heavy Vehicles (%)	2%	0%	1%	2%	1%	1%
Turn Type	Prot	pt+ov	NA	Perm	pm+pt	NA
Protected Phases	4	1 4	2		1	6
Permitted Phases		4		2	6	
Actuated Green, G (s)	35.0	65.0	60.0	60.0	90.0	90.0
Effective Green, g (s)	35.0	65.0	60.0	60.0	90.0	90.0
Actuated g/C Ratio	0.26	0.48	0.44	0.44	0.67	0.67
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	1.0		1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	890	777	1588	685	386	2382
v/s Ratio Prot	0.18	c0.33	c0.60		c0.24	0.69
v/s Ratio Perm				0.40	0.62	
v/c Ratio	0.71	0.68	1.35	0.91	1.30	1.04
Uniform Delay, d1	45.3	26.9	37.5	34.9	46.4	22.5
Progression Factor	1.00	1.00	0.83	0.68	1.00	1.00
Incremental Delay, d2	4.7	4.7	159.5	9.6	152.0	30.2
Delay (s)	50.0	31.6	190.7	33.2	198.4	52.7
Level of Service	D	C	F	C	F	D
Approach Delay (s)	41.6		146.3			77.2
Approach LOS	D		F			E

Intersection Summary

HCM 2000 Control Delay	100.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	106.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	154	392	143	260	2473	200	56	2603
v/c Ratio	0.66	0.89	0.65	1.22	1.00	0.19	1.00	1.31
Control Delay	57.4	62.9	58.5	133.7	31.5	7.0	100.9	168.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.4	62.9	58.5	133.7	31.5	7.0	100.9	168.6
Queue Length 50th (ft)	114	272	96	~236	~1057	45	43	~1541
Queue Length 95th (ft)	141	135	129	m#287	m#1193	m49	m#56	m#1487
Internal Link Dist (ft)		215	74		201			588
Turn Bay Length (ft)	75			50		125	50	
Base Capacity (vph)	232	506	295	213	2461	1075	56	1992
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.77	0.48	1.22	1.00	0.19	1.00	1.31

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

2: S Lamar Blvd & Bluebonnet Lane
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗			↖		↖	↕	↗	↖	↕	↗
Traffic Volume (vph)	117	49	248	0	56	62	218	2226	152	40	2496	2
Future Volume (vph)	117	49	248	0	56	62	218	2226	152	40	2496	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	0.97			0.97		1.00	1.00	0.95	1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.89			0.94		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1798	1633			1733		1787	3574	1529	1805	3539	
Flt Permitted	0.34	1.00			1.00		0.05	1.00	1.00	0.05	1.00	
Satd. Flow (perm)	639	1633			1733		93	3574	1529	100	3539	
Peak-hour factor, PHF	0.76	0.47	0.86	0.69	0.75	0.91	0.84	0.90	0.76	0.72	0.96	0.60
Adj. Flow (vph)	154	104	288	0	75	68	260	2473	200	56	2600	3
RTOR Reduction (vph)	0	62	0	0	26	0	0	0	23	0	0	0
Lane Group Flow (vph)	154	330	0	0	117	0	260	2473	177	56	2603	0
Confl. Peds. (#/hr)	12		12	12		12	8		9	9		8
Confl. Bikes (#/hr)			6			5			12			4
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%	1%	1%	0%	0%	2%	0%
Turn Type	pm+pt	NA			NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4						2		2	6		
Actuated Green, G (s)	31.0	31.0			15.0		93.0	93.0	93.0	76.0	76.0	
Effective Green, g (s)	31.0	31.0			15.0		93.0	93.0	93.0	76.0	76.0	
Actuated g/C Ratio	0.23	0.23			0.11		0.69	0.69	0.69	0.56	0.56	
Clearance Time (s)	6.0	6.0			6.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0			2.0		1.0	1.0	1.0	1.0	1.0	
Lane Grp Cap (vph)	232	374			192		214	2462	1053	56	1992	
v/s Ratio Prot	0.05	c0.20			0.07		c0.11	0.69			c0.74	
v/s Ratio Perm	0.10						0.73		0.12	0.56		
v/c Ratio	0.66	0.88			0.61		1.21	1.00	0.17	1.00	1.31	
Uniform Delay, d1	44.3	50.2			57.2		48.5	21.0	7.4	29.5	29.5	
Progression Factor	1.00	1.00			1.00		0.85	1.17	1.31	1.11	1.08	
Incremental Delay, d2	5.4	20.3			4.0		100.8	6.6	0.0	63.4	139.1	
Delay (s)	49.7	70.5			61.2		141.9	31.1	9.7	96.2	171.0	
Level of Service	D	E			E		F	C	A	F	F	
Approach Delay (s)		64.6			61.2			39.5			169.5	
Approach LOS		E			E			D			F	

Intersection Summary

HCM 2000 Control Delay	97.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	115.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	884	2254	37	821	2471
v/c Ratio	1.08	1.01	0.04	1.59	1.04
Control Delay	98.3	32.1	0.6	305.5	27.5
Queue Delay	0.0	6.9	0.0	0.0	26.4
Total Delay	98.3	39.0	0.6	305.5	54.0
Queue Length 50th (ft)	~485	~1112	1	~1054	~1207
Queue Length 95th (ft)	#631	#1233	m1	m#803	m148
Internal Link Dist (ft)		324			498
Turn Bay Length (ft)				100	
Base Capacity (vph)	822	2223	992	516	2385
Starvation Cap Reductn	0	44	0	0	0
Spillback Cap Reductn	0	0	0	0	265
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.08	1.03	0.04	1.59	1.17

Intersection Summary

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

3: S Lamar Blvd & Menchaca Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗↗	↕↕	↘	↘	↕↕
Traffic Volume (vph)	0	813	2029	28	706	2273
Future Volume (vph)	0	813	2029	28	706	2273
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0
Lane Util. Factor		0.88	0.95	1.00	1.00	0.95
Frbp, ped/bikes		1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		2814	3574	1581	1787	3539
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		2814	3574	1581	1787	3539
Peak-hour factor, PHF	0.92	0.92	0.90	0.75	0.86	0.92
Adj. Flow (vph)	0	884	2254	37	821	2471
RTOR Reduction (vph)	0	9	0	9	0	0
Lane Group Flow (vph)	0	875	2254	28	821	2471
Confl. Peds. (#/hr)		7		6	6	
Confl. Bikes (#/hr)		1		9		
Heavy Vehicles (%)	2%	1%	1%	0%	1%	2%
Turn Type		pt+ov	NA	Perm	Prot	NA
Protected Phases		1 4	2 3		1 4	1 2
Permitted Phases				2 3		
Actuated Green, G (s)		39.0	84.0	84.0	39.0	91.0
Effective Green, g (s)		39.0	84.0	84.0	39.0	91.0
Actuated g/C Ratio		0.29	0.62	0.62	0.29	0.67
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		812	2223	983	516	2385
v/s Ratio Prot		0.31	c0.63		c0.46	c0.70
v/s Ratio Perm				0.02		
v/c Ratio		1.08	1.01	0.03	1.59	1.04
Uniform Delay, d1		48.0	25.5	9.8	48.0	22.0
Progression Factor		1.00	0.53	0.10	1.30	0.32
Incremental Delay, d2		54.5	17.2	0.0	266.8	18.0
Delay (s)		102.5	30.7	1.0	329.3	25.0
Level of Service		F	C	A	F	C
Approach Delay (s)	102.5		30.2			100.9
Approach LOS	F		C			F
Intersection Summary						
HCM 2000 Control Delay			76.1		HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			1.33			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	24.0
Intersection Capacity Utilization			121.9%		ICU Level of Service	H
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	136	465	115	205	276	2097	102	117	2426
v/c Ratio	0.68	0.69	1.35	0.32	2.30	0.87	0.09	4.68	1.11
Control Delay	70.0	44.3	259.8	46.6	616.2	9.2	0.3	1676.4	58.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	4.9	0.0	0.0	0.1
Total Delay	70.0	44.3	259.8	46.6	616.2	14.1	0.3	1676.4	58.4
Queue Length 50th (ft)	113	152	~132	77	~395	528	2	~192	~1275
Queue Length 95th (ft)	#182	172	#259	109	m#389	m508	m2	m#186	m#1199
Internal Link Dist (ft)		257		238		436			324
Turn Bay Length (ft)	90		100		125		160	100	
Base Capacity (vph)	200	677	85	636	120	2409	1088	25	2191
Starvation Cap Reductn	0	0	0	0	0	0	0	0	58
Spillback Cap Reductn	0	0	0	0	0	260	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.69	1.35	0.32	2.30	0.98	0.09	4.68	1.14

Intersection Summary

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

4: S Lamar Blvd & Barton Skyway/Lightsey Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	117	159	206	105	147	19	243	1887	90	88	2100	70	
Future Volume (vph)	117	159	206	105	147	19	243	1887	90	88	2100	70	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0		
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95		
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00		
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00		
Frt	1.00	0.92		1.00	0.98		1.00	1.00	0.85	1.00	0.99		
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1798	3264		1799	3516		1805	3574	1579	1736	3519		
Flt Permitted	0.60	1.00		0.25	1.00		0.95	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1127	3264		479	3516		1805	3574	1579	1736	3519		
Peak-hour factor, PHF	0.86	0.78	0.79	0.91	0.85	0.60	0.88	0.90	0.88	0.75	0.90	0.75	
Adj. Flow (vph)	136	204	261	115	173	32	276	2097	102	117	2333	93	
RTOR Reduction (vph)	0	97	0	0	12	0	0	0	24	0	2	0	
Lane Group Flow (vph)	136	368	0	115	193	0	276	2097	78	117	2424	0	
Confl. Peds. (#/hr)	3		5	5		3	5		18	18		5	
Confl. Bikes (#/hr)			2						7			8	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	4%	2%	0%	
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA		
Protected Phases		8			8		5	5 6		7	6 7		
Permitted Phases	8			8					5 6				
Actuated Green, G (s)	24.0	24.0		24.0	24.0		9.0	91.0	91.0	2.0	84.0		
Effective Green, g (s)	24.0	24.0		24.0	24.0		9.0	91.0	91.0	2.0	84.0		
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.07	0.67	0.67	0.01	0.62		
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0			6.0			
Vehicle Extension (s)	2.0	2.0		2.0	2.0		1.0			1.0			
Lane Grp Cap (vph)	200	580		85	625		120	2409	1064	25	2189		
v/s Ratio Prot		0.11			0.06		c0.15	0.59		c0.07	c0.69		
v/s Ratio Perm	0.12			c0.24					0.05				
v/c Ratio	0.68	0.63		1.35	0.31		2.30	0.87	0.07	4.68	1.11		
Uniform Delay, d1	51.9	51.4		55.5	48.3		63.0	17.4	7.5	66.5	25.5		
Progression Factor	1.00	1.00		1.00	1.00		1.18	0.49	0.11	0.70	0.18		
Incremental Delay, d2	17.1	5.2		218.0	1.3		587.4	0.4	0.0	1664.2	49.0		
Delay (s)	69.0	56.7		273.5	49.6		661.7	8.9	0.8	1710.8	53.5		
Level of Service	E	E		F	D		F	A	A	F	D		
Approach Delay (s)		59.4			130.0			81.3			129.8		
Approach LOS		E			F			F			F		
Intersection Summary													
HCM 2000 Control Delay			102.5									HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.35										
Actuated Cycle Length (s)			135.0									Sum of lost time (s)	24.0
Intersection Capacity Utilization			126.3%									ICU Level of Service	H
Analysis Period (min)			15										
c Critical Lane Group													






















Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	134	183	274	43	2351	284	2209
v/c Ratio	0.81	0.76	0.71	0.77	1.06	1.99	0.86
Control Delay	78.3	70.7	43.9	93.2	62.8	473.5	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.3	70.7	43.9	93.2	62.8	473.5	4.8
Queue Length 50th (ft)	99	152	152	25	~1189	~349	134
Queue Length 95th (ft)	105	196	127	#91	#1322	m#315	m125
Internal Link Dist (ft)	270		212		208		469
Turn Bay Length (ft)		120		95		125	
Base Capacity (vph)	166	242	385	56	2217	143	2562
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.76	0.71	0.77	1.06	1.99	0.86

Intersection Summary

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

5: S Lamar Blvd & Private Driveway/Panther Trail
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	14	39	139	9	207	34	2057	160	247	2097	17
Future Volume (veh/h)	43	14	39	139	9	207	34	2057	160	247	2097	17
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	1.00		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1814	1900	1900	1880	1900	1827	1881	1900
Adj Flow Rate, veh/h	61	23	50	183	15	259	43	2165	186	284	2184	25
Adj No. of Lanes	0	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.70	0.60	0.78	0.76	0.60	0.80	0.79	0.95	0.86	0.87	0.96	0.69
Percent Heavy Veh, %	0	0	0	0	0	5	0	1	2	4	1	0
Cap, veh/h	58	27	27	234	17	295	105	2093	177	144	2600	30
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.63	0.63	0.63	0.05	0.72	0.72
Sat Flow, veh/h	92	129	131	1348	82	1421	178	3325	281	1740	3619	41
Grp Volume(v), veh/h	134	0	0	183	0	274	43	1145	1206	284	1076	1133
Grp Sat Flow(s),veh/h/ln	352	0	0	1348	0	1503	178	1786	1820	1740	1787	1873
Q Serve(g_s), s	4.1	0.0	0.0	0.0	0.0	23.9	30.6	85.0	85.0	7.0	57.5	58.2
Cycle Q Clear(g_c), s	28.0	0.0	0.0	28.0	0.0	23.9	76.8	85.0	85.0	7.0	57.5	58.2
Prop In Lane	0.46		0.37	1.00		0.95	1.00		0.15	1.00		0.02
Lane Grp Cap(c), veh/h	112	0	0	234	0	312	105	1124	1146	144	1284	1346
V/C Ratio(X)	1.20	0.00	0.00	0.78	0.00	0.88	0.41	1.02	1.05	1.98	0.84	0.84
Avail Cap(c_a), veh/h	112	0	0	234	0	312	105	1124	1146	144	1284	1346
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.2	0.0	0.0	53.7	0.0	51.9	45.2	25.0	25.0	47.5	13.4	13.5
Incr Delay (d2), s/veh	148.2	0.0	0.0	22.3	0.0	27.8	11.5	31.6	41.5	464.3	6.6	6.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	0.0	0.0	8.3	0.0	12.3	1.8	51.4	55.5	23.9	30.2	32.0
LnGrp Delay(d),s/veh	207.5	0.0	0.0	76.0	0.0	79.6	56.7	56.6	66.5	511.8	20.1	20.1
LnGrp LOS	F			E		E	E	F	F	F	C	C
Approach Vol, veh/h		134			457			2394			2493	
Approach Delay, s/veh		207.5			78.2			61.6			76.1	
Approach LOS		F			E			E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	12.0	90.0		33.0		102.0		33.0				
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s	7.0	85.0		28.0		97.0		28.0				
Max Q Clear Time (g_c+I1), s	9.0	87.0		30.0		60.2		30.0				
Green Ext Time (p_c), s	0.0	0.0		0.0		7.2		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				73.1								
HCM 2010 LOS				E								

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Driveway B/Private Driveway
Queues

Phase 2-2031 Site+Forecasted PM



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL2	SBT	NWL	NWR
Lane Group Flow (vph)	624	545	192	186	726	217	2060	703	1521
v/c Ratio	2.70	1.28	1.10	0.52	0.61	1.43	0.68	3.27	1.40
Control Delay	798.0	170.1	139.3	18.4	38.7	267.8	27.7	1051.4	214.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	798.0	170.1	139.3	18.4	38.7	267.8	27.7	1051.4	214.9
Queue Length 50th (ft)	~784	~409	~152	27	268	~246	379	~1042	~908
Queue Length 95th (ft)	#897	#397	#286	13	334	#386	421	#824	#986
Internal Link Dist (ft)		165		155	240		328	179	
Turn Bay Length (ft)						160			
Base Capacity (vph)	231	425	174	358	1195	152	3033	215	1088
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	2.70	1.28	1.10	0.52	0.61	1.43	0.68	3.27	1.40

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.























Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Driveway B/Private Driveway
 HCM Signalized Intersection Capacity Analysis

Phase 2-2031 Site+Forecasted PM

												
Movement	EBL	EBT	EBR2	WBL	WBT	WBR	NBT	SBL2	SBT	SBR	NWL	NWR
Lane Configurations												
Traffic Volume (vph)	512	42	424	182	18	104	668	187	1763	110	436	1145
Future Volume (vph)	512	42	424	182	18	104	668	187	1763	110	436	1145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		5.5	7.0	5.5		7.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		0.95	1.00	0.86		1.00	0.88
Frbp, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.87		1.00	0.88		1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1804	1622		1787	1616		3574	1805	6390		1805	2842
Flt Permitted	0.42	1.00		0.22	1.00		1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	799	1622		407	1616		3574	1805	6390		1805	2842
Peak-hour factor, PHF	0.82	0.72	0.87	0.95	0.55	0.68	0.92	0.86	0.93	0.67	0.62	0.86
Adj. Flow (vph)	624	58	487	192	33	153	726	217	1896	164	703	1331
RTOR Reduction (vph)	0	195	0	0	129	0	0	0	11	0	0	137
Lane Group Flow (vph)	624	350	0	192	57	0	726	217	2049	0	703	1384
Confl. Peds. (#/hr)	2		1	1		2				10	10	
Confl. Bikes (#/hr)			1			2				1		
Heavy Vehicles (%)	0%	0%	0%	1%	0%	2%	1%	0%	1%	0%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA		NA	Prot	NA		Prot	Prot
Protected Phases	7	4		3	8		2!	1	6		5	2!
Permitted Phases	4			8								
Actuated Green, G (s)	27.0	18.5		27.0	18.5		43.5	11.0	61.5		15.5	43.5
Effective Green, g (s)	27.0	18.5		27.0	18.5		43.5	11.0	61.5		15.5	43.5
Actuated g/C Ratio	0.21	0.14		0.21	0.14		0.33	0.08	0.47		0.12	0.33
Clearance Time (s)	6.5	6.5		6.5	6.5		5.5	7.0	5.5		7.5	5.5
Vehicle Extension (s)	1.0	3.0		3.0	3.0		3.0	2.0	2.0		3.0	3.0
Lane Grp Cap (vph)	231	230		174	229		1195	152	3022		215	950
v/s Ratio Prot	c0.18	0.22		0.07	0.04		0.20	c0.12	0.32		c0.39	c0.49
v/s Ratio Perm	c0.38			0.16								
v/c Ratio	2.70	1.52		1.10	0.25		0.61	1.43	0.68		3.27	1.46
Uniform Delay, d1	50.4	55.8		49.1	49.6		36.1	59.5	26.6		57.2	43.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	777.8	256.3		98.6	2.6		2.3	226.1	1.2		1033.3	211.4
Delay (s)	828.2	312.1		147.7	52.2		38.4	285.6	27.8		1090.6	254.7
Level of Service	F	F		F	D		D	F	C		F	F
Approach Delay (s)		587.5			100.7		38.4		52.4		518.9	
Approach LOS		F			F		D		D		F	

Intersection Summary

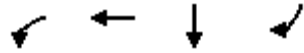
HCM 2000 Control Delay	299.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.09		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	33.0
Intersection Capacity Utilization	164.6%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group



Movement	NWR2
Lane Configurations	
Traffic Volume (vph)	114
Future Volume (vph)	114
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frbp, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.60
Adj. Flow (vph)	190
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	2
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Lane Group	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	724	1524	1931	395
v/c Ratio	0.90	0.95	0.83	0.25
Control Delay	12.6	14.0	43.1	0.4
Queue Delay	0.1	0.0	0.6	0.0
Total Delay	12.7	14.0	43.7	0.4
Queue Length 50th (ft)	595	635	446	0
Queue Length 95th (ft)	m5	m25	479	0
Internal Link Dist (ft)		23	453	
Turn Bay Length (ft)				
Base Capacity (vph)	803	1607	2325	1595
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	2	1	132	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.90	0.95	0.88	0.25

Intersection Summary

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

7: S Lamar Blvd & Capity of Texas Hwy
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations				↖	↗						↑↑↑	↗	
Traffic Volume (vph)	0	0	0	724	1133	0	0	0	0	0	1699	359	
Future Volume (vph)	0	0	0	724	1133	0	0	0	0	0	1699	359	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				6.0	6.0						6.0	4.0	
Lane Util. Factor				0.91	0.91						0.86	1.00	
Frbp, ped/bikes				1.00	1.00						1.00	0.99	
Flpb, ped/bikes				1.00	1.00						1.00	1.00	
Frt				1.00	1.00						1.00	0.85	
Flt Protected				0.95	0.99						1.00	1.00	
Satd. Flow (prot)				1626	3376						6408	1595	
Flt Permitted				0.95	0.99						1.00	1.00	
Satd. Flow (perm)				1626	3376						6408	1595	
Peak-hour factor, PHF	0.92	0.92	0.92	0.82	0.83	0.92	0.92	0.92	0.92	0.92	0.88	0.91	
Adj. Flow (vph)	0	0	0	883	1365	0	0	0	0	0	1931	395	
RTOR Reduction (vph)	0	0	0	56	56	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	668	1468	0	0	0	0	0	1931	395	
Confl. Bikes (#/hr)												1	
Heavy Vehicles (%)	2%	2%	2%	1%	2%	0%	2%	2%	2%	2%	2%	0%	
Turn Type				custom	NA						NA	Free	
Protected Phases				1 2 4 8	1 2 4 8						5 6 7		
Permitted Phases				3	3							Free	
Actuated Green, G (s)				63.0	63.0						56.0	135.0	
Effective Green, g (s)				63.0	63.0						56.0	135.0	
Actuated g/C Ratio				0.47	0.47						0.41	1.00	
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				831	1725						2658	1595	
v/s Ratio Prot				0.37	c0.39						c0.30		
v/s Ratio Perm				0.04	0.04							0.25	
v/c Ratio				0.80	0.85						0.73	0.25	
Uniform Delay, d1				30.7	31.8						33.1	0.0	
Progression Factor				0.41	0.43						1.00	1.00	
Incremental Delay, d2				0.5	0.4						1.8	0.4	
Delay (s)				13.3	14.0						34.9	0.4	
Level of Service				B	B						C	A	
Approach Delay (s)		0.0			13.8			0.0			29.0		
Approach LOS		A			B			A			C		
Intersection Summary													
HCM 2000 Control Delay			21.5		HCM 2000 Level of Service						C		
HCM 2000 Volume to Capacity ratio			1.04										
Actuated Cycle Length (s)			135.0		Sum of lost time (s)					40.0			
Intersection Capacity Utilization			91.1%		ICU Level of Service					F			
Analysis Period (min)			15										
c Critical Lane Group													















Lane Group	WBT	NBL	NBT
Lane Group Flow (vph)	1756	395	1248
v/c Ratio	1.61	0.41	0.42
Control Delay	309.8	5.6	6.8
Queue Delay	1.0	1.6	0.7
Total Delay	310.8	7.2	7.5
Queue Length 50th (ft)	~804	0	10
Queue Length 95th (ft)	#891	m15	m17
Internal Link Dist (ft)	133		295
Turn Bay Length (ft)			
Base Capacity (vph)	1092	974	3001
Starvation Cap Reductn	0	397	1294
Spillback Cap Reductn	195	64	97
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.96	0.68	0.73

Intersection Summary

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

8: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↑	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1563	0	426	1022	0	0	0	0
Future Volume (vph)	0	0	0	0	1563	0	426	1022	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0		6.0	6.0				
Lane Util. Factor					0.91		0.86	0.86				
Frt					1.00		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					5085		1537	4873				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					5085		1537	4873				
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.89	0.89	0.82	0.91	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1756	0	520	1123	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	40	40	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1756	0	355	1208	0	0	0	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	0%	2%	2%	2%	2%
Turn Type					NA		custom	NA				
Protected Phases					1 7 8		2 3 4 5	2 3 4 5				
Permitted Phases							6	6				
Actuated Green, G (s)					32.0		85.0	85.0				
Effective Green, g (s)					30.0		83.0	83.0				
Actuated g/C Ratio					0.22		0.61	0.61				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)					1130		1013	3212				
v/s Ratio Prot					c0.35		0.11	c0.12				
v/s Ratio Perm							0.12	0.13				
v/c Ratio					1.55		0.35	0.38				
Uniform Delay, d1					52.5		12.8	13.0				
Progression Factor					0.89		0.72	0.69				
Incremental Delay, d2					253.3		0.0	0.0				
Delay (s)					299.9		9.2	8.9				
Level of Service					F		A	A				
Approach Delay (s)		0.0			299.9			9.0			0.0	
Approach LOS		A			F			A			A	
Intersection Summary												
HCM 2000 Control Delay			159.3				HCM 2000 Level of Service		F			
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			135.0				Sum of lost time (s)		40.0			
Intersection Capacity Utilization			88.4%				ICU Level of Service		E			
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	EBT	SBL	SBT
Lane Group Flow (vph)	1582	648	2007
v/c Ratio	1.33	0.64	0.64
Control Delay	194.2	7.1	6.7
Queue Delay	0.3	1.1	0.4
Total Delay	194.5	8.1	7.2
Queue Length 50th (ft)	~657	41	246
Queue Length 95th (ft)	#742	m481	m243
Internal Link Dist (ft)	69		291
Turn Bay Length (ft)			
Base Capacity (vph)	1191	1018	3156
Starvation Cap Reductn	0	168	578
Spillback Cap Reductn	71	56	88
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.41	0.76	0.78

Intersection Summary

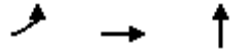
- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

9: S Lamar Blvd & Capity of Texas Hwy
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↑↑↑								↘	↑↑↑		
Traffic Volume (vph)	0	1408	0	0	0	0	0	0	0	905	1481	0	
Future Volume (vph)	0	1408	0	0	0	0	0	0	0	905	1481	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		2.0								6.0	6.0		
Lane Util. Factor		0.91								0.86	0.86		
Frbp, ped/bikes		1.00								1.00	1.00		
Flpb, ped/bikes		1.00								1.00	1.00		
Frt		1.00								1.00	1.00		
Flt Protected		1.00								0.95	0.99		
Satd. Flow (prot)		5187								1522	4838		
Flt Permitted		1.00								0.95	0.99		
Satd. Flow (perm)		5187								1522	4838		
Peak-hour factor, PHF	0.92	0.89	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.88	0.91	0.92	
Adj. Flow (vph)	0	1582	0	0	0	0	0	0	0	1028	1627	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	37	37	0	
Lane Group Flow (vph)	0	1582	0	0	0	0	0	0	0	611	1970	0	
Confl. Bikes (#/hr)			1										
Heavy Vehicles (%)	2%	0%	0%	2%	2%	2%	2%	2%	2%	2%	0%	0%	
Turn Type		NA								custom	NA		
Protected Phases		3 4 5								1 2 6 8	1 2 6 8		
Permitted Phases										7	7		
Actuated Green, G (s)		27.0								88.0	88.0		
Effective Green, g (s)		21.0								88.0	88.0		
Actuated g/C Ratio		0.16								0.65	0.65		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)		806								1059	3368		
v/s Ratio Prot		c0.30								0.37	c0.38		
v/s Ratio Perm										0.03	0.03		
v/c Ratio		1.96								0.58	0.59		
Uniform Delay, d1		57.0								13.1	13.2		
Progression Factor		1.00								0.66	0.66		
Incremental Delay, d2		437.8								0.2	0.1		
Delay (s)		494.8								8.9	8.8		
Level of Service		F								A	A		
Approach Delay (s)		494.8			0.0			0.0			8.8		
Approach LOS		F			A			A			A		
Intersection Summary													
HCM 2000 Control Delay			190.3		HCM 2000 Level of Service						F		
HCM 2000 Volume to Capacity ratio			1.01										
Actuated Cycle Length (s)			135.0		Sum of lost time (s)					40.0			
Intersection Capacity Utilization			70.8%		ICU Level of Service					C			
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBL	EBT	NBT
Lane Group Flow (vph)	589	1823	1742
v/c Ratio	0.51	0.77	1.88
Control Delay	1.5	10.2	431.1
Queue Delay	23.9	47.8	0.2
Total Delay	25.4	57.9	431.2
Queue Length 50th (ft)	2	746	~671
Queue Length 95th (ft)	m0	m564	#670
Internal Link Dist (ft)		38	673
Turn Bay Length (ft)			
Base Capacity (vph)	1165	2362	926
Starvation Cap Reductn	585	801	0
Spillback Cap Reductn	2	1	32
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.02	1.17	1.95

Intersection Summary

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

10: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	582	1705	0	0	0	0	0	1088	358	0	0	0
Future Volume (vph)	582	1705	0	0	0	0	0	1088	358	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0						6.0				
Lane Util. Factor	0.91	0.91						0.86				
Frbp, ped/bikes	1.00	1.00						1.00				
Flpb, ped/bikes	1.00	1.00						1.00				
Frt	1.00	1.00						0.96				
Flt Protected	0.95	1.00						1.00				
Satd. Flow (prot)	1643	3419						6271				
Flt Permitted	0.95	1.00						1.00				
Satd. Flow (perm)	1643	3419						6271				
Peak-hour factor, PHF	0.89	0.97	0.92	0.92	0.92	0.92	0.92	0.83	0.83	0.92	0.92	0.92
Adj. Flow (vph)	654	1758	0	0	0	0	0	1311	431	0	0	0
RTOR Reduction (vph)	45	33	0	0	0	0	0	41	0	0	0	0
Lane Group Flow (vph)	544	1790	0	0	0	0	0	1701	0	0	0	0
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	0%	1%	2%	2%	2%	2%	2%	0%	0%	2%	2%	2%
Turn Type	custom	NA						NA				
Protected Phases	4 5 6 8	4 5 6 8						1 2 3				
Permitted Phases	7	7										
Actuated Green, G (s)	93.0	93.0						26.0				
Effective Green, g (s)	93.0	93.0						26.0				
Actuated g/C Ratio	0.69	0.69						0.19				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	1204	2507						1207				
v/s Ratio Prot	0.31	c0.49						c0.27				
v/s Ratio Perm	0.02	0.04										
v/c Ratio	0.45	0.71						1.41				
Uniform Delay, d1	9.5	12.9						54.5				
Progression Factor	0.26	1.08						1.00				
Incremental Delay, d2	0.0	0.1						189.1				
Delay (s)	2.5	13.9						243.6				
Level of Service	A	B						F				
Approach Delay (s)		11.1			0.0			243.6			0.0	
Approach LOS		B			A			F			A	
Intersection Summary												
HCM 2000 Control Delay			108.6					HCM 2000 Level of Service		F		
HCM 2000 Volume to Capacity ratio			1.12									
Actuated Cycle Length (s)			135.0					Sum of lost time (s)		40.0		
Intersection Capacity Utilization			74.5%					ICU Level of Service		D		
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	897	1845	31	183	220	204
v/c Ratio	3.16	3.16	0.08	0.37	0.14	0.18
Control Delay	998.9	996.9	0.4	7.8	1.3	26.9
Queue Delay	2.6	1.1	0.0	3.1	0.0	0.3
Total Delay	1001.5	998.1	0.4	10.9	1.3	27.3
Queue Length 50th (ft)	~1451	~1493	0	19	4	32
Queue Length 95th (ft)	#1683	#1637	0	m19	m4	43
Internal Link Dist (ft)		364			236	206
Turn Bay Length (ft)						
Base Capacity (vph)	284	583	392	516	1610	1117
Starvation Cap Reductn	0	0	0	238	0	0
Spillback Cap Reductn	51	79	0	0	0	495
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	3.85	3.66	0.08	0.66	0.14	0.33

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.




















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

Queue shown is maximum after two cycles.

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

11: West Gate Blvd & US 290 WBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted PM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	0	0	1385	1098	22	329	29	0	0	96	51	
Future Volume (vph)	0	0	0	1385	1098	22	329	29	0	0	96	51	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				5.5	5.5	5.5	5.5	6.0			6.0		
Lane Util. Factor				0.91	0.91	1.00	0.91	0.91			0.91		
Frbp, ped/bikes				1.00	1.00	0.99	1.00	1.00			0.99		
Flpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00		
Frt				1.00	1.00	0.85	1.00	1.00			0.95		
Flt Protected				0.95	0.98	1.00	0.95	0.96			1.00		
Satd. Flow (prot)				1643	3374	1487	1625	3263			4775		
Flt Permitted				0.95	0.98	1.00	0.62	0.65			1.00		
Satd. Flow (perm)				1643	3374	1487	1058	2199			4775		
Peak-hour factor, PHF	0.92	0.92	0.92	0.88	0.94	0.70	0.90	0.79	0.92	0.92	0.74	0.69	
Adj. Flow (vph)	0	0	0	1574	1168	31	366	37	0	0	130	74	
RTOR Reduction (vph)	0	0	0	0	0	26	0	0	0	0	57	0	
Lane Group Flow (vph)	0	0	0	897	1845	5	183	220	0	0	147	0	
Confl. Peds. (#/hr)							2					2	
Confl. Bikes (#/hr)						2							
Heavy Vehicles (%)	2%	2%	2%	0%	1%	7%	1%	5%	2%	2%	0%	6%	
Turn Type				Perm	NA	Perm	custom	NA				NA	
Protected Phases					4 5			1 2 6 7				1 2	
Permitted Phases				4 5		4 5	6 7						
Actuated Green, G (s)				22.0	22.0	22.0	61.6	96.5				29.4	
Effective Green, g (s)				22.0	22.0	22.0	61.6	85.5				29.4	
Actuated g/C Ratio				0.17	0.17	0.17	0.47	0.66				0.23	
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				278	570	251	501	1446				1079	
v/s Ratio Prot												0.03	
v/s Ratio Perm				0.55	0.55	0.00	c0.17	c0.10					
v/c Ratio				3.23	3.24	0.02	0.37	0.15				0.14	
Uniform Delay, d1				54.0	54.0	45.0	21.8	8.5				40.2	
Progression Factor				1.00	1.00	1.00	0.33	0.24				1.00	
Incremental Delay, d2				1011.3	1011.1	0.2	0.1	0.0				0.0	
Delay (s)				1065.3	1065.1	45.2	7.2	2.0				40.2	
Level of Service				F	F	D	A	A				D	
Approach Delay (s)		0.0			1053.8			4.4				40.2	
Approach LOS		A			F			A				D	
Intersection Summary													
HCM 2000 Control Delay			867.5		HCM 2000 Level of Service							F	
HCM 2000 Volume to Capacity ratio			1.02										
Actuated Cycle Length (s)			130.0		Sum of lost time (s)						34.0		
Intersection Capacity Utilization			107.9%		ICU Level of Service						G		
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	37	1088	712	332	135	1593
v/c Ratio	0.05	0.81	1.04	0.67	0.25	0.85
Control Delay	24.3	40.1	87.1	15.8	59.6	36.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	48.5
Total Delay	24.3	40.1	87.1	15.8	59.6	84.6
Queue Length 50th (ft)	19	414	~296	30	89	406
Queue Length 95th (ft)	31	444	#430	104	m35	m4
Internal Link Dist (ft)		52	369			236
Turn Bay Length (ft)						
Base Capacity (vph)	699	1327	682	494	532	1870
Starvation Cap Reductn	0	0	0	0	0	820
Spillback Cap Reductn	1	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.82	1.04	0.67	0.25	1.52

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

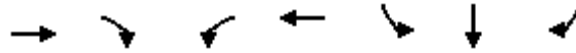
Queue shown is maximum after two cycles.

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

12: West Gate Blvd & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	25	641	291	0	0	0	0	345	552	111	1402	0	
Future Volume (vph)	25	641	291	0	0	0	0	345	552	111	1402	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.0	6.0						6.0	6.0	5.5	5.5		
Lane Util. Factor	1.00	0.95						0.91	0.91	1.00	0.95		
Frbp, ped/bikes	1.00	1.00						0.99	0.99	1.00	1.00		
Flpb, ped/bikes	1.00	1.00						1.00	1.00	1.00	1.00		
Frt	1.00	0.96						0.93	0.85	1.00	1.00		
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1805	3405						3161	1433	1805	3610		
Flt Permitted	0.95	1.00						1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1805	3405						3161	1433	1805	3610		
Peak-hour factor, PHF	0.67	0.83	0.92	0.92	0.92	0.92	0.92	0.91	0.83	0.82	0.88	0.92	
Adj. Flow (vph)	37	772	316	0	0	0	0	379	665	135	1593	0	
RTOR Reduction (vph)	0	10	0	0	0	0	0	122	240	0	0	0	
Lane Group Flow (vph)	37	1078	0	0	0	0	0	590	92	135	1593	0	
Confl. Peds. (#/hr)			1						1	1			
Confl. Bikes (#/hr)			1						1				
Heavy Vehicles (%)	0%	1%	1%	2%	2%	2%	2%	1%	1%	0%	0%	0%	
Turn Type	Split	NA						NA	Perm	Prot	NA		
Protected Phases	1 7	1 7						5 6		2 4	2 4 5 6		
Permitted Phases									5 6				
Actuated Green, G (s)	51.1	51.1						23.5	23.5	38.4	67.4		
Effective Green, g (s)	45.6	45.6						23.5	23.5	38.4	61.4		
Actuated g/C Ratio	0.35	0.35						0.18	0.18	0.30	0.47		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)	633	1194						571	259	533	1705		
v/s Ratio Prot	0.02	c0.32						c0.19		0.07	c0.44		
v/s Ratio Perm									0.06				
v/c Ratio	0.06	0.90						1.03	0.36	0.25	0.93		
Uniform Delay, d1	28.0	40.1						53.2	46.6	34.9	32.4		
Progression Factor	1.00	1.00						1.00	1.00	1.66	1.29		
Incremental Delay, d2	0.0	9.5						46.5	3.8	0.1	1.3		
Delay (s)	28.0	49.6						99.7	50.4	58.1	43.0		
Level of Service	C	D						F	D	E	D		
Approach Delay (s)		48.9			0.0			84.0			44.2		
Approach LOS		D			A			F			D		
Intersection Summary													
HCM 2000 Control Delay			56.2									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			1.08										
Actuated Cycle Length (s)			130.0									Sum of lost time (s)	34.0
Intersection Capacity Utilization			107.9%									ICU Level of Service	G
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	3404	1749	357	3329	373	391	371
v/c Ratio	1.05	0.62	1.62	0.84	1.42	1.45	0.23
Control Delay	62.2	1.0	322.7	19.5	261.6	270.4	0.3
Queue Delay	22.9	0.0	0.0	5.8	0.0	0.0	0.0
Total Delay	85.2	1.0	322.7	25.3	261.6	270.4	0.3
Queue Length 50th (ft)	~1591	0	~566	1524	~623	~657	0
Queue Length 95th (ft)	#1633	0	m#555	m1287	#803	#866	0
Internal Link Dist (ft)	834			1419		192	
Turn Bay Length (ft)			950				
Base Capacity (vph)	3252	2814	220	3966	262	270	1595
Starvation Cap Reductn	0	0	0	604	0	0	0
Spillback Cap Reductn	667	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.32	0.62	1.62	0.99	1.42	1.45	0.23

Intersection Summary

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

13: Capital of Texas Hwy & Mopac SBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑↑	↑	↑↑↑					↑	↑	↑
Traffic Volume (vph)	0	3268	1644	282	3196	0	0	0	0	386	277	286
Future Volume (vph)	0	3268	1644	282	3196	0	0	0	0	386	277	286
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	4.0	7.0	7.0					6.5	6.5	4.0
Lane Util. Factor		0.91	0.88	1.00	0.91					0.95	0.95	1.00
Frbp, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	0.99
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		5136	2814	1787	5136					1715	1773	1595
Flt Permitted		1.00	1.00	0.03	1.00					0.95	0.99	1.00
Satd. Flow (perm)		5136	2814	62	5136					1715	1773	1595
Peak-hour factor, PHF	0.92	0.96	0.94	0.79	0.96	0.92	0.92	0.92	0.92	0.86	0.88	0.77
Adj. Flow (vph)	0	3404	1749	357	3329	0	0	0	0	449	315	371
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	3404	1749	357	3329	0	0	0	0	373	391	371
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	1%	1%	1%	1%	2%	2%	2%	2%	0%	1%	0%
Turn Type		NA	Free	pm+pt	NA					Perm	NA	Free
Protected Phases		2		1	6						8	
Permitted Phases			Free	6						8		Free
Actuated Green, G (s)		114.0	180.0	139.0	139.0					27.5	27.5	180.0
Effective Green, g (s)		114.0	180.0	139.0	139.0					27.5	27.5	180.0
Actuated g/C Ratio		0.63	1.00	0.77	0.77					0.15	0.15	1.00
Clearance Time (s)		7.0		7.0	7.0					6.5	6.5	
Vehicle Extension (s)		4.0		2.0	4.0					2.0	2.0	
Lane Grp Cap (vph)		3252	2814	220	3966					262	270	1595
v/s Ratio Prot		0.66		c0.16	0.65							
v/s Ratio Perm			0.62	c1.09						0.22	0.22	0.23
v/c Ratio		1.05	0.62	1.62	0.84					1.42	1.45	0.23
Uniform Delay, d1		33.0	0.0	71.1	13.3					76.2	76.2	0.0
Progression Factor		1.00	1.00	1.16	1.42					1.00	1.00	1.00
Incremental Delay, d2		29.8	1.0	282.1	0.2					211.5	221.3	0.3
Delay (s)		62.8	1.0	364.5	19.0					287.7	297.5	0.3
Level of Service		E	A	F	B					F	F	A
Approach Delay (s)		41.8			52.5			0.0			197.2	
Approach LOS		D			D			A			F	
Intersection Summary												
HCM 2000 Control Delay			63.4			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			1.62									
Actuated Cycle Length (s)			180.0			Sum of lost time (s)				20.5		
Intersection Capacity Utilization			128.5%			ICU Level of Service				H		
Analysis Period (min)			15									

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	432	3581	2474	2741	1220	130	477
v/c Ratio	1.25	1.40	0.95	1.71	1.15	0.33	1.25
Control Delay	161.9	201.6	36.6	341.7	139.5	63.3	180.1
Queue Delay	0.0	0.0	4.9	0.0	0.0	0.0	0.0
Total Delay	161.9	201.6	41.5	341.7	139.5	63.3	180.1
Queue Length 50th (ft)	~580	~2956	934	~2904	~598	132	~636
Queue Length 95th (ft)	m#513	m#2629	m557	m#1431	#641	198	#750
Internal Link Dist (ft)		1419	756			675	
Turn Bay Length (ft)					300		
Base Capacity (vph)	346	2561	2596	1599	1060	395	381
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	106	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.25	1.40	0.99	1.71	1.15	0.33	1.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

























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

Queue shown is maximum after two cycles.

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

14: Mopac NBFR & Capital of Texas Hwy
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			  		  					
Traffic Volume (veh/h)	380	3366	0	0	2425	2522	1049	114	391	0	0	0
Future Volume (veh/h)	380	3366	0	0	2425	2522	1049	114	391	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1881	0	0	1881	1881	1900	1900	1881			
Adj Flow Rate, veh/h	432	3581	0	0	2474	0	1220	130	0			
Adj No. of Lanes	1	2	0	0	3	1	3	1	1			
Peak Hour Factor	0.88	0.94	0.92	0.92	0.98	0.92	0.86	0.88	0.82			
Percent Heavy Veh, %	2	1	0	0	1	1	0	0	1			
Cap, veh/h	363	2562	0	0	2553	795	1063	396	333			
Arrive On Green	0.24	0.95	0.00	0.00	0.50	0.00	0.21	0.21	0.00			
Sat Flow, veh/h	1774	3668	0	0	5305	1599	5103	1900	1599			
Grp Volume(v), veh/h	432	3581	0	0	2474	0	1220	130	0			
Grp Sat Flow(s),veh/h/ln	1774	1787	0	0	1712	1599	1701	1900	1599			
Q Serve(g_s), s	32.5	129.0	0.0	0.0	84.1	0.0	37.5	10.5	0.0			
Cycle Q Clear(g_c), s	32.5	129.0	0.0	0.0	84.1	0.0	37.5	10.5	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	363	2562	0	0	2553	795	1063	396	333			
V/C Ratio(X)	1.19	1.40	0.00	0.00	0.97	0.00	1.15	0.33	0.00			
Avail Cap(c_a), veh/h	363	2562	0	0	2596	808	1063	396	333			
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	0.00	1.00	1.00	0.00			
Uniform Delay (d), s/veh	66.5	4.2	0.0	0.0	43.9	0.0	71.3	60.5	0.0			
Incr Delay (d2), s/veh	88.3	179.3	0.0	0.0	11.2	0.0	77.7	0.2	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			
%ile BackOfQ(50%),veh/ln	26.9	117.9	0.0	0.0	42.3	0.0	25.3	5.5	0.0			
LnGrp Delay(d),s/veh	154.8	183.5	0.0	0.0	55.1	0.0	148.9	60.7	0.0			
LnGrp LOS	F	F			E		F	E				
Approach Vol, veh/h		4013			2474			1350				
Approach Delay, s/veh		180.4			55.1			140.4				
Approach LOS		F			E			F				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		136.0		44.0	39.5	96.5						
Change Period (Y+Rc), s		7.0		6.5	7.0	7.0						
Max Green Setting (Gmax), s		129.0		37.5	31.0	91.0						
Max Q Clear Time (g_c+1), s		131.0		39.5	34.5	86.1						
Green Ext Time (p_c), s		0.0		0.0	0.0	3.4						
Intersection Summary												
HCM 2010 Ctrl Delay				134.0								
HCM 2010 LOS				F								



Lane Group	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	448	4980	67	403	6472
v/c Ratio	0.84	1.31	0.06	1.19	1.71
Control Delay	84.7	167.1	2.3	155.4	341.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	84.7	167.1	2.3	155.4	341.2
Queue Length 50th (ft)	293	~2760	5	~570	~4115
Queue Length 95th (ft)	306	#2732	9	m#436	m#3144
Internal Link Dist (ft)		1281			1273
Turn Bay Length (ft)			430	550	
Base Capacity (vph)	536	3794	1160	340	3794
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.84	1.31	0.06	1.19	1.71

Intersection Summary

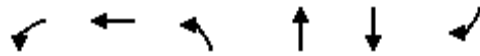
- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

15: Capital of Texas Hwy & Barton Creek Plaza Driveway
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↔↔	↕↕↕	↗	↘	↕↕↕
Traffic Volume (vph)	0	345	4631	43	310	6148
Future Volume (vph)	0	345	4631	43	310	6148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	7.0	7.0	6.0	7.0
Lane Util. Factor		0.88	0.91	1.00	1.00	0.91
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		2842	5136	1553	1805	5136
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		2842	5136	1553	1805	5136
Peak-hour factor, PHF	0.92	0.77	0.93	0.64	0.77	0.95
Adj. Flow (vph)	0	448	4980	67	403	6472
RTOR Reduction (vph)	0	0	0	13	0	0
Lane Group Flow (vph)	0	448	4980	54	403	6472
Heavy Vehicles (%)	2%	0%	1%	4%	0%	1%
Turn Type		Over	NA	Prot	Prot	NA
Protected Phases		5	6	6	5	6
Permitted Phases						
Actuated Green, G (s)		34.0	133.0	133.0	34.0	133.0
Effective Green, g (s)		34.0	133.0	133.0	34.0	133.0
Actuated g/C Ratio		0.19	0.74	0.74	0.19	0.74
Clearance Time (s)		6.0	7.0	7.0	6.0	7.0
Vehicle Extension (s)		2.0	4.0	4.0	2.0	4.0
Lane Grp Cap (vph)		536	3794	1147	340	3794
v/s Ratio Prot		0.16	0.97	0.03	c0.22	c1.26
v/s Ratio Perm						
v/c Ratio		0.84	1.31	0.05	1.19	1.71
Uniform Delay, d1		70.3	23.5	6.4	73.0	23.5
Progression Factor		1.00	1.00	1.00	0.93	1.03
Incremental Delay, d2		10.4	142.6	0.1	99.8	318.3
Delay (s)		80.7	166.1	6.4	167.6	342.5
Level of Service		F	F	A	F	F
Approach Delay (s)	80.7		164.0			332.2
Approach LOS	F		F			F
Intersection Summary						
HCM 2000 Control Delay			254.5		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.60			
Actuated Cycle Length (s)			180.0		Sum of lost time (s)	13.0
Intersection Capacity Utilization			124.6%		ICU Level of Service	H
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	167	1541	149	180	606	113
v/c Ratio	0.18	0.78	0.80	0.28	1.40	0.26
Control Delay	15.2	26.2	53.3	16.6	230.9	8.5
Queue Delay	0.2	0.0	0.0	1.7	2.9	0.0
Total Delay	15.4	26.2	53.3	18.3	233.8	8.5
Queue Length 50th (ft)	69	517	58	70	~710	0
Queue Length 95th (ft)	m104	m585	m53	m80	#927	27
Internal Link Dist (ft)		522		175	200	
Turn Bay Length (ft)			70			90
Base Capacity (vph)	925	1986	189	633	434	443
Starvation Cap Reductn	0	0	0	306	0	0
Spillback Cap Reductn	330	0	0	0	108	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.78	0.79	0.55	1.86	0.26

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.



















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

Queue shown is maximum after two cycles.

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

16: US 290 WBFR & Victory Drive
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted PM

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (vph)	0	0	0	162	1299	150	85	142	0	0	539	85		
Future Volume (vph)	0	0	0	162	1299	150	85	142	0	0	539	85		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)				5.5	5.5		5.5	4.5			4.5	4.5		
Lane Util. Factor				1.00	0.95		1.00	1.00			1.00	1.00		
Frbp, ped/bikes				1.00	1.00		1.00	1.00			1.00	0.98		
Flpb, ped/bikes				1.00	1.00		1.00	1.00			1.00	1.00		
Frt				1.00	0.98		1.00	1.00			1.00	0.85		
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00		
Satd. Flow (prot)				1612	3448		1805	1827			1792	1476		
Flt Permitted				0.95	1.00		0.14	1.00			1.00	1.00		
Satd. Flow (perm)				1612	3448		269	1827			1792	1476		
Peak-hour factor, PHF	0.92	0.92	0.92	0.97	0.95	0.86	0.57	0.79	0.92	0.92	0.89	0.75		
Adj. Flow (vph)	0	0	0	167	1367	174	149	180	0	0	606	113		
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	0	0	0	86		
Lane Group Flow (vph)	0	0	0	167	1534	0	149	180	0	0	606	27		
Confl. Peds. (#/hr)						1	6					6		
Confl. Bikes (#/hr)												3		
Heavy Vehicles (%)	2%	2%	2%	12%	2%	8%	0%	4%	2%	2%	6%	7%		
Turn Type				Split	NA		pm+pt	NA			NA	Perm		
Protected Phases				7 8	7 8		2	1 2 6			1 6			
Permitted Phases							1 2 6					1 6		
Actuated Green, G (s)				77.0	77.0		42.0	47.5			32.7	32.7		
Effective Green, g (s)				77.0	77.0		37.5	42.0			32.7	32.7		
Actuated g/C Ratio				0.57	0.57		0.28	0.31			0.24	0.24		
Clearance Time (s)							5.5							
Vehicle Extension (s)							1.5							
Lane Grp Cap (vph)				919	1966		180	568			434	357		
v/s Ratio Prot				0.10	c0.44		c0.06	0.10			c0.34			
v/s Ratio Perm							0.17					0.02		
v/c Ratio				0.18	0.78		0.83	0.32			1.40	0.08		
Uniform Delay, d1				13.9	22.4		40.7	35.5			51.1	39.5		
Progression Factor				1.06	1.04		0.81	0.49			1.00	1.00		
Incremental Delay, d2				0.0	1.9		21.4	0.1			191.9	0.0		
Delay (s)				14.8	25.3		54.4	17.6			243.1	39.5		
Level of Service				B	C		D	B			F	D		
Approach Delay (s)		0.0			24.3			34.3			211.1			
Approach LOS		A			C			C			F			
Intersection Summary														
HCM 2000 Control Delay			74.2									HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio			1.04											
Actuated Cycle Length (s)			135.0						26.0					
Intersection Capacity Utilization			133.2%										ICU Level of Service	H
Analysis Period (min)			15											
c Critical Lane Group														



Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	2716	183	150	602	180
v/c Ratio	1.34	0.27	0.27	1.06	0.20
Control Delay	189.0	32.8	17.9	58.9	3.5
Queue Delay	0.0	0.0	0.0	14.1	2.7
Total Delay	189.0	32.8	17.9	73.0	6.2
Queue Length 50th (ft)	~1155	115	49	~365	17
Queue Length 95th (ft)	m#1064	154	88	m209	m15
Internal Link Dist (ft)	53	253			175
Turn Bay Length (ft)			125	70	
Base Capacity (vph)	2032	658	554	566	909
Starvation Cap Reductn	0	0	0	26	614
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.34	0.28	0.27	1.11	0.61

Intersection Summary

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

17: Pack Saddle Pass & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↔↔↔						↑	↗	↘	↑		
Traffic Volume (vph)	80	2341	100	0	0	0	0	146	123	524	160	0	
Future Volume (vph)	80	2341	100	0	0	0	0	146	123	524	160	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.0						4.5	4.5	5.5	4.5		
Lane Util. Factor		0.91						1.00	1.00	1.00	1.00		
Frbp, ped/bikes		1.00						1.00	1.00	1.00	1.00		
Flpb, ped/bikes		1.00						1.00	1.00	1.00	1.00		
Frt		0.99						1.00	0.85	1.00	1.00		
Flt Protected		1.00						1.00	1.00	0.95	1.00		
Satd. Flow (prot)		5071						1900	1468	1719	1759		
Flt Permitted		1.00						1.00	1.00	0.55	1.00		
Satd. Flow (perm)		5071						1900	1468	999	1759		
Peak-hour factor, PHF	0.81	0.94	0.79	0.92	0.92	0.92	0.92	0.80	0.82	0.87	0.89	0.92	
Adj. Flow (vph)	99	2490	127	0	0	0	0	182	150	602	180	0	
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	48	0	0	0	
Lane Group Flow (vph)	0	2712	0	0	0	0	0	183	102	602	180	0	
Confl. Bikes (#/hr)			3						1				
Heavy Vehicles (%)	10%	1%	0%	2%	2%	2%	2%	0%	10%	5%	8%	2%	
Turn Type	Split	NA						NA	Prot	D.P+P	NA		
Protected Phases	8	8						1 2 6	1 2 6	7	1 2 6 7		
Permitted Phases										1 2 6			
Actuated Green, G (s)		54.0						47.5	47.5	65.0	69.5		
Effective Green, g (s)		54.0						42.0	42.0	60.5	64.0		
Actuated g/C Ratio		0.40						0.31	0.31	0.45	0.47		
Clearance Time (s)		6.0								5.5			
Vehicle Extension (s)		1.5								1.5			
Lane Grp Cap (vph)		2028						591	456	541	833		
v/s Ratio Prot		c0.53						0.10	0.07	c0.14	0.10		
v/s Ratio Perm										c0.35			
v/c Ratio		1.34						0.31	0.22	1.11	0.22		
Uniform Delay, d1		40.5						35.4	34.4	37.6	20.8		
Progression Factor		1.08						1.00	1.00	0.69	0.20		
Incremental Delay, d2		153.6						0.1	0.1	53.5	0.0		
Delay (s)		197.3						35.6	34.5	79.4	4.1		
Level of Service		F						D	C	E	A		
Approach Delay (s)		197.3			0.0			35.1			62.1		
Approach LOS		F			A			D			E		
Intersection Summary													
HCM 2000 Control Delay			155.6									HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.28										
Actuated Cycle Length (s)			135.0									Sum of lost time (s)	26.0
Intersection Capacity Utilization			133.2%									ICU Level of Service	H
Analysis Period (min)			15										

c Critical Lane Group






















Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	653	1362	680	453	805	1568
v/c Ratio	1.51	1.52	1.15	0.71	0.34	1.16
Control Delay	277.9	274.9	117.2	15.3	5.7	126.1
Queue Delay	0.4	0.2	0.0	55.0	11.3	0.0
Total Delay	278.3	275.1	117.2	70.4	16.9	126.1
Queue Length 50th (ft)	~972	~1017	~610	84	62	~656
Queue Length 95th (ft)	#1239	#1163	#859	m68	m50	#753
Internal Link Dist (ft)		53			174	314
Turn Bay Length (ft)						
Base Capacity (vph)	433	899	593	637	2358	1357
Starvation Cap Reductn	0	0	0	250	1528	0
Spillback Cap Reductn	17	36	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.57	1.58	1.15	1.17	0.97	1.16

Intersection Summary

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

18: US 290 WBFR & Menchaca Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted PM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	0	0	1006	888	660	385	733	0	0	1261	198	
Future Volume (vph)	0	0	0	1006	888	660	385	733	0	0	1261	198	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				6.0	6.0	6.0	6.0	5.0			5.0		
Lane Util. Factor				0.91	0.91	1.00	1.00	0.95			0.91		
Frt				1.00	1.00	0.85	1.00	1.00			0.98		
Flt Protected				0.95	0.98	1.00	0.95	1.00			1.00		
Satd. Flow (prot)				1626	3372	1615	1805	3574			5025		
Flt Permitted				0.95	0.98	1.00	0.95	1.00			1.00		
Satd. Flow (perm)				1626	3372	1615	1805	3574			5025		
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.97	0.85	0.91	0.92	0.92	0.95	0.82	
Adj. Flow (vph)	0	0	0	1070	945	680	453	805	0	0	1327	241	
RTOR Reduction (vph)	0	0	0	0	0	161	0	0	0	0	18	0	
Lane Group Flow (vph)	0	0	0	653	1362	519	453	805	0	0	1550	0	
Heavy Vehicles (%)	2%	2%	2%	1%	1%	0%	0%	1%	2%	2%	1%	0%	
Turn Type				Perm	NA	Perm	Prot	NA			NA		
Protected Phases					8 9		4 13	1 4 13				1	
Permitted Phases				8 9		8 9							
Actuated Green, G (s)				41.0	41.0	41.0	53.0	98.0			40.0		
Effective Green, g (s)				41.0	41.0	41.0	48.0	98.0			40.0		
Actuated g/C Ratio				0.27	0.27	0.27	0.32	0.65			0.27		
Clearance Time (s)											5.0		
Vehicle Extension (s)											1.0		
Lane Grp Cap (vph)				444	921	441	577	2335			1340		
v/s Ratio Prot							c0.25	0.23			c0.31		
v/s Ratio Perm				0.40	0.40	0.32							
v/c Ratio				1.47	1.48	1.18	0.79	0.34			1.16		
Uniform Delay, d1				54.5	54.5	54.5	46.3	11.6			55.0		
Progression Factor				1.00	1.00	1.00	0.35	0.50			1.00		
Incremental Delay, d2				223.8	221.3	100.7	0.6	0.0			79.5		
Delay (s)				278.3	275.8	155.2	16.6	5.8			134.5		
Level of Service				F	F	F	B	A			F		
Approach Delay (s)		0.0			246.0			9.7			134.5		
Approach LOS		A			F			A			F		
Intersection Summary													
HCM 2000 Control Delay			160.5		HCM 2000 Level of Service						F		
HCM 2000 Volume to Capacity ratio			1.17										
Actuated Cycle Length (s)			150.0		Sum of lost time (s)					27.0			
Intersection Capacity Utilization			140.1%		ICU Level of Service					H			
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	294	752	585	1464	693	1835
v/c Ratio	1.07	1.37	1.85	1.33	0.74	0.66
Control Delay	131.0	224.4	420.9	197.6	7.1	1.6
Queue Delay	0.0	0.0	0.0	0.1	52.1	48.3
Total Delay	131.0	224.4	420.9	197.6	59.2	49.8
Queue Length 50th (ft)	~316	~510	~795	~656	99	12
Queue Length 95th (ft)	#474	#642	#1035	#755	m57	m9
Internal Link Dist (ft)		62		300		174
Turn Bay Length (ft)						
Base Capacity (vph)	276	548	317	1099	932	2763
Starvation Cap Reductn	0	0	0	0	365	1254
Spillback Cap Reductn	0	0	0	20	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.07	1.37	1.85	1.36	1.22	1.22

Intersection Summary

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

19: Menchaca Road & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	253	722	538	0	0	0	0	863	461	589	1725	0	
Future Volume (vph)	253	722	538	0	0	0	0	863	461	589	1725	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.0	6.0	6.0					5.0		5.0	5.0		
Lane Util. Factor	1.00	0.95	1.00					0.91		1.00	0.95		
Frpb, ped/bikes	1.00	1.00	0.99					1.00		1.00	1.00		
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00		
Frt	1.00	1.00	0.85					0.95		1.00	1.00		
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00		
Satd. Flow (prot)	1805	3574	1593					4830		1770	3574		
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00		
Satd. Flow (perm)	1805	3574	1593					4830		1770	3574		
Peak-hour factor, PHF	0.86	0.96	0.92	0.92	0.92	0.92	0.92	0.93	0.86	0.85	0.94	0.92	
Adj. Flow (vph)	294	752	585	0	0	0	0	928	536	693	1835	0	
RTOR Reduction (vph)	0	0	74	0	0	0	0	69	0	0	0	0	
Lane Group Flow (vph)	294	752	511	0	0	0	0	1395	0	693	1835	0	
Confl. Bikes (#/hr)			1						1				
Heavy Vehicles (%)	0%	1%	0%	2%	2%	2%	2%	1%	1%	2%	1%	2%	
Turn Type	Perm	NA	Perm					NA		Prot	NA		
Protected Phases		4 8						13		19	19 13		
Permitted Phases	4 8		4 8										
Actuated Green, G (s)	23.0	23.0	23.0					32.0		79.0	116.0		
Effective Green, g (s)	23.0	23.0	23.0					32.0		79.0	116.0		
Actuated g/C Ratio	0.15	0.15	0.15					0.21		0.53	0.77		
Clearance Time (s)								5.0					
Vehicle Extension (s)								1.0					
Lane Grp Cap (vph)	276	548	244					1030		932	2763		
v/s Ratio Prot		0.21						c0.29		c0.39	0.51		
v/s Ratio Perm	0.16		c0.32										
v/c Ratio	1.07	1.37	2.10					1.35		0.74	0.66		
Uniform Delay, d1	63.5	63.5	63.5					59.0		27.6	7.9		
Progression Factor	1.00	1.00	1.00					1.00		0.23	0.18		
Incremental Delay, d2	72.5	178.9	506.8					165.8		0.3	0.0		
Delay (s)	136.0	242.4	570.3					224.8		6.7	1.5		
Level of Service	F	F	F					F		A	A		
Approach Delay (s)		340.8			0.0			224.8			2.9		
Approach LOS		F			A			F			A		
Intersection Summary													
HCM 2000 Control Delay			158.7									HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.22										
Actuated Cycle Length (s)			150.0									Sum of lost time (s)	27.0
Intersection Capacity Utilization			140.1%									ICU Level of Service	H
Analysis Period (min)			15										

c Critical Lane Group

Intersection												
Int Delay, s/veh	52.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	63	125	208	19	116	6	192	19	48	5	28	37
Future Vol, veh/h	63	125	208	19	116	6	192	19	48	5	28	37
Conflicting Peds, #/hr	14	0	9	9	0	14	6	0	11	11	0	6
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	87	87	50	76	50	80	75	60	60	56	75
Heavy Vehicles, %	0	0	7	0	0	0	5	0	0	0	0	0
Mvmt Flow	93	144	239	38	153	12	240	25	80	8	50	49

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	179	0	0	392	0	0	750	714	284	762	827	179
Stage 1	-	-	-	-	-	-	459	459	-	249	249	-
Stage 2	-	-	-	-	-	-	291	255	-	513	578	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.15	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.545	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1409	-	-	1178	-	-	324	359	760	324	309	869
Stage 1	-	-	-	-	-	-	576	570	-	759	704	-
Stage 2	-	-	-	-	-	-	710	700	-	548	504	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1390	-	-	1168	-	-	~ 234	309	746	240	266	853
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 234	309	-	240	266	-
Stage 1	-	-	-	-	-	-	521	515	-	683	670	-
Stage 2	-	-	-	-	-	-	593	666	-	420	456	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.5			1.5			162.7			18		
HCM LOS							F			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	284	1390	-	-	1168	-	-	384
HCM Lane V/C Ratio	1.216	0.067	-	-	0.033	-	-	0.28
HCM Control Delay (s)	162.7	7.8	0	-	8.2	0	-	18
HCM Lane LOS	F	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	15.8	0.2	-	-	0.1	-	-	1.1

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

21: S Lamar Blvd & Driveway A
 HCM Unsignalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 2-2031 Site+Forecasted PM



Movement	EBL	EBR	NBL	NBT	SBT	SBR					
Lane Configurations		↗		↑↑↑	↑↑↑↗						
Traffic Volume (veh/h)	0	0	0	2430	2059	105					
Future Volume (Veh/h)	0	0	0	2430	2059	105					
Sign Control	Stop			Free		Free					
Grade	0%			0%		0%					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92					
Hourly flow rate (vph)	0	0	0	2641	2238	114					
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type				None	None						
Median storage (veh)											
Upstream signal (ft)				408	941						
pX, platoon unblocked											
vC, conflicting volume	2955	616	2352								
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	2955	616	2352								
tC, single (s)	6.8	6.9	4.1								
tC, 2 stage (s)											
tF (s)	3.5	3.3	2.2								
p0 queue free %	100	100	100								
cM capacity (veh/h)	11	433	205								
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4		
Volume Total	0	660	660	660	660	639	639	639	434		
Volume Left	0	0	0	0	0	0	0	0	0		
Volume Right	0	0	0	0	0	0	0	0	114		
cSH	1700	1700	1700	1700	1700	1700	1700	1700	1700		
Volume to Capacity	0.00	0.39	0.39	0.39	0.39	0.38	0.38	0.38	0.26		
Queue Length 95th (ft)	0	0	0	0	0	0	0	0	0		
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Lane LOS	A										
Approach Delay (s)	0.0	0.0					0.0				
Approach LOS	A										
Intersection Summary											
Average Delay	0.0										
Intersection Capacity Utilization	38.5%			ICU Level of Service				A			
Analysis Period (min)	15										

Intersection						
Int Delay, s/veh	14.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑↑	
Traffic Vol, veh/h	0	229	0	668	1829	21
Future Vol, veh/h	0	229	0	668	1829	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	249	0	726	1988	23

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	1006	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-
Pot Cap-1 Maneuver	0 ~ 206	0	-	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	- ~ 206	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	177.5	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	206	-	-
HCM Lane V/C Ratio	-	1.208	-	-
HCM Control Delay (s)	-	177.5	-	-
HCM Lane LOS	-	F	-	-
HCM 95th %tile Q(veh)	-	12.7	-	-

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

Intersection						
Int Delay, s/veh	6.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑ ↑↑				
Traffic Vol, veh/h	0	199	1377	114	0	0
Future Vol, veh/h	0	199	1377	114	0	0
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	-	-	-
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	216	1497	124	0	0

Major/Minor	Minor1	Major1	
Conflicting Flow All	-	811	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.14	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.92	-
Pot Cap-1 Maneuver	0	277	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	-	277	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB
HCM Control Delay, s	52.3	0
HCM LOS	F	

Minor Lane/Major Mvmt	NBT	NBRWBLn1
Capacity (veh/h)	-	277
HCM Lane V/C Ratio	-	0.781
HCM Control Delay (s)	-	52.3
HCM Lane LOS	-	F
HCM 95th %tile Q(veh)	-	6


















Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	557	740	2941	464	466	1353
v/c Ratio	0.63	1.26	1.50	0.50	2.51	0.58
Control Delay	48.1	168.0	246.2	3.9	713.3	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.1	168.0	246.2	3.9	713.3	13.5
Queue Length 50th (ft)	224	~816	~1879	35	~635	314
Queue Length 95th (ft)	286	#1010	m#1638	m8	#722	373
Internal Link Dist (ft)	497		121			322
Turn Bay Length (ft)		125			125	
Base Capacity (vph)	881	586	1966	935	186	2336
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	1.26	1.50	0.50	2.51	0.58

Intersection Summary

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

1: S Lamar Blvd & W Oltorf Street
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted AM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		 			 
Traffic Volume (vph)	501	644	2529	371	368	1312
Future Volume (vph)	501	644	2529	371	368	1312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1583	3539	1525	1770	3505
Flt Permitted	0.95	1.00	1.00	1.00	0.05	1.00
Satd. Flow (perm)	3400	1583	3539	1525	93	3505
Peak-hour factor, PHF	0.90	0.87	0.86	0.80	0.79	0.97
Adj. Flow (vph)	557	740	2941	464	466	1353
RTOR Reduction (vph)	0	1	0	88	0	0
Lane Group Flow (vph)	557	739	2941	376	466	1353
Confl. Peds. (#/hr)		4		2	2	
Confl. Bikes (#/hr)		1		5		
Heavy Vehicles (%)	3%	2%	2%	4%	2%	3%
Turn Type	Prot	pt+ov	NA	Perm	pm+pt	NA
Protected Phases	4	1 4	2		1	6
Permitted Phases		4		2	6	
Actuated Green, G (s)	35.0	50.0	75.0	75.0	90.0	90.0
Effective Green, g (s)	35.0	50.0	75.0	75.0	90.0	90.0
Actuated g/C Ratio	0.26	0.37	0.56	0.56	0.67	0.67
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	1.0		1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	881	586	1966	847	186	2336
v/s Ratio Prot	0.16	c0.47	0.83		c0.19	0.39
v/s Ratio Perm				0.25	c1.48	
v/c Ratio	0.63	1.26	1.50	0.44	2.51	0.58
Uniform Delay, d1	44.3	42.5	30.0	17.7	47.1	12.2
Progression Factor	1.00	1.00	0.66	0.33	1.00	1.00
Incremental Delay, d2	3.4	131.1	224.1	0.6	693.2	1.1
Delay (s)	47.7	173.6	243.9	6.4	740.2	13.3
Level of Service	D	F	F	A	F	B
Approach Delay (s)	119.5		211.5			199.5
Approach LOS	F		F			F
Intersection Summary						
HCM 2000 Control Delay			189.9		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			2.22			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			118.5%		ICU Level of Service	H
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	149	321	157	218	2750	114	57	2174
v/c Ratio	0.77	0.76	0.78	0.74	1.11	0.11	1.08	1.18
Control Delay	71.3	45.3	72.4	38.3	73.3	3.6	176.9	118.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.3	45.3	72.4	38.3	73.3	3.6	176.9	118.1
Queue Length 50th (ft)	113	187	112	135	~1454	12	~54	~1179
Queue Length 95th (ft)	136	188	170	m115	m#1205	m9	#87	#1121
Internal Link Dist (ft)		215	74		201			588
Turn Bay Length (ft)	75			50		125	50	
Base Capacity (vph)	193	548	341	295	2469	1016	53	1849
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.59	0.46	0.74	1.11	0.11	1.08	1.18

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

2: S Lamar Blvd & Bluebonnet Lane
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗			↖		↖	↕	↗	↖	↗	↖
Traffic Volume (vph)	110	41	216	0	50	70	198	2255	92	35	1776	4
Future Volume (vph)	110	41	216	0	50	70	198	2255	92	35	1776	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	0.98			0.99		1.00	1.00	0.96	1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.88			0.91		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1769	1615			1720		1787	3505	1412	1703	3469	
Flt Permitted	0.28	1.00			1.00		0.05	1.00	1.00	0.06	1.00	
Satd. Flow (perm)	512	1615			1720		98	3505	1412	100	3469	
Peak-hour factor, PHF	0.74	0.71	0.82	0.87	0.86	0.71	0.91	0.82	0.81	0.61	0.82	0.50
Adj. Flow (vph)	149	58	263	0	58	99	218	2750	114	57	2166	8
RTOR Reduction (vph)	0	79	0	0	25	0	0	0	22	0	0	0
Lane Group Flow (vph)	149	242	0	0	132	0	218	2750	92	57	2174	0
Confl. Peds. (#/hr)	1		4	4			1	7		6	6	7
Confl. Bikes (#/hr)							1					1
Heavy Vehicles (%)	2%	0%	2%	3%	0%	0%	1%	3%	10%	6%	4%	0%
Turn Type	pm+pt	NA			NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4						2		2	6		
Actuated Green, G (s)	28.9	28.9			13.9		95.1	95.1	95.1	72.0	72.0	
Effective Green, g (s)	28.9	28.9			13.9		95.1	95.1	95.1	72.0	72.0	
Actuated g/C Ratio	0.21	0.21			0.10		0.70	0.70	0.70	0.53	0.53	
Clearance Time (s)	6.0	6.0			6.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0			2.0		1.0	1.0	1.0	1.0	1.0	
Lane Grp Cap (vph)	193	345			177		295	2469	994	53	1850	
v/s Ratio Prot	0.05	c0.15			0.08		0.10	c0.78			c0.63	
v/s Ratio Perm	c0.11						0.42		0.07	0.57		
v/c Ratio	0.77	0.70			0.75		0.74	1.11	0.09	1.08	1.18	
Uniform Delay, d1	46.9	49.1			58.8		43.4	20.0	6.3	31.5	31.5	
Progression Factor	1.00	1.00			1.00		1.05	0.98	1.15	1.18	1.14	
Incremental Delay, d2	15.9	5.2			13.8		1.5	51.8	0.0	138.0	84.1	
Delay (s)	62.8	54.3			72.6		47.3	71.4	7.3	175.2	120.2	
Level of Service	E	D			E		D	E	A	F	F	
Approach Delay (s)		57.0			72.6			67.3			121.6	
Approach LOS		E			E			E			F	

Intersection Summary

HCM 2000 Control Delay	87.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	109.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1129	2255	10	612	1744
v/c Ratio	1.39	1.04	0.01	1.19	0.75
Control Delay	218.3	39.6	1.0	121.6	17.9
Queue Delay	0.0	8.9	0.0	0.0	0.4
Total Delay	218.3	48.5	1.0	121.6	18.3
Queue Length 50th (ft)	~746	~1125	0	~659	380
Queue Length 95th (ft)	#897	m438	m0	m#522	m333
Internal Link Dist (ft)		324			498
Turn Bay Length (ft)				100	
Base Capacity (vph)	814	2159	991	516	2314
Starvation Cap Reductn	0	45	0	0	0
Spillback Cap Reductn	0	0	0	0	168
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.39	1.07	0.01	1.19	0.81

Intersection Summary

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

3: S Lamar Blvd & Menchaca Road
 HCM Signalized Intersection Capacity Analysis



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗↘	↕↗	↗	↘	↕↗
Traffic Volume (vph)	0	1073	1691	6	520	1552
Future Volume (vph)	0	1073	1691	6	520	1552
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0
Lane Util. Factor		0.88	0.95	1.00	1.00	0.95
Frbp, ped/bikes		1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		2787	3471	1589	1787	3471
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		2787	3471	1589	1787	3471
Peak-hour factor, PHF	0.92	0.95	0.75	0.60	0.85	0.89
Adj. Flow (vph)	0	1129	2255	10	612	1744
RTOR Reduction (vph)	0	9	0	3	0	0
Lane Group Flow (vph)	0	1120	2255	7	612	1744
Confl. Peds. (#/hr)		1		4	4	
Heavy Vehicles (%)	2%	2%	4%	0%	1%	4%
Turn Type		pt+ov	NA	Perm	Prot	NA
Protected Phases		1 4	2 3		1 4	1 2
Permitted Phases				2 3		
Actuated Green, G (s)		39.0	84.0	84.0	39.0	90.0
Effective Green, g (s)		39.0	84.0	84.0	39.0	90.0
Actuated g/C Ratio		0.29	0.62	0.62	0.29	0.67
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		805	2159	988	516	2314
v/s Ratio Prot		c0.40	c0.65		0.34	0.50
v/s Ratio Perm				0.00		
v/c Ratio		1.39	1.04	0.01	1.19	0.75
Uniform Delay, d1		48.0	25.5	9.7	48.0	15.1
Progression Factor		1.00	0.46	0.17	0.82	1.15
Incremental Delay, d2		183.6	25.6	0.0	85.7	0.2
Delay (s)		231.6	37.5	1.6	124.9	17.5
Level of Service		F	D	A	F	B
Approach Delay (s)	231.6		37.3			45.4
Approach LOS	F		D			D
Intersection Summary						
HCM 2000 Control Delay			78.8		HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			1.28			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	24.0
Intersection Capacity Utilization			102.2%		ICU Level of Service	G
Analysis Period (min)			15			
c Critical Lane Group						





























Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	233	513	156	223	228	2081	70	66	1740
v/c Ratio	1.19	0.73	2.08	0.34	2.17	0.90	0.07	2.54	0.81
Control Delay	173.4	45.0	556.2	49.1	556.5	23.3	2.9	783.4	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	12.2	0.0	0.0	0.1
Total Delay	173.4	45.0	556.2	49.1	556.5	35.5	2.9	783.4	5.5
Queue Length 50th (ft)	~247	169	~216	89	~322	692	3	~95	381
Queue Length 95th (ft)	#239	218	#247	114	m#287	m566	m1	#115	111
Internal Link Dist (ft)		257		238		436			324
Turn Bay Length (ft)	90		100		125		160	100	
Base Capacity (vph)	195	704	75	654	105	2314	1045	26	2143
Starvation Cap Reductn	0	0	0	0	0	0	0	0	16
Spillback Cap Reductn	0	0	0	0	0	259	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.19	0.73	2.08	0.34	2.17	1.01	0.07	2.54	0.82

Intersection Summary

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

4: S Lamar Blvd & Barton Skyway/Lightsey Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (vph)	147	172	275	103	172	8	194	1540	65	37	1422	87
Future Volume (vph)	147	172	275	103	172	8	194	1540	65	37	1422	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.91		1.00	0.99		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1748	3227		1801	3523		1787	3471	1531	1805	3440	
Flt Permitted	0.57	1.00		0.21	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1052	3227		407	3523		1787	3471	1531	1805	3440	
Peak-hour factor, PHF	0.63	0.86	0.88	0.66	0.80	0.95	0.85	0.74	0.93	0.56	0.88	0.70
Adj. Flow (vph)	233	200	312	156	215	8	228	2081	70	66	1616	124
RTOR Reduction (vph)	0	107	0	0	2	0	0	0	23	0	4	0
Lane Group Flow (vph)	233	406	0	156	221	0	228	2081	47	66	1736	0
Confl. Peds. (#/hr)	2		4	4		2	2		4	4		2
Confl. Bikes (#/hr)			1						1			2
Heavy Vehicles (%)	3%	1%	0%	0%	1%	25%	1%	4%	4%	0%	4%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		8			8		5	5 6		7	6 7	
Permitted Phases	8			8					5 6			
Actuated Green, G (s)	25.0	25.0		25.0	25.0		8.0	90.0	90.0	2.0	84.0	
Effective Green, g (s)	25.0	25.0		25.0	25.0		8.0	90.0	90.0	2.0	84.0	
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.06	0.67	0.67	0.01	0.62	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0			6.0		
Vehicle Extension (s)	2.0	2.0		2.0	2.0		1.0			1.0		
Lane Grp Cap (vph)	194	597		75	652		105	2314	1020	26	2140	
v/s Ratio Prot		0.13			0.06		c0.13	c0.60		c0.04	0.50	
v/s Ratio Perm	0.22			c0.38					0.03			
v/c Ratio	1.20	0.68		2.08	0.34		2.17	0.90	0.05	2.54	0.81	
Uniform Delay, d1	55.0	51.3		55.0	47.8		63.5	18.7	7.7	66.5	19.4	
Progression Factor	1.00	1.00		1.00	1.00		0.86	1.18	1.83	0.69	0.16	
Incremental Delay, d2	129.3	6.2		528.5	1.4		530.0	0.6	0.0	761.7	1.6	
Delay (s)	184.3	57.4		583.5	49.2		584.9	22.7	14.1	807.6	4.6	
Level of Service	F	E		F	D		F	C	B	F	A	
Approach Delay (s)		97.0			269.1			76.3			34.0	
Approach LOS		F			F			E			C	
Intersection Summary												
HCM 2000 Control Delay			78.6				HCM 2000 Level of Service			E		
HCM 2000 Volume to Capacity ratio			1.30									
Actuated Cycle Length (s)			135.0				Sum of lost time (s)			24.0		
Intersection Capacity Utilization			105.3%				ICU Level of Service			G		
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	131	236	313	33	2763	296	1731
v/c Ratio	1.19	0.97	0.98	0.27	1.10	5.58	0.69
Control Delay	186.3	102.8	95.8	13.4	73.6	2090.2	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	186.3	102.8	95.8	13.4	73.6	2090.2	13.2
Queue Length 50th (ft)	~127	207	268	9	~1447	~482	461
Queue Length 95th (ft)	#145	205	231	19	734	m#532	m570
Internal Link Dist (ft)	270		212		208		469
Turn Bay Length (ft)		120		95		125	
Base Capacity (vph)	110	244	321	121	2505	53	2508
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.19	0.97	0.98	0.27	1.10	5.58	0.69

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.





















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

Queue shown is maximum after two cycles.

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

5: S Lamar Blvd & Private Driveway/Panther Trail
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	10	27	151	4	236	23	1743	194	225	1579	25
Future Volume (veh/h)	41	10	27	151	4	236	23	1743	194	225	1579	25
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1852	1900	1827	1811	1900	1900	1865	1900	1810	1843	1900
Adj Flow Rate, veh/h	73	16	42	236	7	306	33	2490	273	296	1698	33
Adj No. of Lanes	0	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.56	0.62	0.65	0.64	0.60	0.77	0.69	0.70	0.71	0.76	0.93	0.75
Percent Heavy Veh, %	0	0	8	4	0	5	0	2	1	5	3	8
Cap, veh/h	44	15	8	265	7	311	182	2318	249	53	2523	49
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.72	0.72	0.72	0.72	0.72	0.72
Sat Flow, veh/h	13	70	39	1314	34	1498	284	3226	347	98	3512	68
Grp Volume(v), veh/h	131	0	0	236	0	313	33	1346	1417	296	845	886
Grp Sat Flow(s),veh/h/ln	122	0	0	1314	0	1532	284	1771	1802	98	1751	1829
Q Serve(g_s), s	0.5	0.0	0.0	0.0	0.0	27.5	9.7	97.0	97.0	0.0	35.4	35.7
Cycle Q Clear(g_c), s	28.0	0.0	0.0	28.0	0.0	27.5	45.4	97.0	97.0	97.0	35.4	35.7
Prop In Lane	0.56		0.32	1.00		0.98	1.00		0.19	1.00		0.04
Lane Grp Cap(c), veh/h	67	0	0	265	0	318	182	1273	1295	53	1258	1314
V/C Ratio(X)	1.96	0.00	0.00	0.89	0.00	0.99	0.18	1.06	1.09	5.55	0.67	0.67
Avail Cap(c_a), veh/h	67	0	0	265	0	318	182	1273	1295	53	1258	1314
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.1	0.0	0.0	55.0	0.0	53.3	22.8	19.0	19.0	67.5	10.3	10.4
Incr Delay (d2), s/veh	480.3	0.0	0.0	33.2	0.0	46.9	2.2	42.0	54.9	2087.9	2.9	2.8
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	11.4	0.0	0.0	11.2	0.0	15.8	0.9	61.5	67.2	32.9	17.9	18.7
LnGrp Delay(d),s/veh	539.4	0.0	0.0	88.1	0.0	100.2	25.0	61.0	73.9	2155.4	13.2	13.2
LnGrp LOS	F			F		F	C	F	F	F	B	B
Approach Vol, veh/h		131			549			2796			2027	
Approach Delay, s/veh		539.4			95.0			67.1			326.0	
Approach LOS		F			F			E			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		102.0		33.0		102.0		33.0				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		97.0		28.0		97.0		28.0				
Max Q Clear Time (g_c+I1), s		99.0		30.0		99.0		30.0				
Green Ext Time (p_c), s		0.0		0.0		0.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	176.5											
HCM 2010 LOS	F											

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Private Driveway

Queues

Phase 3-2036 Forecasted AM



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL2	SBT	NWL	NWR
Lane Group Flow (vph)	423	280	134	169	1497	160	1616	505	1832
v/c Ratio	1.73	0.63	0.78	0.50	1.24	1.10	0.56	2.49	1.71
Control Delay	373.6	15.9	70.1	21.3	152.8	156.5	24.6	707.6	350.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	373.6	15.9	70.1	21.3	152.8	156.5	24.6	707.6	350.9
Queue Length 50th (ft)	~525	23	91	34	~822	~152	269	~706	~1231
Queue Length 95th (ft)	#319	11	110	39	464	#187	305	#717	#1027
Internal Link Dist (ft)		165		155	240		599	179	
Turn Bay Length (ft)						160			
Base Capacity (vph)	245	446	172	341	1207	146	2906	203	1070
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.73	0.63	0.78	0.50	1.24	1.10	0.56	2.49	1.71

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Private Driveway

HCM Signalized Intersection Capacity Analysis

Phase 3-2036 Forecasted AM

Movement	EBL	EBT	EBR2	WBL	WBT	WBR	NBT	SBL2	SBT	SBR	NWL	NWR
Lane Configurations												
Traffic Volume (vph)	224	11	202	91	22	78	898	107	1238	149	369	1263
Future Volume (vph)	224	11	202	91	22	78	898	107	1238	149	369	1263
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		5.5	7.0	5.5		7.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		0.95	1.00	0.86		1.00	0.88
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.86		1.00	0.88		1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1804	1633		1770	1655		3610	1736	6092		1703	2790
Flt Permitted	0.47	1.00		0.22	1.00		1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	898	1633		403	1655		3610	1736	6092		1703	2790
Peak-hour factor, PHF	0.53	0.62	0.77	0.68	0.62	0.58	0.60	0.67	0.90	0.62	0.73	0.74
Adj. Flow (vph)	423	18	262	134	35	134	1497	160	1376	240	505	1707
RTOR Reduction (vph)	0	214	0	0	106	0	0	0	24	0	0	137
Lane Group Flow (vph)	423	66	0	134	63	0	1497	160	1592	0	505	1695
Confl. Peds. (#/hr)	1						1	1		3	3	
Confl. Bikes (#/hr)							1			2		
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	4%	2%	20%	6%	2%
Turn Type	pm+pt	NA		pm+pt	NA		NA	Prot	NA		Prot	Prot
Protected Phases	7	4		3	8		2!	1	6		5	2!
Permitted Phases	4			8								
Actuated Green, G (s)	27.0	18.5		27.0	18.5		43.5	11.0	61.5		15.5	43.5
Effective Green, g (s)	27.0	18.5		27.0	18.5		43.5	11.0	61.5		15.5	43.5
Actuated g/C Ratio	0.21	0.14		0.21	0.14		0.33	0.08	0.47		0.12	0.33
Clearance Time (s)	6.5	6.5		6.5	6.5		5.5	7.0	5.5		7.5	5.5
Vehicle Extension (s)	1.0	3.0		3.0	3.0		3.0	2.0	2.0		3.0	3.0
Lane Grp Cap (vph)	245	232		173	235		1207	146	2881		203	933
v/s Ratio Prot	c0.11	0.04		0.05	0.04		0.41	c0.09	0.26		c0.30	c0.61
v/s Ratio Perm	c0.25			0.11								
v/c Ratio	1.73	0.29		0.77	0.27		1.24	1.10	0.55		2.49	1.82
Uniform Delay, d1	50.5	49.8		45.0	49.7		43.2	59.5	24.4		57.2	43.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	343.6	3.1		19.2	2.8		115.3	102.5	0.8		684.0	371.7
Delay (s)	394.1	52.9		64.2	52.5		158.6	162.0	25.2		741.2	415.0
Level of Service	F	D		E	D		F	F	C		F	F
Approach Delay (s)		258.2			57.6		158.6		37.5		485.5	
Approach LOS		F			E		F		D		F	

Intersection Summary

HCM 2000 Control Delay	247.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.81		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	33.0
Intersection Capacity Utilization	153.1%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.

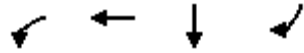
c Critical Lane Group

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Private Driveway
 HCM Signalized Intersection Capacity Analysis

Phase 3-2036 Forecasted AM



Movement	NWR2
Lane Configurations	
Traffic Volume (vph)	69
Future Volume (vph)	69
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frbp, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.55
Adj. Flow (vph)	125
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	1
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Lane Group	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	713	2283	943	413
v/c Ratio	0.68	1.05	0.79	0.26
Control Delay	6.2	45.3	57.7	0.4
Queue Delay	0.0	0.0	0.4	0.0
Total Delay	6.2	45.3	58.1	0.4
Queue Length 50th (ft)	551	~1207	231	0
Queue Length 95th (ft)	m0	m189	262	0
Internal Link Dist (ft)		23	453	
Turn Bay Length (ft)				
Base Capacity (vph)	1043	2168	1187	1564
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	44	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.68	1.05	0.83	0.26

Intersection Summary

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

7: S Lamar Blvd & Capity of Texas Hwy
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations				↖	↕						↑↑↑	↗	
Traffic Volume (vph)	0	0	0	665	2050	0	0	0	0	0	820	363	
Future Volume (vph)	0	0	0	665	2050	0	0	0	0	0	820	363	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				6.0	6.0						6.0	4.0	
Lane Util. Factor				0.91	0.91						0.86	1.00	
Frbp, ped/bikes				1.00	1.00						1.00	0.99	
Flpb, ped/bikes				1.00	1.00						1.00	1.00	
Frt				1.00	1.00						1.00	0.85	
Flt Protected				0.95	1.00						1.00	1.00	
Satd. Flow (prot)				1595	3383						6166	1564	
Flt Permitted				0.95	1.00						1.00	1.00	
Satd. Flow (perm)				1595	3383						6166	1564	
Peak-hour factor, PHF	0.92	0.92	0.92	0.84	0.93	0.92	0.92	0.92	0.92	0.92	0.87	0.88	
Adj. Flow (vph)	0	0	0	792	2204	0	0	0	0	0	943	412	
RTOR Reduction (vph)	0	0	0	38	38	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	675	2245	0	0	0	0	0	943	413	
Confl. Peds. (#/hr)												1	
Heavy Vehicles (%)	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	6%	2%	
Turn Type				custom	NA						NA	Free	
Protected Phases				1 2 4 8	1 2 4 8						5 6 7		
Permitted Phases				3	3							Free	
Actuated Green, G (s)				86.0	86.0						33.0	135.0	
Effective Green, g (s)				86.0	86.0						33.0	135.0	
Actuated g/C Ratio				0.64	0.64						0.24	1.00	
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				1086	2305						1507	1564	
v/s Ratio Prot				0.39	0.61						0.15		
v/s Ratio Perm				0.03	0.05							0.26	
v/c Ratio				0.62	0.97						0.63	0.26	
Uniform Delay, d1				14.7	23.4						45.5	0.0	
Progression Factor				0.60	1.11						1.00	1.00	
Incremental Delay, d2				0.1	2.1						2.0	0.4	
Delay (s)				8.9	28.1						47.5	0.4	
Level of Service				A	C						D	A	
Approach Delay (s)		0.0			23.5			0.0			33.1		
Approach LOS		A			C			A			C		
Intersection Summary													
HCM 2000 Control Delay			26.5		HCM 2000 Level of Service						C		
HCM 2000 Volume to Capacity ratio			1.16										
Actuated Cycle Length (s)			135.0		Sum of lost time (s)					40.0			
Intersection Capacity Utilization			90.8%		ICU Level of Service					E			
Analysis Period (min)			15										
c Critical Lane Group													















Lane Group	WBT	NBL	NBT
Lane Group Flow (vph)	2354	424	1331
v/c Ratio	1.69	0.47	0.50
Control Delay	344.9	2.1	3.4
Queue Delay	0.3	0.7	0.3
Total Delay	345.2	2.8	3.7
Queue Length 50th (ft)	~1101	12	60
Queue Length 95th (ft)	m#932	m9	m22
Internal Link Dist (ft)	133		295
Turn Bay Length (ft)			
Base Capacity (vph)	1393	898	2673
Starvation Cap Reductn	0	213	656
Spillback Cap Reductn	110	72	109
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.83	0.62	0.66

Intersection Summary

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

8: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted AM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations					↑↑↑		↑	↑↑↑					
Traffic Volume (vph)	0	0	0	0	2236	0	490	915	0	0	0	0	
Future Volume (vph)	0	0	0	0	2236	0	490	915	0	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)					6.0		6.0	6.0					
Lane Util. Factor					0.91		0.86	0.86					
Frbp, ped/bikes					1.00		1.00	1.00					
Flpb, ped/bikes					1.00		1.00	1.00					
Frt					1.00		1.00	1.00					
Flt Protected					1.00		0.95	1.00					
Satd. Flow (prot)					5085		1552	4792					
Flt Permitted					1.00		0.95	1.00					
Satd. Flow (perm)					5085		1552	4792					
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.95	0.79	0.89	0.76	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	0	0	0	0	2354	0	551	1204	0	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	0	47	47	0	0	0	0	
Lane Group Flow (vph)	0	0	0	0	2354	0	377	1284	0	0	0	0	
Confl. Peds. (#/hr)						1							
Heavy Vehicles (%)	2%	2%	2%	2%	2%	6%	0%	2%	2%	2%	2%	2%	
Turn Type					NA		custom	NA					
Protected Phases					1 7 8		2 3 4 5	2 3 4 5					
Permitted Phases							6	6					
Actuated Green, G (s)					40.0		77.0	77.0					
Effective Green, g (s)					38.0		75.0	75.0					
Actuated g/C Ratio					0.28		0.56	0.56					
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)					1431		931	2875					
v/s Ratio Prot					c0.46		0.17	c0.19					
v/s Ratio Perm							0.07	0.08					
v/c Ratio					1.65		0.41	0.45					
Uniform Delay, d1					48.5		17.2	17.7					
Progression Factor					1.04		0.19	0.26					
Incremental Delay, d2					292.4		0.0	0.0					
Delay (s)					343.0		3.3	4.6					
Level of Service					F		A	A					
Approach Delay (s)		0.0			343.0			4.3			0.0		
Approach LOS		A			F			A			A		
Intersection Summary													
HCM 2000 Control Delay			198.3		HCM 2000 Level of Service				F				
HCM 2000 Volume to Capacity ratio			1.04										
Actuated Cycle Length (s)			135.0		Sum of lost time (s)				40.0				
Intersection Capacity Utilization			98.8%		ICU Level of Service				F				
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBT	SBL	SBT
Lane Group Flow (vph)	1156	427	1349
v/c Ratio	1.20	0.45	0.44
Control Delay	147.8	3.9	4.1
Queue Delay	0.3	1.2	0.5
Total Delay	148.2	5.1	4.6
Queue Length 50th (ft)	~450	4	49
Queue Length 95th (ft)	#547	m19	m34
Internal Link Dist (ft)	69		291
Turn Bay Length (ft)			
Base Capacity (vph)	960	943	3046
Starvation Cap Reductn	0	301	1081
Spillback Cap Reductn	62	71	116
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.29	0.67	0.69

Intersection Summary

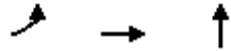
- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

9: S Lamar Blvd & Capity of Texas Hwy
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↑↑↑								↘	↑↑↑		
Traffic Volume (vph)	0	1052	0	0	0	0	0	0	0	432	1113	0	
Future Volume (vph)	0	1052	0	0	0	0	0	0	0	432	1113	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.0								6.0	6.0		
Lane Util. Factor		0.91								0.86	0.86		
Frbp, ped/bikes		1.00								1.00	1.00		
Flpb, ped/bikes		1.00								1.00	1.00		
Frt		1.00								1.00	1.00		
Flt Protected		1.00								0.95	1.00		
Satd. Flow (prot)		4988								1437	4779		
Flt Permitted		1.00								0.95	1.00		
Satd. Flow (perm)		4988								1437	4779		
Peak-hour factor, PHF	0.92	0.91	0.88	0.92	0.92	0.92	0.92	0.92	0.92	0.87	0.87	0.92	
Adj. Flow (vph)	0	1156	0	0	0	0	0	0	0	497	1279	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	38	38	0	
Lane Group Flow (vph)	0	1156	0	0	0	0	0	0	0	389	1311	0	
Confl. Bikes (#/hr)			1										
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	8%	2%	2%	
Turn Type		NA								custom	NA		
Protected Phases		4 5								1 2 6 8	1 2 6 8		
Permitted Phases										7	7		
Actuated Green, G (s)		26.0								86.0	86.0		
Effective Green, g (s)		26.0								86.0	86.0		
Actuated g/C Ratio		0.19								0.64	0.64		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)		960								979	3256		
v/s Ratio Prot		c0.23								0.25	c0.25		
v/s Ratio Perm										0.02	0.02		
v/c Ratio		1.20								0.40	0.40		
Uniform Delay, d1		54.5								11.9	12.0		
Progression Factor		1.00								0.42	0.46		
Incremental Delay, d2		101.9								0.1	0.0		
Delay (s)		156.4								5.1	5.5		
Level of Service		F								A	A		
Approach Delay (s)		156.4			0.0			0.0			5.4		
Approach LOS		F			A			A			A		
Intersection Summary													
HCM 2000 Control Delay			64.9		HCM 2000 Level of Service						E		
HCM 2000 Volume to Capacity ratio			0.72										
Actuated Cycle Length (s)			135.0		Sum of lost time (s)					40.0			
Intersection Capacity Utilization			83.2%		ICU Level of Service					E			
Analysis Period (min)			15										
c Critical Lane Group													





















Lane Group	EBL	EBT	NBT
Lane Group Flow (vph)	574	1197	1690
v/c Ratio	0.58	0.61	1.11
Control Delay	5.3	6.6	103.6
Queue Delay	21.6	36.7	0.1
Total Delay	26.9	43.3	103.7
Queue Length 50th (ft)	386	459	~480
Queue Length 95th (ft)	m14	m423	#558
Internal Link Dist (ft)		38	673
Turn Bay Length (ft)			
Base Capacity (vph)	985	1950	1528
Starvation Cap Reductn	415	830	0
Spillback Cap Reductn	0	0	25
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.01	1.07	1.12

Intersection Summary

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

10: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 						  				
Traffic Volume (vph)	443	1025	0	0	0	0	0	1193	326	0	0	0
Future Volume (vph)	443	1025	0	0	0	0	0	1193	326	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0						6.0				
Lane Util. Factor	0.91	0.91						0.86				
Frt	1.00	1.00						0.97				
Flt Protected	0.95	1.00						1.00				
Satd. Flow (prot)	1610	3258						6288				
Flt Permitted	0.95	1.00						1.00				
Satd. Flow (perm)	1610	3258						6288				
Peak-hour factor, PHF	0.64	0.95	0.92	0.92	0.92	0.92	0.92	0.91	0.86	0.92	0.92	0.92
Adj. Flow (vph)	692	1079	0	0	0	0	0	1311	379	0	0	0
RTOR Reduction (vph)	43	43	0	0	0	0	0	36	0	0	0	0
Lane Group Flow (vph)	531	1154	0	0	0	0	0	1654	0	0	0	0
Heavy Vehicles (%)	2%	6%	2%	2%	2%	2%	2%	0%	2%	2%	2%	2%
Turn Type	custom	NA						NA				
Protected Phases	4 5 6 8	4 5 6 8						1 2 3				
Permitted Phases	7	7										
Actuated Green, G (s)	80.0	80.0						39.0				
Effective Green, g (s)	80.0	80.0						39.0				
Actuated g/C Ratio	0.59	0.59						0.29				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	1025	2075						1816				
v/s Ratio Prot	0.30	c0.33						c0.26				
v/s Ratio Perm	0.03	0.03										
v/c Ratio	0.52	0.56						0.91				
Uniform Delay, d1	16.2	16.7						46.3				
Progression Factor	0.41	0.50						1.00				
Incremental Delay, d2	0.1	0.1						8.4				
Delay (s)	6.8	8.4						54.7				
Level of Service	A	A						D				
Approach Delay (s)		7.9			0.0			54.7			0.0	
Approach LOS		A			A			D			A	
Intersection Summary												
HCM 2000 Control Delay			30.7					HCM 2000 Level of Service		C		
HCM 2000 Volume to Capacity ratio			0.87									
Actuated Cycle Length (s)			135.0					Sum of lost time (s)		40.0		
Intersection Capacity Utilization			73.9%					ICU Level of Service		D		
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	536	1122	193	236	353	33
v/c Ratio	1.73	1.76	0.34	0.81	0.22	0.02
Control Delay	368.5	369.3	1.7	27.3	1.9	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	368.5	369.3	1.7	27.3	1.9	10.3
Queue Length 50th (ft)	~367	~385	0	40	7	1
Queue Length 95th (ft)	#553	#462	0	m49	m7	7
Internal Link Dist (ft)		364			236	206
Turn Bay Length (ft)						
Base Capacity (vph)	309	639	564	293	1667	1445
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.73	1.76	0.34	0.81	0.21	0.02

Intersection Summary

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

11: West Gate Blvd & US 290 WBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations				↙	↕	↗	↙	↕			↕	↗	
Traffic Volume (vph)	0	0	0	700	767	106	435	102	0	0	15	12	
Future Volume (vph)	0	0	0	700	767	106	435	102	0	0	15	12	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				5.5	5.5	5.5	5.5	6.0			6.0		
Lane Util. Factor				0.91	0.91	1.00	0.91	0.91			0.91		
Frbp, ped/bikes				1.00	1.00	0.99	1.00	1.00			1.00		
Flpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00		
Frt				1.00	1.00	0.85	1.00	1.00			0.93		
Flt Protected				0.95	0.99	1.00	0.95	0.97			1.00		
Satd. Flow (prot)				1610	3332	1562	1595	3280			4444		
Flt Permitted				0.95	0.99	1.00	0.73	0.76			1.00		
Satd. Flow (perm)				1610	3332	1562	1231	2581			4444		
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.84	0.55	0.92	0.88	0.92	0.92	0.88	0.75	
Adj. Flow (vph)	0	0	0	745	913	193	473	116	0	0	17	16	
RTOR Reduction (vph)	0	0	0	0	0	157	0	0	0	0	11	0	
Lane Group Flow (vph)	0	0	0	536	1122	36	236	353	0	0	22	0	
Confl. Peds. (#/hr)						1							
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	3%	0%	2%	2%	0%	17%	
Turn Type				Perm	NA	Perm	custom	NA				NA	
Protected Phases					4 5			1 2 6 7				1 2	
Permitted Phases				4 5		4 5	6 7						
Actuated Green, G (s)				12.0	12.0	12.0	15.5	41.5			20.5		
Effective Green, g (s)				12.0	12.0	12.0	15.5	30.5			20.5		
Actuated g/C Ratio				0.18	0.18	0.18	0.24	0.47			0.32		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				297	615	288	293	1211			1401		
v/s Ratio Prot											0.00		
v/s Ratio Perm				0.33	0.34	0.02	c0.19	c0.14					
v/c Ratio				1.80	1.82	0.12	0.81	0.29			0.02		
Uniform Delay, d1				26.5	26.5	22.1	23.3	10.6			15.3		
Progression Factor				1.00	1.00	1.00	0.60	0.36			1.00		
Incremental Delay, d2				375.2	377.3	0.9	6.3	0.0			0.0		
Delay (s)				401.7	403.8	23.0	20.3	3.8			15.3		
Level of Service				F	F	C	C	A			B		
Approach Delay (s)		0.0			363.5			10.4			15.3		
Approach LOS		A			F			B			B		
Intersection Summary													
HCM 2000 Control Delay			274.8		HCM 2000 Level of Service						F		
HCM 2000 Volume to Capacity ratio			1.30										
Actuated Cycle Length (s)			65.0		Sum of lost time (s)					34.0			
Intersection Capacity Utilization			97.9%		ICU Level of Service					F			
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	75	1008	967	453	75	703
v/c Ratio	0.23	1.51	1.00	0.67	0.14	0.31
Control Delay	24.6	259.8	48.0	8.1	35.4	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.4
Total Delay	24.6	259.8	48.0	8.1	35.4	1.9
Queue Length 50th (ft)	26	~294	146	0	33	6
Queue Length 95th (ft)	46	#402	#281	78	m21	m0
Internal Link Dist (ft)		52	369			236
Turn Bay Length (ft)						
Base Capacity (vph)	333	669	968	679	514	2193
Starvation Cap Reductn	0	0	0	0	0	901
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	1.51	1.00	0.67	0.15	0.54

Intersection Summary

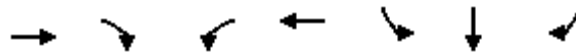
- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

12: West Gate Blvd & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	54	683	195	0	0	0	0	487	825	52	675	0	
Future Volume (vph)	54	683	195	0	0	0	0	487	825	52	675	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.0	6.0						6.0	6.0	5.5	5.5		
Lane Util. Factor	1.00	0.95						0.91	0.91	1.00	0.95		
Frbp, ped/bikes	1.00	1.00						0.99	0.99	1.00	1.00		
Flpb, ped/bikes	1.00	1.00						1.00	1.00	1.00	1.00		
Frt	1.00	0.96						0.93	0.85	1.00	1.00		
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1805	3382						3130	1436	1736	3539		
Flt Permitted	0.95	1.00						1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1805	3382						3130	1436	1736	3539		
Peak-hour factor, PHF	0.72	0.89	0.81	0.92	0.92	0.92	0.92	0.95	0.91	0.69	0.96	0.92	
Adj. Flow (vph)	75	767	241	0	0	0	0	513	907	75	703	0	
RTOR Reduction (vph)	0	50	0	0	0	0	0	244	345	0	0	0	
Lane Group Flow (vph)	75	958	0	0	0	0	0	723	108	75	703	0	
Confl. Peds. (#/hr)			2						1	1			
Heavy Vehicles (%)	0%	2%	4%	2%	2%	2%	2%	3%	1%	4%	2%	2%	
Turn Type	Split	NA						NA	Perm	Prot	NA		
Protected Phases	1 7	1 7						5 6		2 4	2 4 5 6		
Permitted Phases									5 6				
Actuated Green, G (s)	12.0	12.0						15.5	15.5	20.5	41.5		
Effective Green, g (s)	6.5	6.5						15.5	15.5	20.5	35.5		
Actuated g/C Ratio	0.10	0.10						0.24	0.24	0.32	0.55		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)	180	338						746	342	547	1932		
v/s Ratio Prot	0.04	c0.28						c0.23		0.04	c0.20		
v/s Ratio Perm									0.08				
v/c Ratio	0.42	2.83						0.97	0.32	0.14	0.36		
Uniform Delay, d1	27.5	29.2						24.5	20.4	15.9	8.4		
Progression Factor	1.00	1.00						1.00	1.00	2.17	0.28		
Incremental Delay, d2	0.6	833.1						26.3	2.4	0.0	0.0		
Delay (s)	28.0	862.3						50.8	22.8	34.5	2.4		
Level of Service	C	F						D	C	C	A		
Approach Delay (s)		804.5			0.0			41.9			5.5		
Approach LOS		F			A			D			A		
Intersection Summary													
HCM 2000 Control Delay			285.0		HCM 2000 Level of Service						F		
HCM 2000 Volume to Capacity ratio			1.35										
Actuated Cycle Length (s)			65.0		Sum of lost time (s)						34.0		
Intersection Capacity Utilization			97.9%		ICU Level of Service						F		
Analysis Period (min)			15										

c Critical Lane Group



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	2036	819	222	5672	197	203	720
v/c Ratio	0.63	0.29	0.80	1.38	1.01	0.98	0.46
Control Delay	19.7	0.3	46.7	201.9	141.4	132.8	1.0
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	0.0
Total Delay	19.7	0.3	46.7	202.2	141.4	132.8	1.0
Queue Length 50th (ft)	498	0	170	~3317	~249	255	0
Queue Length 95th (ft)	539	0	m67	m1725	#348	196	0
Internal Link Dist (ft)	834			1419		192	
Turn Bay Length (ft)			950				
Base Capacity (vph)	3242	2777	278	4096	196	208	1553
Starvation Cap Reductn	0	0	0	717	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.29	0.80	1.68	1.01	0.98	0.46

Intersection Summary

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

13: Capital of Texas Hwy & Mopac SBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑↑	↑	↑↑↑					↑	↑	↑
Traffic Volume (vph)	0	1955	688	131	5275	0	0	0	0	216	64	655
Future Volume (vph)	0	1955	688	131	5275	0	0	0	0	216	64	655
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	4.0	7.0	7.0					6.5	6.5	4.0
Lane Util. Factor		0.91	0.88	1.00	0.91					0.95	0.95	1.00
Frbp, ped/bikes		1.00	0.99	1.00	1.00					1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.98	1.00
Satd. Flow (prot)		4988	2777	1752	5085					1649	1743	1553
Flt Permitted		1.00	1.00	0.06	1.00					0.95	0.98	1.00
Satd. Flow (perm)		4988	2777	108	5085					1649	1743	1553
Peak-hour factor, PHF	0.92	0.96	0.84	0.59	0.93	0.92	0.92	0.92	0.92	0.78	0.52	0.91
Adj. Flow (vph)	0	2036	819	222	5672	0	0	0	0	277	123	720
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2036	819	222	5672	0	0	0	0	197	203	720
Confl. Bikes (#/hr)			6									
Heavy Vehicles (%)	2%	4%	1%	3%	2%	2%	2%	2%	2%	4%	0%	4%
Turn Type		NA	Free	pm+pt	NA					Perm	NA	Free
Protected Phases		2		1	6						8	
Permitted Phases			Free	6						8		Free
Actuated Green, G (s)		117.0	180.0	145.0	145.0					21.5	21.5	180.0
Effective Green, g (s)		117.0	180.0	145.0	145.0					21.5	21.5	180.0
Actuated g/C Ratio		0.65	1.00	0.81	0.81					0.12	0.12	1.00
Clearance Time (s)		7.0		7.0	7.0					6.5	6.5	
Vehicle Extension (s)		4.0		2.0	4.0					2.0	2.0	
Lane Grp Cap (vph)		3242	2777	278	4096					196	208	1553
v/s Ratio Prot		0.41		0.09	c1.12							
v/s Ratio Perm			0.29	0.55						c0.12	0.12	0.46
v/c Ratio		0.63	0.29	0.80	1.38					1.01	0.98	0.46
Uniform Delay, d1		18.6	0.0	49.2	17.5					79.2	79.0	0.0
Progression Factor		1.00	1.00	1.06	1.82					1.00	1.00	1.00
Incremental Delay, d2		0.9	0.3	2.3	173.3					65.6	56.5	1.0
Delay (s)		19.6	0.3	54.4	205.1					144.9	135.5	1.0
Level of Service		B	A	D	F					F	F	A
Approach Delay (s)		14.0			199.4			0.0			50.7	
Approach LOS		B			F			A			D	
Intersection Summary												
HCM 2000 Control Delay			128.9		HCM 2000 Level of Service					F		
HCM 2000 Volume to Capacity ratio			1.39									
Actuated Cycle Length (s)			180.0		Sum of lost time (s)				20.5			
Intersection Capacity Utilization			142.7%		ICU Level of Service					H		
Analysis Period (min)			15									

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	439	1924	3663	3684	2094	249	491
v/c Ratio	1.53	0.77	1.34	2.38	1.99	0.63	1.29
Control Delay	290.9	15.1	193.6	638.6	483.8	73.0	192.7
Queue Delay	0.0	0.0	3.6	0.0	0.0	0.0	0.0
Total Delay	290.9	15.1	197.2	638.6	483.8	73.0	192.7
Queue Length 50th (ft)	~676	419	~2052	~6935	~1360	272	~669
Queue Length 95th (ft)	m#886	m438	m792	m#3079	#1441	327	#669
Internal Link Dist (ft)		1419	756			675	
Turn Bay Length (ft)					300		
Base Capacity (vph)	286	2487	2740	1549	1050	395	382
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	1805	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.53	0.77	3.92	2.38	1.99	0.63	1.29

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.




















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

Queue shown is maximum after two cycles.

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

14: Mopac NBFR & Capital of Texas Hwy
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	404	1809	0	0	3407	3573	1968	199	368	0	0	0
Future Volume (veh/h)	404	1809	0	0	3407	3573	1968	199	368	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1827	0	0	1863	1845	1881	1900	1863			
Adj Flow Rate, veh/h	439	1924	0	0	3663	0	2094	249	0			
Adj No. of Lanes	1	2	0	0	3	1	3	1	1			
Peak Hour Factor	0.92	0.94	0.92	0.92	0.93	0.97	0.94	0.80	0.75			
Percent Heavy Veh, %	2	4	0	0	2	3	1	0	2			
Cap, veh/h	286	2488	0	0	2740	845	1053	396	330			
Arrive On Green	0.28	1.00	0.00	0.00	0.54	0.00	0.21	0.21	0.00			
Sat Flow, veh/h	1774	3563	0	0	5253	1568	5052	1900	1583			
Grp Volume(v), veh/h	439	1924	0	0	3663	0	2094	249	0			
Grp Sat Flow(s),veh/h/ln	1774	1736	0	0	1695	1568	1684	1900	1583			
Q Serve(g_s), s	25.0	0.0	0.0	0.0	97.0	0.0	37.5	21.5	0.0			
Cycle Q Clear(g_c), s	25.0	0.0	0.0	0.0	97.0	0.0	37.5	21.5	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	286	2488	0	0	2740	845	1053	396	330			
V/C Ratio(X)	1.53	0.77	0.00	0.00	1.34	0.00	1.99	0.63	0.00			
Avail Cap(c_a), veh/h	286	2488	0	0	2740	845	1053	396	330			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.70	0.70	0.00	0.00	1.00	0.00	1.00	1.00	0.00			
Uniform Delay (d), s/veh	63.3	0.0	0.0	0.0	41.5	0.0	71.3	64.9	0.0			
Incr Delay (d2), s/veh	251.8	1.7	0.0	0.0	154.1	0.0	448.6	2.4	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			
%ile BackOfQ(50%),veh/ln	34.2	0.6	0.0	0.0	84.3	0.0	61.2	11.5	0.0			
LnGrp Delay(d),s/veh	315.1	1.7	0.0	0.0	195.6	0.0	519.9	67.3	0.0			
LnGrp LOS	F	A			F		F	E				
Approach Vol, veh/h		2363			3663			2343				
Approach Delay, s/veh		59.9			195.6			471.8				
Approach LOS		E			F			F				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		136.0		44.0	32.0	104.0						
Change Period (Y+Rc), s		7.0		6.5	7.0	7.0						
Max Green Setting (Gmax), s		129.0		37.5	25.0	97.0						
Max Q Clear Time (g_c+I1), s		2.0		39.5	27.0	99.0						
Green Ext Time (p_c), s		6.6		0.0	0.0	0.0						
Intersection Summary												
HCM 2010 Ctrl Delay				234.6								
HCM 2010 LOS				F								



Lane Group	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	194	6995	174	675	5032
v/c Ratio	0.36	1.86	0.15	1.99	1.35
Control Delay	65.8	410.6	6.9	487.8	184.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	65.8	410.6	6.9	487.8	184.2
Queue Length 50th (ft)	114	~4582	53	~1249	~2858
Queue Length 95th (ft)	139	#4451	51	m#1338	m#2747
Internal Link Dist (ft)		1281			1273
Turn Bay Length (ft)			430	550	
Base Capacity (vph)	536	3757	1195	340	3721
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.36	1.86	0.15	1.99	1.35

Intersection Summary

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

15: Capital of Texas Hwy & Barton Creek Plaza Driveway
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted AM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↔↔	↑↑↑	↔	↔	↑↑↑
Traffic Volume (vph)	0	151	6855	108	567	4780
Future Volume (vph)	0	151	6855	108	567	4780
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	7.0	7.0	6.0	7.0
Lane Util. Factor		0.88	0.91	1.00	1.00	0.91
Frbp, ped/bikes		1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		2842	5085	1615	1805	5036
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		2842	5085	1615	1805	5036
Peak-hour factor, PHF	0.92	0.78	0.98	0.62	0.84	0.95
Adj. Flow (vph)	0	194	6995	174	675	5032
RTOR Reduction (vph)	0	0	0	2	0	0
Lane Group Flow (vph)	0	194	6995	172	675	5032
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	2%	0%	2%	0%	0%	3%
Turn Type		Over	NA	Prot	Prot	NA
Protected Phases		5	6	6	5	6
Permitted Phases						
Actuated Green, G (s)		34.0	133.0	133.0	34.0	133.0
Effective Green, g (s)		34.0	133.0	133.0	34.0	133.0
Actuated g/C Ratio		0.19	0.74	0.74	0.19	0.74
Clearance Time (s)		6.0	7.0	7.0	6.0	7.0
Vehicle Extension (s)		2.0	4.0	4.0	2.0	4.0
Lane Grp Cap (vph)		536	3757	1193	340	3721
v/s Ratio Prot		0.07	c1.38	0.11	c0.37	1.00
v/s Ratio Perm						
v/c Ratio		0.36	1.86	0.14	1.99	1.35
Uniform Delay, d1		63.6	23.5	6.9	73.0	23.5
Progression Factor		1.00	1.00	1.00	1.05	0.96
Incremental Delay, d2		0.2	388.9	0.3	453.3	160.3
Delay (s)		63.7	412.4	7.1	530.1	182.9
Level of Service		E	F	A	F	F
Approach Delay (s)	63.7		402.5			224.0
Approach LOS	E		F			F
Intersection Summary						
HCM 2000 Control Delay			319.6		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.89			
Actuated Cycle Length (s)			180.0		Sum of lost time (s)	13.0
Intersection Capacity Utilization			174.7%		ICU Level of Service	H
Analysis Period (min)			15			
c Critical Lane Group						





















Lane Group	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	201	2037	120	406	487	236
v/c Ratio	0.29	1.38	0.26	0.45	1.21	0.51
Control Delay	28.0	209.4	11.1	14.4	159.6	20.0
Queue Delay	0.4	0.0	0.9	4.0	0.7	0.0
Total Delay	28.4	209.4	12.0	18.4	160.2	20.0
Queue Length 50th (ft)	117	~1249	47	216	~546	54
Queue Length 95th (ft)	m168	m#1355	m56	m167	#618	45
Internal Link Dist (ft)		522		175	200	
Turn Bay Length (ft)			70			90
Base Capacity (vph)	692	1473	511	893	402	465
Starvation Cap Reductn	0	0	214	395	0	0
Spillback Cap Reductn	184	0	0	0	26	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.40	1.38	0.40	0.82	1.30	0.51

Intersection Summary

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

16: US 290 WBFR & Victory Drive
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted AM

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (vph)	0	0	0	177	1668	230	113	252	0	0	370	144		
Future Volume (vph)	0	0	0	177	1668	230	113	252	0	0	370	144		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)				5.5	5.5		5.5	4.5			4.5	4.5		
Lane Util. Factor				1.00	0.95		1.00	1.00			1.00	1.00		
Frbp, ped/bikes				1.00	1.00		1.00	1.00			1.00	0.98		
Flpb, ped/bikes				1.00	1.00		1.00	1.00			1.00	1.00		
Frt				1.00	0.98		1.00	1.00			1.00	0.85		
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00		
Satd. Flow (prot)				1597	3376		1769	1827			1759	1488		
Flt Permitted				0.95	1.00		0.15	1.00			1.00	1.00		
Satd. Flow (perm)				1597	3376		282	1827			1759	1488		
Peak-hour factor, PHF	0.92	0.92	0.92	0.88	0.96	0.77	0.94	0.62	0.92	0.92	0.76	0.61		
Adj. Flow (vph)	0	0	0	201	1738	299	120	406	0	0	487	236		
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	125		
Lane Group Flow (vph)	0	0	0	201	2027	0	120	406	0	0	487	111		
Confl. Peds. (#/hr)						6	6					6		
Confl. Bikes (#/hr)												4		
Heavy Vehicles (%)	2%	2%	2%	13%	3%	11%	2%	4%	2%	2%	8%	6%		
Turn Type				Split	NA		pm+pt	NA			NA	Perm		
Protected Phases				7 8	7 8		2 10	1 2 6 10			1 6			
Permitted Phases							1 2 6 10					1 6		
Actuated Green, G (s)				58.0	58.0		61.0	66.5			30.9	30.9		
Effective Green, g (s)				58.0	58.0		50.5	55.0			30.9	30.9		
Actuated g/C Ratio				0.43	0.43		0.37	0.41			0.23	0.23		
Clearance Time (s)														
Vehicle Extension (s)														
Lane Grp Cap (vph)				686	1450		370	744			402	340		
v/s Ratio Prot				0.13	c0.60		0.06	c0.22			c0.28			
v/s Ratio Perm							0.06					0.07		
v/c Ratio				0.29	1.40		0.32	0.55			1.21	0.33		
Uniform Delay, d1				25.1	38.5		30.4	30.5			52.0	43.4		
Progression Factor				1.07	1.05		0.52	0.59			1.00	1.00		
Incremental Delay, d2				0.1	183.2		0.1	0.3			116.2	0.2		
Delay (s)				26.9	223.8		16.0	18.2			168.2	43.6		
Level of Service				C	F		B	B			F	D		
Approach Delay (s)		0.0			206.1			17.7			127.5			
Approach LOS		A			F			B			F			
Intersection Summary														
HCM 2000 Control Delay			161.4									HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio			1.28											
Actuated Cycle Length (s)			135.0								32.0			
Intersection Capacity Utilization			127.8%										ICU Level of Service	H
Analysis Period (min)			15											
c Critical Lane Group														



Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	2055	231	233	446	150
v/c Ratio	1.25	0.30	0.35	0.73	0.16
Control Delay	160.1	28.2	14.7	22.3	3.9
Queue Delay	0.3	0.0	0.0	2.3	1.9
Total Delay	160.4	28.2	14.7	24.6	5.9
Queue Length 50th (ft)	~837	135	65	181	13
Queue Length 95th (ft)	m#849	190	112	m160	m19
Internal Link Dist (ft)	53	253			175
Turn Bay Length (ft)			125	70	
Base Capacity (vph)	1641	752	662	608	927
Starvation Cap Reductn	0	0	0	72	641
Spillback Cap Reductn	147	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.38	0.31	0.35	0.83	0.52

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.




















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

Queue shown is maximum after two cycles.

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

17: Pack Saddle Pass & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted AM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  											
Traffic Volume (vph)	150	1595	65	0	0	0	0	199	193	388	135	0	
Future Volume (vph)	150	1595	65	0	0	0	0	199	193	388	135	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.0						4.5	4.5	5.5	4.5		
Lane Util. Factor		0.91						1.00	1.00	1.00	1.00		
Frbp, ped/bikes		1.00						1.00	1.00	1.00	1.00		
Flpb, ped/bikes		1.00						1.00	1.00	1.00	1.00		
Frt		0.99						1.00	0.85	1.00	1.00		
Flt Protected		0.99						1.00	1.00	0.95	1.00		
Satd. Flow (prot)		4915						1845	1455	1702	1583		
Flt Permitted		0.99						1.00	1.00	0.52	1.00		
Satd. Flow (perm)		4915						1845	1455	928	1583		
Peak-hour factor, PHF	0.54	0.94	0.81	0.92	0.92	0.92	0.92	0.86	0.83	0.87	0.90	0.92	
Adj. Flow (vph)	278	1697	80	0	0	0	0	231	233	446	150	0	
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	74	0	0	0	
Lane Group Flow (vph)	0	2052	0	0	0	0	0	231	159	446	150	0	
Confl. Peds. (#/hr)			3						1	1			
Confl. Bikes (#/hr)			1										
Heavy Vehicles (%)	6%	4%	0%	2%	2%	2%	2%	3%	11%	6%	20%	2%	
Turn Type	Split	NA						NA	Prot	D.P+P	NA		
Protected Phases	8 10	8 10						1 2 6	1 2 6	7	1 2 6 7		
Permitted Phases										1 2 6			
Actuated Green, G (s)		45.0						55.5	55.5	74.0	78.5		
Effective Green, g (s)		45.0						50.0	50.0	69.5	73.0		
Actuated g/C Ratio		0.33						0.37	0.37	0.51	0.54		
Clearance Time (s)										5.5			
Vehicle Extension (s)										1.5			
Lane Grp Cap (vph)		1638						683	538	583	855		
v/s Ratio Prot		c0.42						0.13	0.11	c0.10	0.09		
v/s Ratio Perm										c0.29			
v/c Ratio		1.25						0.34	0.30	0.77	0.18		
Uniform Delay, d1		45.0						30.6	30.1	32.0	15.7		
Progression Factor		1.14						1.00	1.00	0.79	0.30		
Incremental Delay, d2		118.1						0.1	0.1	1.9	0.0		
Delay (s)		169.2						30.7	30.2	27.2	4.7		
Level of Service		F						C	C	C	A		
Approach Delay (s)		169.2			0.0			30.4			21.6		
Approach LOS		F			A			C			C		
Intersection Summary													
HCM 2000 Control Delay			120.3									HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.06										
Actuated Cycle Length (s)			135.0									Sum of lost time (s)	32.0
Intersection Capacity Utilization			127.8%									ICU Level of Service	H
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	640	1327	1019	776	1210	1454
v/c Ratio	2.49	2.50	2.70	4.56	0.45	1.62
Control Delay	705.3	705.4	789.3	1616.4	0.4	317.6
Queue Delay	0.3	0.2	0.0	0.0	7.6	1.6
Total Delay	705.6	705.6	789.3	1616.4	8.1	319.2
Queue Length 50th (ft)	~983	~1021	~1362	~1164	10	~641
Queue Length 95th (ft)	#1189	#1166	#1508	m#1004	m8	#693
Internal Link Dist (ft)		53			174	314
Turn Bay Length (ft)						
Base Capacity (vph)	257	530	378	170	2694	898
Starvation Cap Reductn	0	0	0	0	1439	0
Spillback Cap Reductn	6	14	0	0	0	211
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	2.55	2.57	2.70	4.56	0.96	2.12

Intersection Summary

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

18: US 290 WBFR & Menchaca Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations				↙	↕	↗	↙	↕			↕	↗	
Traffic Volume (vph)	0	0	0	663	1133	866	660	1113	0	0	1030	228	
Future Volume (vph)	0	0	0	663	1133	866	660	1113	0	0	1030	228	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				6.0	6.0	6.0	5.0	5.0			5.0		
Lane Util. Factor				0.91	0.91	1.00	1.00	0.95			0.91		
Frbp, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00		
Flpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00		
Frt				1.00	1.00	0.85	1.00	1.00			0.97		
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00		
Satd. Flow (prot)				1595	3284	1599	1769	3574			4929		
Flt Permitted				0.95	1.00	1.00	0.17	1.00			1.00		
Satd. Flow (perm)				1595	3284	1599	317	3574			4929		
Peak-hour factor, PHF	0.92	0.92	0.92	0.87	0.94	0.85	0.85	0.92	0.92	0.92	0.86	0.89	
Adj. Flow (vph)	0	0	0	762	1205	1019	776	1210	0	0	1198	256	
RTOR Reduction (vph)	0	0	0	0	0	120	0	0	0	0	26	0	
Lane Group Flow (vph)	0	0	0	640	1327	899	776	1210	0	0	1428	0	
Confl. Peds. (#/hr)							1					1	
Confl. Bikes (#/hr)												1	
Heavy Vehicles (%)	2%	2%	2%	3%	5%	1%	2%	1%	2%	2%	2%	3%	
Turn Type				Perm	NA	Perm	custom	NA				NA	
Protected Phases					7 8			1 2 6 10				1 6	
Permitted Phases				7 8		7 8	2 10						
Actuated Green, G (s)				21.0	21.0	21.0	70.0	98.0				23.0	
Effective Green, g (s)				21.0	21.0	21.0	70.0	98.0				23.0	
Actuated g/C Ratio				0.16	0.16	0.16	0.54	0.75				0.18	
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				257	530	258	170	2694				872	
v/s Ratio Prot								0.34				c0.29	
v/s Ratio Perm				0.40	0.40	c0.56	c2.45						
v/c Ratio				2.49	2.50	3.48	4.56	0.45				1.64	
Uniform Delay, d1				54.5	54.5	54.5	30.0	6.0				53.5	
Progression Factor				1.00	1.00	1.00	0.53	0.07				1.00	
Incremental Delay, d2				682.1	682.3	1127.9	1605.3	0.0				292.4	
Delay (s)				736.6	736.8	1182.4	1621.2	0.4				345.9	
Level of Service				F	F	F	F	A				F	
Approach Delay (s)		0.0			888.8			633.7				345.9	
Approach LOS		A			F			F				F	
Intersection Summary													
HCM 2000 Control Delay			687.1		HCM 2000 Level of Service							F	
HCM 2000 Volume to Capacity ratio			4.38										
Actuated Cycle Length (s)			130.0		Sum of lost time (s)						32.0		
Intersection Capacity Utilization			151.5%		ICU Level of Service						H		
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	313	581	268	2490	910	1080
v/c Ratio	0.91	0.86	0.64	1.41dr	1.95	0.43
Control Delay	82.4	64.8	28.0	137.3	449.6	7.8
Queue Delay	48.9	0.0	0.0	0.9	3.5	51.2
Total Delay	131.3	64.8	28.0	138.2	453.0	59.0
Queue Length 50th (ft)	261	252	88	~943	~1164	107
Queue Length 95th (ft)	#426	#337	187	#1035	m#434	m58
Internal Link Dist (ft)		62		300		174
Turn Bay Length (ft)						
Base Capacity (vph)	343	674	418	2042	467	2534
Starvation Cap Reductn	0	0	0	0	138	1713
Spillback Cap Reductn	76	0	0	540	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.17	0.86	0.64	1.66	2.77	1.32

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.
- dr Defacto Right Lane. Recode with 1 though lane as a right lane.

19: Menchaca Road & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (vph)	279	517	260	0	0	0	0	1438	839	737	1058	0		
Future Volume (vph)	279	517	260	0	0	0	0	1438	839	737	1058	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	6.0	6.0	6.0					5.0		5.0	5.0			
Lane Util. Factor	1.00	0.95	1.00					0.91		1.00	0.95			
Frpb, ped/bikes	1.00	1.00	0.99					1.00		1.00	1.00			
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00			
Frt	1.00	1.00	0.85					0.94		1.00	1.00			
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00			
Satd. Flow (prot)	1787	3505	1533					4810		1787	3505			
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00			
Satd. Flow (perm)	1787	3505	1533					4810		1787	3505			
Peak-hour factor, PHF	0.89	0.89	0.97	0.92	0.92	0.92	0.92	0.95	0.86	0.81	0.98	0.92		
Adj. Flow (vph)	313	581	268	0	0	0	0	1514	976	910	1080	0		
RTOR Reduction (vph)	0	0	122	0	0	0	0	8	0	0	0	0		
Lane Group Flow (vph)	313	581	146	0	0	0	0	2483	0	910	1080	0		
Confl. Peds. (#/hr)									1	1				
Confl. Bikes (#/hr)			1											
Heavy Vehicles (%)	1%	3%	4%	2%	2%	2%	2%	1%	1%	1%	3%	2%		
Turn Type	Perm	NA	Perm					NA		Prot	NA			
Protected Phases		8 10						1 2		6 7	1 2 6 7			
Permitted Phases	8 10		8 10											
Actuated Green, G (s)	26.0	26.0	26.0					55.0		33.0	93.0			
Effective Green, g (s)	26.0	26.0	26.0					55.0		33.0	93.0			
Actuated g/C Ratio	0.20	0.20	0.20					0.42		0.25	0.72			
Clearance Time (s)														
Vehicle Extension (s)														
Lane Grp Cap (vph)	357	701	306					2035		453	2507			
v/s Ratio Prot		0.17						c0.52		c0.51	0.31			
v/s Ratio Perm	c0.18		0.10											
v/c Ratio	0.88	0.83	0.48					1.41dr		2.01	0.43			
Uniform Delay, d1	50.4	49.9	46.0					37.5		48.5	7.6			
Progression Factor	1.00	1.00	1.00					1.00		0.55	1.06			
Incremental Delay, d2	20.2	7.6	0.4					103.6		454.7	0.0			
Delay (s)	70.6	57.5	46.4					141.1		481.5	8.1			
Level of Service	E	E	D					F		F	A			
Approach Delay (s)		58.5			0.0			141.1			224.6			
Approach LOS		E			A			F			F			
Intersection Summary														
HCM 2000 Control Delay			153.5									HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio			1.59											
Actuated Cycle Length (s)			130.0								32.0		Sum of lost time (s)	
Intersection Capacity Utilization			151.5%										ICU Level of Service	H
Analysis Period (min)			15											
dr Defacto Right Lane. Recode with 1 though lane as a right lane.														
c Critical Lane Group														

Intersection												
Int Delay, s/veh	121.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	198	189	17	176	4	188	12	129	2	25	37
Future Vol, veh/h	17	198	189	17	176	4	188	12	129	2	25	37
Conflicting Peds, #/hr	15	0	4	4	0	15	9	0	15	15	0	9
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	66	74	95	58	60	76	75	60	60	60	75
Heavy Vehicles, %	0	0	6	0	0	0	11	17	2	0	0	0
Mvmt Flow	34	300	255	18	303	7	247	16	215	3	42	49

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	325	0	0	559	0	0	897	861	447	984	985	331
Stage 1	-	-	-	-	-	-	500	500	-	358	358	-
Stage 2	-	-	-	-	-	-	397	361	-	626	627	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.21	6.67	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.21	5.67	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.21	5.67	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.599	4.153	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1246	-	-	1022	-	-	251	277	612	229	250	715
Stage 1	-	-	-	-	-	-	537	519	-	664	631	-
Stage 2	-	-	-	-	-	-	611	600	-	475	479	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1228	-	-	1018	-	-	~ 189	255	601	130	230	699
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 189	255	-	130	230	-
Stage 1	-	-	-	-	-	-	512	495	-	627	609	-
Stage 2	-	-	-	-	-	-	513	579	-	279	457	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.5	\$ 373.5	19.6
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	277	1228	-	-	1018	-	-	340
HCM Lane V/C Ratio	1.727	0.028	-	-	0.018	-	-	0.277
HCM Control Delay (s)	\$ 373.5	8	0	-	8.6	0	-	19.6
HCM Lane LOS	F	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	31	0.1	-	-	0.1	-	-	1.1

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


















Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	730	610	2385	946	580	2882
v/c Ratio	0.82	0.78	1.50	1.04	1.50	1.21
Control Delay	55.8	37.8	253.4	40.4	269.6	122.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.8	37.8	253.4	40.4	269.6	122.6
Queue Length 50th (ft)	312	435	~1523	~266	~656	~1619
Queue Length 95th (ft)	365	604	m#1289	m167	#774	#1736
Internal Link Dist (ft)	497		121			322
Turn Bay Length (ft)		125			125	
Base Capacity (vph)	890	778	1588	906	387	2382
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.78	1.50	1.04	1.50	1.21

Intersection Summary

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

1: S Lamar Blvd & W Oltorf Street
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted PM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		 			 
Traffic Volume (vph)	628	573	2242	804	476	2680
Future Volume (vph)	628	573	2242	804	476	2680
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1615	3574	1542	1787	3574
Flt Permitted	0.95	1.00	1.00	1.00	0.06	1.00
Satd. Flow (perm)	3433	1615	3574	1542	116	3574
Peak-hour factor, PHF	0.86	0.94	0.94	0.85	0.82	0.93
Adj. Flow (vph)	730	610	2385	946	580	2882
RTOR Reduction (vph)	0	1	0	221	0	0
Lane Group Flow (vph)	730	609	2385	725	580	2882
Confl. Peds. (#/hr)		10		6	6	
Confl. Bikes (#/hr)				5		
Heavy Vehicles (%)	2%	0%	1%	2%	1%	1%
Turn Type	Prot	pt+ov	NA	Perm	pm+pt	NA
Protected Phases	4	1 4	2		1	6
Permitted Phases		4		2	6	
Actuated Green, G (s)	35.0	65.0	60.0	60.0	90.0	90.0
Effective Green, g (s)	35.0	65.0	60.0	60.0	90.0	90.0
Actuated g/C Ratio	0.26	0.48	0.44	0.44	0.67	0.67
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	1.0		1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	890	777	1588	685	386	2382
v/s Ratio Prot	0.21	c0.38	0.67		c0.28	0.81
v/s Ratio Perm				0.47	c0.72	
v/c Ratio	0.82	0.78	1.50	1.06	1.50	1.21
Uniform Delay, d1	47.0	29.2	37.5	37.5	46.4	22.5
Progression Factor	1.00	1.00	0.84	0.71	1.00	1.00
Incremental Delay, d2	8.4	7.8	226.2	30.0	239.3	98.6
Delay (s)	55.4	37.0	257.6	56.5	285.7	121.1
Level of Service	E	D	F	E	F	F
Approach Delay (s)	47.0		200.5			148.7
Approach LOS	D		F			F
Intersection Summary						
HCM 2000 Control Delay			153.2		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.34			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			118.8%		ICU Level of Service	H
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	179	457	164	279	2734	214	65	3027
v/c Ratio	0.71	0.95	0.62	1.70	1.16	0.21	1.16	1.52
Control Delay	57.8	71.2	56.2	342.3	97.2	7.7	123.0	261.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.8	71.2	56.2	342.3	97.2	7.7	123.0	261.4
Queue Length 50th (ft)	127	330	113	~337	~1517	56	~67	~1953
Queue Length 95th (ft)	163	168	151	m#275	m#1191	m45	m#56	m#1570
Internal Link Dist (ft)		215	74		201			588
Turn Bay Length (ft)	75			50		125	50	
Base Capacity (vph)	252	506	292	164	2363	1034	56	1992
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.90	0.56	1.70	1.16	0.21	1.16	1.52

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

2: S Lamar Blvd & Bluebonnet Lane
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗			↖		↖	↑↑	↗	↖	↗	
Traffic Volume (vph)	136	57	289	0	64	72	234	2461	163	47	2903	2
Future Volume (vph)	136	57	289	0	64	72	234	2461	163	47	2903	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	0.97			0.98		1.00	1.00	0.95	1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.89			0.93		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1798	1634			1738		1787	3574	1528	1805	3539	
Flt Permitted	0.34	1.00			1.00		0.05	1.00	1.00	0.05	1.00	
Satd. Flow (perm)	653	1634			1738		93	3574	1528	100	3539	
Peak-hour factor, PHF	0.76	0.47	0.86	0.69	0.75	0.91	0.84	0.90	0.76	0.72	0.96	0.60
Adj. Flow (vph)	179	121	336	0	85	79	279	2734	214	65	3024	3
RTOR Reduction (vph)	0	59	0	0	22	0	0	0	25	0	0	0
Lane Group Flow (vph)	179	398	0	0	142	0	279	2734	189	65	3027	0
Confl. Peds. (#/hr)	12		12	12			12	8	9	9		8
Confl. Bikes (#/hr)			6				5		12			4
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%	1%	1%	0%	0%	2%	0%
Turn Type	pm+pt	NA			NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4						2		2	6		
Actuated Green, G (s)	34.7	34.7			18.7		89.3	89.3	89.3	76.0	76.0	
Effective Green, g (s)	34.7	34.7			18.7		89.3	89.3	89.3	76.0	76.0	
Actuated g/C Ratio	0.26	0.26			0.14		0.66	0.66	0.66	0.56	0.56	
Clearance Time (s)	6.0	6.0			6.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0			2.0		1.0	1.0	1.0	1.0	1.0	
Lane Grp Cap (vph)	252	419			240		165	2364	1010	56	1992	
v/s Ratio Prot	0.05	c0.24			0.08		c0.10	0.76			0.86	
v/s Ratio Perm	0.13						c1.01		0.12	0.65		
v/c Ratio	0.71	0.95			0.59		1.69	1.16	0.19	1.16	1.52	
Uniform Delay, d1	43.0	49.3			54.6		45.8	22.9	8.8	29.5	29.5	
Progression Factor	1.00	1.00			1.00		0.86	1.12	1.24	1.11	1.08	
Incremental Delay, d2	7.6	30.5			2.6		313.3	70.9	0.0	89.3	234.0	
Delay (s)	50.6	79.8			57.1		352.8	96.4	11.0	121.9	266.0	
Level of Service	D	E			E		F	F	B	F	F	
Approach Delay (s)		71.6			57.1			112.9			263.0	
Approach LOS		E			E			F			F	

Intersection Summary

HCM 2000 Control Delay	173.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.59		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	128.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1024	2446	43	952	2876
v/c Ratio	1.25	1.10	0.04	1.84	1.21
Control Delay	163.3	63.8	1.5	414.1	106.7
Queue Delay	0.0	0.0	0.0	0.0	0.4
Total Delay	163.3	63.9	1.5	414.1	107.1
Queue Length 50th (ft)	~635	~1302	1	~1298	~1597
Queue Length 95th (ft)	#785	#1412	m1	m#853	m155
Internal Link Dist (ft)		324			498
Turn Bay Length (ft)				100	
Base Capacity (vph)	818	2223	988	516	2385
Starvation Cap Reductn	0	43	0	0	0
Spillback Cap Reductn	0	0	0	0	350
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.25	1.12	0.04	1.84	1.41

Intersection Summary

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

3: S Lamar Blvd & Menchaca Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗↗	↕↕	↘	↘	↕↕
Traffic Volume (vph)	0	942	2201	32	819	2646
Future Volume (vph)	0	942	2201	32	819	2646
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0
Lane Util. Factor		0.88	0.95	1.00	1.00	0.95
Frbp, ped/bikes		1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		2814	3574	1581	1787	3539
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		2814	3574	1581	1787	3539
Peak-hour factor, PHF	0.92	0.92	0.90	0.75	0.86	0.92
Adj. Flow (vph)	0	1024	2446	43	952	2876
RTOR Reduction (vph)	0	6	0	5	0	0
Lane Group Flow (vph)	0	1018	2446	38	952	2876
Confl. Peds. (#/hr)		7		6	6	
Confl. Bikes (#/hr)		1		9		
Heavy Vehicles (%)	2%	1%	1%	0%	1%	2%
Turn Type		pt+ov	NA	Perm	Prot	NA
Protected Phases		1 4	2 3		1 4	1 2
Permitted Phases				2 3		
Actuated Green, G (s)		39.0	84.0	84.0	39.0	91.0
Effective Green, g (s)		39.0	84.0	84.0	39.0	91.0
Actuated g/C Ratio		0.29	0.62	0.62	0.29	0.67
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		812	2223	983	516	2385
v/s Ratio Prot		0.36	c0.68		c0.53	c0.81
v/s Ratio Perm				0.02		
v/c Ratio		1.25	1.10	0.04	1.84	1.21
Uniform Delay, d1		48.0	25.5	9.9	48.0	22.0
Progression Factor		1.00	0.49	0.19	1.30	0.35
Incremental Delay, d2		124.4	48.4	0.0	380.9	93.0
Delay (s)		172.4	60.8	1.9	443.1	100.6
Level of Service		F	E	A	F	F
Approach Delay (s)	172.4		59.7			185.8
Approach LOS	F		E			F
Intersection Summary						
HCM 2000 Control Delay			141.2		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.55			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	24.0
Intersection Capacity Utilization			132.9%		ICU Level of Service	H
Analysis Period (min)			15			
c Critical Lane Group						





























Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	158	541	135	235	306	2263	105	136	2825
v/c Ratio	0.85	0.80	2.37	0.37	2.55	0.94	0.10	5.44	1.29
Control Delay	90.9	51.6	690.8	48.0	725.3	12.9	0.3	2016.5	144.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	29.8	0.0	0.0	0.1
Total Delay	90.9	51.6	690.8	48.0	725.3	42.7	0.3	2016.5	144.1
Queue Length 50th (ft)	136	193	~193	91	~451	1000	2	~227	~1662
Queue Length 95th (ft)	#247	211	#331	124	m#398	m521	m1	m#188	m#1212
Internal Link Dist (ft)		257		238		436			324
Turn Bay Length (ft)	90		100		125		160	100	
Base Capacity (vph)	185	675	57	636	120	2409	1088	25	2191
Starvation Cap Reductn	0	0	0	0	0	0	0	0	53
Spillback Cap Reductn	0	0	0	0	0	284	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.80	2.37	0.37	2.55	1.06	0.10	5.44	1.32

Intersection Summary

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

4: S Lamar Blvd & Barton Skyway/Lightsey Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (vph)	136	185	240	123	170	21	269	2037	92	102	2445	81
Future Volume (vph)	136	185	240	123	170	21	269	2037	92	102	2445	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.92		1.00	0.98		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1799	3263		1800	3520		1805	3574	1579	1736	3519	
Flt Permitted	0.55	1.00		0.17	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1042	3263		325	3520		1805	3574	1579	1736	3519	
Peak-hour factor, PHF	0.86	0.78	0.79	0.91	0.85	0.60	0.88	0.90	0.88	0.75	0.90	0.75
Adj. Flow (vph)	158	237	304	135	200	35	306	2263	105	136	2717	108
RTOR Reduction (vph)	0	95	0	0	11	0	0	0	24	0	2	0
Lane Group Flow (vph)	158	446	0	135	224	0	306	2263	81	136	2823	0
Confl. Peds. (#/hr)	3		5	5		3	5		18	18		5
Confl. Bikes (#/hr)			2						7			8
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	4%	2%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		8			8		5	5 6		7	6 7	
Permitted Phases	8			8					5 6			
Actuated Green, G (s)	24.0	24.0		24.0	24.0		9.0	91.0	91.0	2.0	84.0	
Effective Green, g (s)	24.0	24.0		24.0	24.0		9.0	91.0	91.0	2.0	84.0	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.07	0.67	0.67	0.01	0.62	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0			6.0		
Vehicle Extension (s)	2.0	2.0		2.0	2.0		1.0			1.0		
Lane Grp Cap (vph)	185	580		57	625		120	2409	1064	25	2189	
v/s Ratio Prot		0.14			0.06		c0.17	0.63		c0.08	c0.80	
v/s Ratio Perm	0.15			c0.42					0.05			
v/c Ratio	0.85	0.77		2.37	0.36		2.55	0.94	0.08	5.44	1.29	
Uniform Delay, d1	53.8	52.9		55.5	48.7		63.0	19.5	7.6	66.5	25.5	
Progression Factor	1.00	1.00		1.00	1.00		1.17	0.57	0.12	0.70	0.20	
Incremental Delay, d2	36.6	9.5		666.3	1.6		699.7	1.0	0.0	2005.9	130.6	
Delay (s)	90.4	62.4		721.8	50.3		773.4	12.2	0.9	2052.8	135.7	
Level of Service	F	E		F	D		F	B	A	F	F	
Approach Delay (s)		68.7			295.3			98.8			223.8	
Approach LOS		E			F			F			F	
Intersection Summary												
HCM 2000 Control Delay			161.7				HCM 2000 Level of Service			F		
HCM 2000 Volume to Capacity ratio			1.73									
Actuated Cycle Length (s)			135.0				Sum of lost time (s)			24.0		
Intersection Capacity Utilization			137.6%				ICU Level of Service			H		
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	156	212	318	49	2535	329	2578
v/c Ratio	1.43	0.91	0.83	0.88	1.14	2.30	1.01
Control Delay	275.4	92.1	55.8	117.7	96.0	611.3	15.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	275.4	92.1	55.8	117.7	96.0	611.3	15.1
Queue Length 50th (ft)	~180	183	199	33	~1368	~435	~1280
Queue Length 95th (ft)	#182	#252	161	#104	#1496	m#315	m129
Internal Link Dist (ft)	270		212		208		469
Turn Bay Length (ft)		120		95		125	
Base Capacity (vph)	109	233	382	56	2217	143	2562
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.43	0.91	0.83	0.88	1.14	2.30	1.01

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.




















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

Queue shown is maximum after two cycles.

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

5: S Lamar Blvd & Private Driveway/Panther Trail
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	16	45	161	11	240	39	2210	180	286	2447	20
Future Volume (veh/h)	50	16	45	161	11	240	39	2210	180	286	2447	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1814	1900	1900	1880	1900	1827	1881	1900
Adj Flow Rate, veh/h	71	27	58	212	18	300	49	2326	209	329	2549	29
Adj No. of Lanes	0	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.70	0.60	0.78	0.76	0.60	0.80	0.79	0.95	0.86	0.87	0.96	0.69
Percent Heavy Veh, %	0	0	0	0	0	5	0	1	2	4	1	0
Cap, veh/h	39	20	12	233	18	294	59	2084	184	144	2600	30
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.63	0.63	0.63	0.05	0.72	0.72
Sat Flow, veh/h	0	95	56	1324	85	1419	123	3311	292	1740	3619	41
Grp Volume(v), veh/h	156	0	0	212	0	318	49	1235	1300	329	1256	1322
Grp Sat Flow(s),veh/h/ln	151	0	0	1324	0	1504	123	1786	1817	1740	1787	1873
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	28.0	5.8	85.0	85.0	7.0	89.8	91.2
Cycle Q Clear(g_c), s	28.0	0.0	0.0	28.0	0.0	28.0	85.0	85.0	85.0	7.0	89.8	91.2
Prop In Lane	0.46		0.37	1.00		0.94	1.00		0.16	1.00		0.02
Lane Grp Cap(c), veh/h	70	0	0	233	0	312	59	1124	1144	144	1284	1346
V/C Ratio(X)	2.23	0.00	0.00	0.91	0.00	1.02	0.84	1.10	1.14	2.29	0.98	0.98
Avail Cap(c_a), veh/h	70	0	0	233	0	312	59	1124	1144	144	1284	1346
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.5	0.0	0.0	55.6	0.0	53.5	67.2	25.0	25.0	47.5	18.0	18.2
Incr Delay (d2), s/veh	595.5	0.0	0.0	39.5	0.0	56.1	76.8	58.0	72.4	602.8	20.4	20.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.2	0.0	0.0	10.4	0.0	16.5	3.1	59.6	65.3	29.4	50.9	54.0
LnGrp Delay(d),s/veh	651.0	0.0	0.0	95.1	0.0	109.6	144.0	83.0	97.4	650.3	38.4	38.9
LnGrp LOS	F			F		F	F	F	F	F	D	D
Approach Vol, veh/h		156			530			2584			2907	
Approach Delay, s/veh		651.0			103.8			91.4			107.9	
Approach LOS		F			F			F			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	12.0	90.0		33.0		102.0		33.0				
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s	7.0	85.0		28.0		97.0		28.0				
Max Q Clear Time (g_c+I1), s	9.0	87.0		30.0		93.2		30.0				
Green Ext Time (p_c), s	0.0	0.0		0.0		2.8		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	114.3											
HCM 2010 LOS	F											

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Private Driveway

Queues

Phase 3-2036 Forecasted PM



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL2	SBT	NWL	NWR
Lane Group Flow (vph)	504	496	222	214	842	252	2396	834	1763
v/c Ratio	2.42	1.21	1.28	0.58	0.70	1.66	0.79	3.88	1.62
Control Delay	676.9	143.7	197.5	22.0	41.5	359.4	30.9	1322.0	311.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	676.9	143.7	197.5	22.0	41.5	359.4	30.9	1322.0	311.0
Queue Length 50th (ft)	~615	~352	~184	41	324	~308	479	~1272	~1152
Queue Length 95th (ft)	#734	#352	#347	21	400	#453	526	#988	#1218
Internal Link Dist (ft)		165		155	240		599	179	
Turn Bay Length (ft)						160			
Base Capacity (vph)	208	409	174	366	1195	152	3033	215	1088
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	2.42	1.21	1.28	0.58	0.70	1.66	0.79	3.88	1.62

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Private Driveway

HCM Signalized Intersection Capacity Analysis

Phase 3-2036 Forecasted PM

Movement	EBL	EBT	EBR2	WBL	WBT	WBR	NBT	SBL2	SBT	SBR	NWL	NWR
Lane Configurations												
Traffic Volume (vph)	413	48	373	211	20	121	775	217	2043	133	517	1327
Future Volume (vph)	413	48	373	211	20	121	775	217	2043	133	517	1327
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		5.5	7.0	5.5		7.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		0.95	1.00	0.86		1.00	0.88
Frbp, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.87		1.00	0.88		1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1804	1631		1787	1613		3574	1805	6386		1805	2842
Flt Permitted	0.34	1.00		0.22	1.00		1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	638	1631		407	1613		3574	1805	6386		1805	2842
Peak-hour factor, PHF	0.82	0.72	0.87	0.95	0.55	0.68	0.92	0.86	0.93	0.67	0.62	0.86
Adj. Flow (vph)	504	67	429	222	36	178	842	252	2197	199	834	1543
RTOR Reduction (vph)	0	178	0	0	137	0	0	0	11	0	0	137
Lane Group Flow (vph)	504	318	0	222	77	0	842	252	2385	0	834	1626
Confl. Peds. (#/hr)	2		1	1		2				10	10	
Confl. Bikes (#/hr)			1			2				1		
Heavy Vehicles (%)	0%	0%	0%	1%	0%	2%	1%	0%	1%	0%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA		NA	Prot	NA		Prot	Prot
Protected Phases	7	4		3	8		2!	1	6		5	2!
Permitted Phases	4			8								
Actuated Green, G (s)	27.0	18.5		27.0	18.5		43.5	11.0	61.5		15.5	43.5
Effective Green, g (s)	27.0	18.5		27.0	18.5		43.5	11.0	61.5		15.5	43.5
Actuated g/C Ratio	0.21	0.14		0.21	0.14		0.33	0.08	0.47		0.12	0.33
Clearance Time (s)	6.5	6.5		6.5	6.5		5.5	7.0	5.5		7.5	5.5
Vehicle Extension (s)	1.0	3.0		3.0	3.0		3.0	2.0	2.0		3.0	3.0
Lane Grp Cap (vph)	208	232		174	229		1195	152	3021		215	950
v/s Ratio Prot	c0.16	0.20		0.08	0.05		0.24	c0.14	0.37		c0.46	c0.57
v/s Ratio Perm	c0.34			0.18								
v/c Ratio	2.42	1.37		1.28	0.34		0.70	1.66	0.79		3.88	1.71
Uniform Delay, d1	49.9	55.8		49.1	50.2		37.7	59.5	28.8		57.2	43.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	654.8	192.6		161.0	3.9		3.5	323.4	2.2		1306.8	324.7
Delay (s)	704.7	248.3		210.1	54.1		41.2	382.9	31.0		1364.0	367.9
Level of Service	F	F		F	D		D	F	C		F	F
Approach Delay (s)		478.4			133.5		41.2		64.5		687.8	
Approach LOS		F			F		D		E		F	

Intersection Summary		
HCM 2000 Control Delay	336.1	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	2.25	F
Actuated Cycle Length (s)	130.0	Sum of lost time (s)
Intersection Capacity Utilization	170.7%	33.0
Analysis Period (min)	15	ICU Level of Service
		H

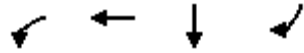
! Phase conflict between lane groups.
 c Critical Lane Group

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Private Driveway
 HCM Signalized Intersection Capacity Analysis

Phase 3-2036 Forecasted PM



Movement	NWR2
Lane Configurations	
Traffic Volume (vph)	132
Future Volume (vph)	132
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frbp, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.60
Adj. Flow (vph)	220
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	2
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Lane Group	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	849	1763	1967	457
v/c Ratio	1.06	1.10	0.85	0.29
Control Delay	45.1	61.9	43.8	0.5
Queue Delay	0.0	0.0	0.2	0.0
Total Delay	45.1	61.9	44.0	0.5
Queue Length 50th (ft)	~719	~892	458	0
Queue Length 95th (ft)	m347	m366	491	0
Internal Link Dist (ft)		23	453	
Turn Bay Length (ft)				
Base Capacity (vph)	803	1607	2325	1595
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	54	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.06	1.10	0.87	0.29

Intersection Summary

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

7: S Lamar Blvd & Capity of Texas Hwy
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations				↖	↗						↑↑↑	↗	
Traffic Volume (vph)	0	0	0	839	1319	0	0	0	0	0	1731	416	
Future Volume (vph)	0	0	0	839	1319	0	0	0	0	0	1731	416	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				6.0	6.0						6.0	4.0	
Lane Util. Factor				0.91	0.91						0.86	1.00	
Frbp, ped/bikes				1.00	1.00						1.00	0.99	
Flpb, ped/bikes				1.00	1.00						1.00	1.00	
Frt				1.00	1.00						1.00	0.85	
Flt Protected				0.95	1.00						1.00	1.00	
Satd. Flow (prot)				1626	3377						6408	1595	
Flt Permitted				0.95	1.00						1.00	1.00	
Satd. Flow (perm)				1626	3377						6408	1595	
Peak-hour factor, PHF	0.92	0.92	0.92	0.82	0.83	0.92	0.92	0.92	0.92	0.92	0.88	0.91	
Adj. Flow (vph)	0	0	0	1023	1589	0	0	0	0	0	1967	457	
RTOR Reduction (vph)	0	0	0	56	56	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	793	1707	0	0	0	0	0	1967	457	
Confl. Bikes (#/hr)												1	
Heavy Vehicles (%)	2%	2%	2%	1%	2%	0%	2%	2%	2%	2%	2%	0%	
Turn Type				custom	NA						NA	Free	
Protected Phases				1 2 4 8	1 2 4 8						5 6 7		
Permitted Phases				3	3							Free	
Actuated Green, G (s)				63.0	63.0						56.0	135.0	
Effective Green, g (s)				63.0	63.0						56.0	135.0	
Actuated g/C Ratio				0.47	0.47						0.41	1.00	
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				831	1726						2658	1595	
v/s Ratio Prot				0.44	c0.45						c0.31		
v/s Ratio Perm				0.05	0.05							0.29	
v/c Ratio				0.95	0.99						0.74	0.29	
Uniform Delay, d1				34.6	35.7						33.4	0.0	
Progression Factor				0.50	0.52						1.00	1.00	
Incremental Delay, d2				3.2	4.3						1.9	0.5	
Delay (s)				20.5	22.7						35.3	0.5	
Level of Service				C	C						D	A	
Approach Delay (s)		0.0			22.0			0.0			28.7		
Approach LOS		A			C			A			C		
Intersection Summary													
HCM 2000 Control Delay			25.2		HCM 2000 Level of Service						C		
HCM 2000 Volume to Capacity ratio			1.15										
Actuated Cycle Length (s)			135.0		Sum of lost time (s)					40.0			
Intersection Capacity Utilization			99.9%		ICU Level of Service					F			
Analysis Period (min)			15										
c Critical Lane Group													















Lane Group	WBT	NBL	NBT
Lane Group Flow (vph)	2038	466	1448
v/c Ratio	1.87	0.48	0.48
Control Delay	422.3	7.6	8.9
Queue Delay	0.6	3.2	1.6
Total Delay	422.9	10.7	10.4
Queue Length 50th (ft)	~996	324	353
Queue Length 95th (ft)	#1078	m22	m24
Internal Link Dist (ft)	133		295
Turn Bay Length (ft)			
Base Capacity (vph)	1092	974	3001
Starvation Cap Reductn	0	395	1293
Spillback Cap Reductn	125	135	212
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	2.11	0.80	0.85

Intersection Summary

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

8: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↑	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1814	0	496	1191	0	0	0	0
Future Volume (vph)	0	0	0	0	1814	0	496	1191	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0		6.0	6.0				
Lane Util. Factor					0.91		0.86	0.86				
Frt					1.00		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					5085		1537	4874				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					5085		1537	4874				
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.89	0.89	0.82	0.91	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	2038	0	605	1309	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	40	40	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2038	0	426	1408	0	0	0	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	0%	2%	2%	2%	2%
Turn Type					NA		custom	NA				
Protected Phases					1 7 8		2 3 4 5	2 3 4 5				
Permitted Phases							6	6				
Actuated Green, G (s)					32.0		85.0	85.0				
Effective Green, g (s)					30.0		83.0	83.0				
Actuated g/C Ratio					0.22		0.61	0.61				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)					1130		1013	3213				
v/s Ratio Prot					c0.40		0.13	c0.14				
v/s Ratio Perm							0.15	0.15				
v/c Ratio					1.80		0.42	0.44				
Uniform Delay, d1					52.5		13.5	13.7				
Progression Factor					0.95		0.82	0.79				
Incremental Delay, d2					364.7		0.0	0.0				
Delay (s)					414.6		11.1	10.9				
Level of Service					F		B	B				
Approach Delay (s)		0.0			414.6			10.9			0.0	
Approach LOS		A			F			B			A	
Intersection Summary												
HCM 2000 Control Delay			219.1				HCM 2000 Level of Service		F			
HCM 2000 Volume to Capacity ratio			0.98									
Actuated Cycle Length (s)			135.0				Sum of lost time (s)		40.0			
Intersection Capacity Utilization			98.0%				ICU Level of Service		F			
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	EBT	SBL	SBT
Lane Group Flow (vph)	1830	682	2127
v/c Ratio	1.54	0.67	0.67
Control Delay	281.3	8.2	8.3
Queue Delay	0.3	1.5	0.6
Total Delay	281.6	9.7	9.0
Queue Length 50th (ft)	~823	265	82
Queue Length 95th (ft)	#904	m227	m84
Internal Link Dist (ft)	69		291
Turn Bay Length (ft)			
Base Capacity (vph)	1191	1018	3160
Starvation Cap Reductn	0	171	583
Spillback Cap Reductn	71	66	102
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.63	0.81	0.83

Intersection Summary

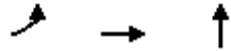
- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

9: S Lamar Blvd & Capity of Texas Hwy
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↑↑↑								↘	↑↑↑		
Traffic Volume (vph)	0	1629	0	0	0	0	0	0	0	909	1616	0	
Future Volume (vph)	0	1629	0	0	0	0	0	0	0	909	1616	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		2.0								6.0	6.0		
Lane Util. Factor		0.91								0.86	0.86		
Frbp, ped/bikes		1.00								1.00	1.00		
Flpb, ped/bikes		1.00								1.00	1.00		
Frt		1.00								1.00	1.00		
Flt Protected		1.00								0.95	0.99		
Satd. Flow (prot)		5187								1522	4846		
Flt Permitted		1.00								0.95	0.99		
Satd. Flow (perm)		5187								1522	4846		
Peak-hour factor, PHF	0.92	0.89	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.88	0.91	0.92	
Adj. Flow (vph)	0	1830	0	0	0	0	0	0	0	1033	1776	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	37	37	0	
Lane Group Flow (vph)	0	1830	0	0	0	0	0	0	0	645	2090	0	
Confl. Bikes (#/hr)			1										
Heavy Vehicles (%)	2%	0%	0%	2%	2%	2%	2%	2%	2%	2%	0%	0%	
Turn Type		NA								custom	NA		
Protected Phases		3 4 5								1 2 6 8	1 2 6 8		
Permitted Phases										7	7		
Actuated Green, G (s)		27.0								88.0	88.0		
Effective Green, g (s)		21.0								88.0	88.0		
Actuated g/C Ratio		0.16								0.65	0.65		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)		806								1059	3374		
v/s Ratio Prot		c0.35								0.39	c0.40		
v/s Ratio Perm										0.03	0.03		
v/c Ratio		2.27								0.61	0.62		
Uniform Delay, d1		57.0								13.6	13.7		
Progression Factor		1.00								0.77	0.79		
Incremental Delay, d2		575.7								0.3	0.1		
Delay (s)		632.7								10.7	11.0		
Level of Service		F								B	B		
Approach Delay (s)		632.7			0.0			0.0			10.9		
Approach LOS		F			A			A			B		
Intersection Summary													
HCM 2000 Control Delay			256.2		HCM 2000 Level of Service						F		
HCM 2000 Volume to Capacity ratio			1.11										
Actuated Cycle Length (s)			135.0		Sum of lost time (s)					40.0			
Intersection Capacity Utilization			77.1%		ICU Level of Service					D			
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBL	EBT	NBT
Lane Group Flow (vph)	682	1967	2028
v/c Ratio	0.59	0.83	2.19
Control Delay	3.9	13.9	565.4
Queue Delay	52.8	47.5	0.6
Total Delay	56.6	61.4	566.0
Queue Length 50th (ft)	454	876	~824
Queue Length 95th (ft)	m3	m590	#810
Internal Link Dist (ft)		38	673
Turn Bay Length (ft)			
Base Capacity (vph)	1165	2362	926
Starvation Cap Reductn	571	848	0
Spillback Cap Reductn	7	3	104
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.15	1.30	2.47

Intersection Summary

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

10: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↖↗						↑↑↑				
Traffic Volume (vph)	675	1834	0	0	0	0	0	1270	413	0	0	0
Future Volume (vph)	675	1834	0	0	0	0	0	1270	413	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0						6.0				
Lane Util. Factor	0.91	0.91						0.86				
Frbp, ped/bikes	1.00	1.00						1.00				
Flpb, ped/bikes	1.00	1.00						1.00				
Frt	1.00	1.00						0.96				
Flt Protected	0.95	1.00						1.00				
Satd. Flow (prot)	1643	3418						6273				
Flt Permitted	0.95	1.00						1.00				
Satd. Flow (perm)	1643	3418						6273				
Peak-hour factor, PHF	0.89	0.97	0.92	0.92	0.92	0.92	0.92	0.83	0.83	0.92	0.92	0.92
Adj. Flow (vph)	758	1891	0	0	0	0	0	1530	498	0	0	0
RTOR Reduction (vph)	45	33	0	0	0	0	0	41	0	0	0	0
Lane Group Flow (vph)	637	1934	0	0	0	0	0	1987	0	0	0	0
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	0%	1%	2%	2%	2%	2%	2%	0%	0%	2%	2%	2%
Turn Type	custom	NA						NA				
Protected Phases	4 5 6 8	4 5 6 8						1 2 3				
Permitted Phases	7	7										
Actuated Green, G (s)	93.0	93.0						26.0				
Effective Green, g (s)	93.0	93.0						26.0				
Actuated g/C Ratio	0.69	0.69						0.19				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	1204	2506						1208				
v/s Ratio Prot	0.36	c0.53						c0.32				
v/s Ratio Perm	0.03	0.04										
v/c Ratio	0.53	0.77						1.64				
Uniform Delay, d1	10.3	14.0						54.5				
Progression Factor	0.63	1.32						1.00				
Incremental Delay, d2	0.0	0.1						293.9				
Delay (s)	6.4	18.5						348.4				
Level of Service	A	B						F				
Approach Delay (s)		15.4			0.0			348.4			0.0	
Approach LOS		B			A			F			A	
Intersection Summary												
HCM 2000 Control Delay			159.8					HCM 2000 Level of Service		F		
HCM 2000 Volume to Capacity ratio			1.25									
Actuated Cycle Length (s)			135.0					Sum of lost time (s)		40.0		
Intersection Capacity Utilization			82.2%					ICU Level of Service		E		
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	999	2071	36	212	255	236
v/c Ratio	3.52	3.55	0.09	0.42	0.16	0.22
Control Delay	1158.3	1169.2	0.5	8.5	1.3	27.5
Queue Delay	3.8	1.6	0.0	5.0	0.0	0.6
Total Delay	1162.0	1170.8	0.5	13.6	1.3	28.1
Queue Length 50th (ft)	~1648	~1711	0	23	5	38
Queue Length 95th (ft)	#1881	#1853	0	m19	m4	47
Internal Link Dist (ft)		364			236	206
Turn Bay Length (ft)						
Base Capacity (vph)	284	583	392	500	1593	1059
Starvation Cap Reductn	0	0	0	221	0	0
Spillback Cap Reductn	69	106	0	0	0	504
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	4.65	4.34	0.09	0.76	0.16	0.43

Intersection Summary

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

11: West Gate Blvd & US 290 WBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations				↙	↕	↗	↙	↕			↕	↗	
Traffic Volume (vph)	0	0	0	1599	1178	25	382	34	0	0	111	59	
Future Volume (vph)	0	0	0	1599	1178	25	382	34	0	0	111	59	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				5.5	5.5	5.5	5.5	6.0			6.0		
Lane Util. Factor				0.91	0.91	1.00	0.91	0.91			0.91		
Frbp, ped/bikes				1.00	1.00	0.99	1.00	1.00			0.99		
Flpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00		
Frt				1.00	1.00	0.85	1.00	1.00			0.95		
Flt Protected				0.95	0.98	1.00	0.95	0.96			1.00		
Satd. Flow (prot)				1643	3371	1487	1625	3264			4773		
Flt Permitted				0.95	0.98	1.00	0.60	0.63			1.00		
Satd. Flow (perm)				1643	3371	1487	1024	2158			4773		
Peak-hour factor, PHF	0.92	0.92	0.92	0.88	0.94	0.70	0.90	0.79	0.92	0.92	0.74	0.69	
Adj. Flow (vph)	0	0	0	1817	1253	36	424	43	0	0	150	86	
RTOR Reduction (vph)	0	0	0	0	0	30	0	0	0	0	68	0	
Lane Group Flow (vph)	0	0	0	999	2071	6	212	255	0	0	168	0	
Confl. Peds. (#/hr)							2					2	
Confl. Bikes (#/hr)						2							
Heavy Vehicles (%)	2%	2%	2%	0%	1%	7%	1%	5%	2%	2%	0%	6%	
Turn Type				Perm	NA	Perm	custom	NA				NA	
Protected Phases					4 5			1 2 6 7				1 2	
Permitted Phases				4 5		4 5	6 7						
Actuated Green, G (s)				22.0	22.0	22.0	63.5	96.5				27.5	
Effective Green, g (s)				22.0	22.0	22.0	63.5	85.5				27.5	
Actuated g/C Ratio				0.17	0.17	0.17	0.49	0.66				0.21	
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				278	570	251	500	1419				1009	
v/s Ratio Prot												0.04	
v/s Ratio Perm				0.61	0.61	0.00	c0.21	c0.12					
v/c Ratio				3.59	3.63	0.02	0.42	0.18				0.17	
Uniform Delay, d1				54.0	54.0	45.0	21.5	8.6				41.9	
Progression Factor				1.00	1.00	1.00	0.37	0.24				1.00	
Incremental Delay, d2				1176.0	1189.3	0.2	0.0	0.0				0.0	
Delay (s)				1230.0	1243.3	45.2	8.1	2.1				41.9	
Level of Service				F	F	D	A	A				D	
Approach Delay (s)		0.0			1225.2			4.8				41.9	
Approach LOS		A			F			A				D	
Intersection Summary													
HCM 2000 Control Delay			1002.2		HCM 2000 Level of Service							F	
HCM 2000 Volume to Capacity ratio			1.16										
Actuated Cycle Length (s)			130.0		Sum of lost time (s)						34.0		
Intersection Capacity Utilization			121.9%		ICU Level of Service						H		
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	43	1270	826	385	157	1840
v/c Ratio	0.06	0.93	1.21	0.84	0.30	1.00
Control Delay	24.4	49.8	146.1	34.4	60.4	48.7
Queue Delay	0.0	0.0	0.0	0.0	2.3	39.3
Total Delay	24.4	49.8	146.2	34.4	62.7	88.0
Queue Length 50th (ft)	22	529	~408	124	102	516
Queue Length 95th (ft)	35	556	#547	#220	m36	m4
Internal Link Dist (ft)		52	369			236
Turn Bay Length (ft)						
Base Capacity (vph)	722	1367	681	460	520	1846
Starvation Cap Reductn	0	0	0	0	251	793
Spillback Cap Reductn	6	0	5	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.93	1.22	0.84	0.58	1.75

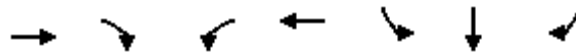
Intersection Summary

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

12: West Gate Blvd & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (vph)	29	750	337	0	0	0	0	400	640	129	1619	0		
Future Volume (vph)	29	750	337	0	0	0	0	400	640	129	1619	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	6.0	6.0						6.0	6.0	5.5	5.5			
Lane Util. Factor	1.00	0.95						0.91	0.91	1.00	0.95			
Frbp, ped/bikes	1.00	1.00						0.99	0.99	1.00	1.00			
Flpb, ped/bikes	1.00	1.00						1.00	1.00	1.00	1.00			
Frt	1.00	0.96						0.93	0.85	1.00	1.00			
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00			
Satd. Flow (prot)	1805	3407						3162	1433	1805	3610			
Flt Permitted	0.95	1.00						1.00	1.00	0.95	1.00			
Satd. Flow (perm)	1805	3407						3162	1433	1805	3610			
Peak-hour factor, PHF	0.67	0.83	0.92	0.92	0.92	0.92	0.92	0.91	0.83	0.82	0.88	0.92		
Adj. Flow (vph)	43	904	366	0	0	0	0	440	771	157	1840	0		
RTOR Reduction (vph)	0	5	0	0	0	0	0	121	206	0	0	0		
Lane Group Flow (vph)	43	1265	0	0	0	0	0	705	179	157	1840	0		
Confl. Peds. (#/hr)			1						1	1				
Confl. Bikes (#/hr)			1						1					
Heavy Vehicles (%)	0%	1%	1%	2%	2%	2%	2%	1%	1%	0%	0%	0%		
Turn Type	Split	NA						NA	Perm	Prot	NA			
Protected Phases	1 7	1 7						5 6		2 4	2 4 5 6			
Permitted Phases									5 6					
Actuated Green, G (s)	52.0	52.0						23.5	23.5	37.5	66.5			
Effective Green, g (s)	46.5	46.5						23.5	23.5	37.5	60.5			
Actuated g/C Ratio	0.36	0.36						0.18	0.18	0.29	0.47			
Clearance Time (s)														
Vehicle Extension (s)														
Lane Grp Cap (vph)	645	1218						571	259	520	1680			
v/s Ratio Prot	0.02	c0.37						c0.22		0.09	c0.51			
v/s Ratio Perm									0.12					
v/c Ratio	0.07	1.04						1.23	0.69	0.30	1.10			
Uniform Delay, d1	27.5	41.8						53.2	49.8	36.0	34.8			
Progression Factor	1.00	1.00						1.00	1.00	1.65	1.39			
Incremental Delay, d2	0.0	36.3						120.0	14.0	0.1	43.9			
Delay (s)	27.5	78.1						173.3	63.9	59.5	92.2			
Level of Service	C	E						F	E	E	F			
Approach Delay (s)		76.4			0.0			138.5			89.6			
Approach LOS		E			A			F			F			
Intersection Summary														
HCM 2000 Control Delay			98.9									HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio			1.27											
Actuated Cycle Length (s)			130.0								34.0		Sum of lost time (s)	
Intersection Capacity Utilization			121.9%										ICU Level of Service	H
Analysis Period (min)			15											
c	Critical Lane Group													



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	3953	2028	343	3761	437	454	430
v/c Ratio	1.22	0.72	1.56	0.95	1.67	1.68	0.27
Control Delay	131.1	1.6	295.1	27.0	358.6	363.7	0.4
Queue Delay	0.6	0.0	0.0	44.4	0.0	0.0	0.0
Total Delay	131.7	1.6	295.1	71.4	358.6	363.7	0.4
Queue Length 50th (ft)	~2083	0	~530	1722	~787	~820	0
Queue Length 95th (ft)	#2102	0	m#432	m1525	#970	#1035	0
Internal Link Dist (ft)	834			1419		192	
Turn Bay Length (ft)			950				
Base Capacity (vph)	3252	2814	220	3966	262	270	1595
Starvation Cap Reductn	0	0	0	604	0	0	0
Spillback Cap Reductn	875	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.66	0.72	1.56	1.12	1.67	1.68	0.27

Intersection Summary

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

13: Capital of Texas Hwy & Mopac SBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑↑	↑	↑↑↑					↑	↑	↑
Traffic Volume (vph)	0	3795	1906	271	3611	0	0	0	0	452	321	331
Future Volume (vph)	0	3795	1906	271	3611	0	0	0	0	452	321	331
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	4.0	7.0	7.0					6.5	6.5	4.0
Lane Util. Factor		0.91	0.88	1.00	0.91					0.95	0.95	1.00
Frbp, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	0.99
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		5136	2814	1787	5136					1715	1773	1595
Flt Permitted		1.00	1.00	0.03	1.00					0.95	0.99	1.00
Satd. Flow (perm)		5136	2814	62	5136					1715	1773	1595
Peak-hour factor, PHF	0.92	0.96	0.94	0.79	0.96	0.92	0.92	0.92	0.92	0.86	0.88	0.77
Adj. Flow (vph)	0	3953	2028	343	3761	0	0	0	0	526	365	430
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	3953	2028	343	3761	0	0	0	0	437	454	430
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	1%	1%	1%	1%	2%	2%	2%	2%	0%	1%	0%
Turn Type		NA	Free	pm+pt	NA					Perm	NA	Free
Protected Phases		2		1	6						8	
Permitted Phases			Free	6						8		Free
Actuated Green, G (s)		114.0	180.0	139.0	139.0					27.5	27.5	180.0
Effective Green, g (s)		114.0	180.0	139.0	139.0					27.5	27.5	180.0
Actuated g/C Ratio		0.63	1.00	0.77	0.77					0.15	0.15	1.00
Clearance Time (s)		7.0		7.0	7.0					6.5	6.5	
Vehicle Extension (s)		4.0		2.0	4.0					2.0	2.0	
Lane Grp Cap (vph)		3252	2814	220	3966					262	270	1595
v/s Ratio Prot		0.77		c0.16	0.73							
v/s Ratio Perm			0.72	c1.04						0.25	0.26	0.27
v/c Ratio		1.22	0.72	1.56	0.95					1.67	1.68	0.27
Uniform Delay, d1		33.0	0.0	71.1	17.4					76.2	76.2	0.0
Progression Factor		1.00	1.00	1.12	1.48					1.00	1.00	1.00
Incremental Delay, d2		100.0	1.6	253.6	0.7					316.8	322.3	0.4
Delay (s)		133.0	1.6	333.2	26.6					393.1	398.6	0.4
Level of Service		F	A	F	C					F	F	A
Approach Delay (s)		88.5			52.2			0.0			267.2	
Approach LOS		F			D			A			F	
Intersection Summary												
HCM 2000 Control Delay			96.1			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.60									
Actuated Cycle Length (s)			180.0			Sum of lost time (s)				20.5		
Intersection Capacity Utilization			147.7%			ICU Level of Service				H		
Analysis Period (min)			15									

c Critical Lane Group






















Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	501	4162	2714	3116	1415	151	557
v/c Ratio	1.45	1.63	1.05	1.95	1.33	0.38	1.46
Control Delay	244.8	303.0	57.4	446.9	208.4	64.6	262.3
Queue Delay	0.0	0.0	23.2	0.0	0.0	0.0	0.0
Total Delay	244.8	303.0	80.7	446.9	208.4	64.6	262.3
Queue Length 50th (ft)	~750	~3710	~1263	~3843	~767	156	~834
Queue Length 95th (ft)	m#516	m#2657	m510	m#1450	#801	226	#938
Internal Link Dist (ft)		1419	756			675	
Turn Bay Length (ft)					300		
Base Capacity (vph)	346	2561	2596	1599	1060	395	381
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	522	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.45	1.63	1.31	1.95	1.33	0.38	1.46

Intersection Summary

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

14: Mopac NBFR & Capital of Texas Hwy
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	441	3912	0	0	2660	2867	1217	133	457	0	0	0
Future Volume (veh/h)	441	3912	0	0	2660	2867	1217	133	457	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1881	0	0	1881	1881	1900	1900	1881			
Adj Flow Rate, veh/h	501	4162	0	0	2714	0	1415	151	0			
Adj No. of Lanes	1	2	0	0	3	1	3	1	1			
Peak Hour Factor	0.88	0.94	0.92	0.92	0.98	0.92	0.86	0.88	0.82			
Percent Heavy Veh, %	2	1	0	0	1	1	0	0	1			
Cap, veh/h	346	2562	0	0	2596	808	1063	396	333			
Arrive On Green	0.23	0.95	0.00	0.00	0.51	0.00	0.21	0.21	0.00			
Sat Flow, veh/h	1774	3668	0	0	5305	1599	5103	1900	1599			
Grp Volume(v), veh/h	501	4162	0	0	2714	0	1415	151	0			
Grp Sat Flow(s),veh/h/ln	1774	1787	0	0	1712	1599	1701	1900	1599			
Q Serve(g_s), s	31.0	129.0	0.0	0.0	91.0	0.0	37.5	12.3	0.0			
Cycle Q Clear(g_c), s	31.0	129.0	0.0	0.0	91.0	0.0	37.5	12.3	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	346	2562	0	0	2596	808	1063	396	333			
V/C Ratio(X)	1.45	1.62	0.00	0.00	1.05	0.00	1.33	0.38	0.00			
Avail Cap(c_a), veh/h	346	2562	0	0	2596	808	1063	396	333			
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	0.00	1.00	1.00	0.00			
Uniform Delay (d), s/veh	67.6	4.2	0.0	0.0	44.5	0.0	71.3	61.3	0.0			
Incr Delay (d2), s/veh	204.0	281.3	0.0	0.0	30.9	0.0	155.5	0.2	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			
%ile BackOfQ(50%),veh/ln	36.7	154.2	0.0	0.0	50.2	0.0	32.9	6.5	0.0			
LnGrp Delay(d),s/veh	271.6	285.5	0.0	0.0	75.4	0.0	226.7	61.5	0.0			
LnGrp LOS	F	F			F		F	E				
Approach Vol, veh/h		4663			2714			1566				
Approach Delay, s/veh		284.0			75.4			210.8				
Approach LOS		F			E			F				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		136.0		44.0	38.0	98.0						
Change Period (Y+Rc), s		7.0		6.5	7.0	7.0						
Max Green Setting (Gmax), s		129.0		37.5	31.0	91.0						
Max Q Clear Time (g_c+I1), s		131.0		39.5	33.0	93.0						
Green Ext Time (p_c), s		0.0		0.0	0.0	0.0						
Intersection Summary												
HCM 2010 Ctrl Delay			207.9									
HCM 2010 LOS			F									



Lane Group	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	387	5659	78	491	7499
v/c Ratio	0.72	1.49	0.07	1.44	1.98
Control Delay	77.2	246.4	4.0	251.2	461.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	77.2	246.4	4.0	251.2	461.0
Queue Length 50th (ft)	247	~3369	14	~787	~5043
Queue Length 95th (ft)	264	#3308	18	m#535	m#3500
Internal Link Dist (ft)		1281			1273
Turn Bay Length (ft)			430	550	
Base Capacity (vph)	536	3794	1155	340	3794
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.72	1.49	0.07	1.44	1.98

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

15: Capital of Texas Hwy & Barton Creek Plaza Driveway
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↔↔	↕↕↕	↗	↘	↕↕↕
Traffic Volume (vph)	0	298	5263	50	378	7124
Future Volume (vph)	0	298	5263	50	378	7124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	7.0	7.0	6.0	7.0
Lane Util. Factor		0.88	0.91	1.00	1.00	0.91
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		2842	5136	1553	1805	5136
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		2842	5136	1553	1805	5136
Peak-hour factor, PHF	0.92	0.77	0.93	0.64	0.77	0.95
Adj. Flow (vph)	0	387	5659	78	491	7499
RTOR Reduction (vph)	0	0	0	8	0	0
Lane Group Flow (vph)	0	387	5659	70	491	7499
Heavy Vehicles (%)	2%	0%	1%	4%	0%	1%
Turn Type		Over	NA	Prot	Prot	NA
Protected Phases		5	6	6	5	6
Permitted Phases						
Actuated Green, G (s)		34.0	133.0	133.0	34.0	133.0
Effective Green, g (s)		34.0	133.0	133.0	34.0	133.0
Actuated g/C Ratio		0.19	0.74	0.74	0.19	0.74
Clearance Time (s)		6.0	7.0	7.0	6.0	7.0
Vehicle Extension (s)		2.0	4.0	4.0	2.0	4.0
Lane Grp Cap (vph)		536	3794	1147	340	3794
v/s Ratio Prot		0.14	1.10	0.04	c0.27	c1.46
v/s Ratio Perm						
v/c Ratio		0.72	1.49	0.06	1.44	1.98
Uniform Delay, d1		68.6	23.5	6.4	73.0	23.5
Progression Factor		1.00	1.00	1.00	0.93	1.03
Incremental Delay, d2		4.1	222.6	0.1	205.9	439.8
Delay (s)		72.6	246.1	6.5	273.8	464.0
Level of Service		E	F	A	F	F
Approach Delay (s)	72.6		242.9			452.3
Approach LOS	E		F			F
Intersection Summary						
HCM 2000 Control Delay			356.8		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.87			
Actuated Cycle Length (s)			180.0		Sum of lost time (s)	13.0
Intersection Capacity Utilization			143.5%		ICU Level of Service	H
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	193	1794	174	199	701	131
v/c Ratio	0.21	0.90	0.92	0.31	1.63	0.30
Control Delay	15.5	33.8	73.1	16.4	325.9	11.8
Queue Delay	68.7	0.0	0.0	1.5	5.2	0.0
Total Delay	84.2	33.8	73.1	18.0	331.1	11.8
Queue Length 50th (ft)	81	687	80	75	~883	12
Queue Length 95th (ft)	m118	m765	m67	m83	#1107	41
Internal Link Dist (ft)		522		175	200	
Turn Bay Length (ft)			70			90
Base Capacity (vph)	925	1986	190	642	431	441
Starvation Cap Reductn	0	0	0	286	0	0
Spillback Cap Reductn	762	0	0	0	163	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.18	0.90	0.92	0.56	2.62	0.30

Intersection Summary

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

16: US 290 WBFR & Victory Drive
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations				↙	↕		↘	↕			↕	↘	
Traffic Volume (vph)	0	0	0	187	1513	173	99	157	0	0	624	98	
Future Volume (vph)	0	0	0	187	1513	173	99	157	0	0	624	98	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				5.5	5.5		5.5	4.5			4.5	4.5	
Lane Util. Factor				1.00	0.95		1.00	1.00			1.00	1.00	
Frbp, ped/bikes				1.00	1.00		1.00	1.00			1.00	0.98	
Flpb, ped/bikes				1.00	1.00		1.00	1.00			1.00	1.00	
Frt				1.00	0.98		1.00	1.00			1.00	0.85	
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00	
Satd. Flow (prot)				1612	3449		1805	1827			1792	1476	
Flt Permitted				0.95	1.00		0.14	1.00			1.00	1.00	
Satd. Flow (perm)				1612	3449		271	1827			1792	1476	
Peak-hour factor, PHF	0.92	0.92	0.92	0.97	0.95	0.86	0.57	0.79	0.92	0.92	0.89	0.75	
Adj. Flow (vph)	0	0	0	193	1593	201	174	199	0	0	701	131	
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	0	0	0	86	
Lane Group Flow (vph)	0	0	0	193	1787	0	174	199	0	0	701	45	
Confl. Peds. (#/hr)						1	6					6	
Confl. Bikes (#/hr)												3	
Heavy Vehicles (%)	2%	2%	2%	12%	2%	8%	0%	4%	2%	2%	6%	7%	
Turn Type				Split	NA		pm+pt	NA			NA	Perm	
Protected Phases				7 8	7 8		2	1 2 6			1 6		
Permitted Phases							1 2 6					1 6	
Actuated Green, G (s)				77.0	77.0		42.0	47.5			32.5	32.5	
Effective Green, g (s)				77.0	77.0		37.5	42.0			32.5	32.5	
Actuated g/C Ratio				0.57	0.57		0.28	0.31			0.24	0.24	
Clearance Time (s)							5.5						
Vehicle Extension (s)							1.5						
Lane Grp Cap (vph)				919	1967		183	568			431	355	
v/s Ratio Prot				0.12	c0.52		c0.07	0.11			c0.39		
v/s Ratio Perm							0.20					0.03	
v/c Ratio				0.21	0.91		0.95	0.35			1.63	0.13	
Uniform Delay, d1				14.2	25.9		43.0	36.0			51.2	40.1	
Progression Factor				1.06	1.03		0.90	0.48			1.00	1.00	
Incremental Delay, d2				0.0	6.4		45.6	0.1			292.4	0.1	
Delay (s)				15.1	33.1		84.1	17.3			343.6	40.2	
Level of Service				B	C		F	B			F	D	
Approach Delay (s)		0.0			31.4			48.5			295.8		
Approach LOS		A			C			D			F		
Intersection Summary													
HCM 2000 Control Delay			102.3		HCM 2000 Level of Service						F		
HCM 2000 Volume to Capacity ratio			1.21										
Actuated Cycle Length (s)			135.0		Sum of lost time (s)					26.0			
Intersection Capacity Utilization			150.6%		ICU Level of Service					H			
Analysis Period (min)			15										
c Critical Lane Group													
























Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	2993	213	173	697	208
v/c Ratio	1.47	0.32	0.31	1.29	0.23
Control Delay	246.4	33.6	20.4	158.7	3.5
Queue Delay	0.0	0.0	0.0	0.4	3.4
Total Delay	246.4	33.6	20.4	159.0	6.9
Queue Length 50th (ft)	~1344	136	64	~333	19
Queue Length 95th (ft)	m#1195	178	108	m250	m15
Internal Link Dist (ft)	53	253			175
Turn Bay Length (ft)			125	70	
Base Capacity (vph)	2032	668	561	540	918
Starvation Cap Reductn	0	0	0	24	611
Spillback Cap Reductn	0	17	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.47	0.33	0.31	1.35	0.68

Intersection Summary

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

17: Pack Saddle Pass & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  							 	 		
Traffic Volume (vph)	85	2584	110	0	0	0	0	170	142	606	185	0
Future Volume (vph)	85	2584	110	0	0	0	0	170	142	606	185	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0						4.5	4.5	5.5	4.5	
Lane Util. Factor		0.91						1.00	1.00	1.00	1.00	
Frbp, ped/bikes		1.00						1.00	1.00	1.00	1.00	
Flpb, ped/bikes		1.00						1.00	1.00	1.00	1.00	
Frt		0.99						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		5072						1900	1468	1719	1759	
Flt Permitted		1.00						1.00	1.00	0.51	1.00	
Satd. Flow (perm)		5072						1900	1468	921	1759	
Peak-hour factor, PHF	0.81	0.94	0.79	0.92	0.92	0.92	0.92	0.80	0.82	0.87	0.89	0.92
Adj. Flow (vph)	105	2749	139	0	0	0	0	212	173	697	208	0
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	48	0	0	0
Lane Group Flow (vph)	0	2989	0	0	0	0	0	213	125	697	208	0
Confl. Bikes (#/hr)			3						1			
Heavy Vehicles (%)	10%	1%	0%	2%	2%	2%	2%	0%	10%	5%	8%	2%
Turn Type	Split	NA						NA	Prot	D.P+P	NA	
Protected Phases	8	8						1 2 6	1 2 6	7	1 2 6 7	
Permitted Phases										1 2 6		
Actuated Green, G (s)		54.0						47.5	47.5	65.0	69.5	
Effective Green, g (s)		54.0						42.0	42.0	60.5	64.0	
Actuated g/C Ratio		0.40						0.31	0.31	0.45	0.47	
Clearance Time (s)		6.0								5.5		
Vehicle Extension (s)		1.5								1.5		
Lane Grp Cap (vph)		2028						591	456	516	833	
v/s Ratio Prot		c0.59						0.11	0.09	c0.18	0.12	
v/s Ratio Perm										c0.43		
v/c Ratio		1.47						0.36	0.28	1.35	0.25	
Uniform Delay, d1		40.5						36.1	35.0	38.7	21.2	
Progression Factor		1.05						1.00	1.00	0.73	0.19	
Incremental Delay, d2		214.4						0.1	0.1	159.0	0.0	
Delay (s)		256.8						36.2	35.2	187.1	4.1	
Level of Service		F						D	D	F	A	
Approach Delay (s)		256.8		0.0				35.7			145.1	
Approach LOS		F		A				D			F	
Intersection Summary												
HCM 2000 Control Delay			213.3									F
HCM 2000 Volume to Capacity ratio			1.48									
Actuated Cycle Length (s)			135.0							26.0		
Intersection Capacity Utilization			150.6%									H
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	769	1574	788	520	934	1818
v/c Ratio	1.78	1.75	1.42	0.82	0.40	1.34
Control Delay	390.6	375.1	230.7	17.8	6.0	199.4
Queue Delay	0.6	0.3	0.0	53.5	51.1	0.0
Total Delay	391.2	375.4	230.7	71.4	57.1	199.4
Queue Length 50th (ft)	~1230	~1253	~912	96	71	~844
Queue Length 95th (ft)	#1507	#1399	#1169	m68	m49	#940
Internal Link Dist (ft)		53			174	314
Turn Bay Length (ft)						
Base Capacity (vph)	433	899	555	637	2358	1357
Starvation Cap Reductn	0	0	0	251	1523	0
Spillback Cap Reductn	25	53	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.88	1.86	1.42	1.35	1.12	1.34

Intersection Summary

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

18: US 290 WBFR & Menchaca Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations				↙	↕	↗	↙	↕			↕	↕	
Traffic Volume (vph)	0	0	0	1166	1037	764	442	850	0	0	1462	229	
Future Volume (vph)	0	0	0	1166	1037	764	442	850	0	0	1462	229	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				6.0	6.0	6.0	6.0	5.0			5.0		
Lane Util. Factor				0.91	0.91	1.00	1.00	0.95			0.91		
Frt				1.00	1.00	0.85	1.00	1.00			0.98		
Flt Protected				0.95	0.99	1.00	0.95	1.00			1.00		
Satd. Flow (prot)				1626	3373	1615	1805	3574			5025		
Flt Permitted				0.95	0.99	1.00	0.95	1.00			1.00		
Satd. Flow (perm)				1626	3373	1615	1805	3574			5025		
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.97	0.85	0.91	0.92	0.92	0.95	0.82	
Adj. Flow (vph)	0	0	0	1240	1103	788	520	934	0	0	1539	279	
RTOR Reduction (vph)	0	0	0	0	0	124	0	0	0	0	18	0	
Lane Group Flow (vph)	0	0	0	769	1574	664	520	934	0	0	1800	0	
Heavy Vehicles (%)	2%	2%	2%	1%	1%	0%	0%	1%	2%	2%	1%	0%	
Turn Type				Perm	NA	Perm	Prot	NA			NA		
Protected Phases					8 9		4 13	1 4 13				1	
Permitted Phases				8 9		8 9							
Actuated Green, G (s)				41.0	41.0	41.0	53.0	98.0			40.0		
Effective Green, g (s)				41.0	41.0	41.0	48.0	98.0			40.0		
Actuated g/C Ratio				0.27	0.27	0.27	0.32	0.65			0.27		
Clearance Time (s)											5.0		
Vehicle Extension (s)											1.0		
Lane Grp Cap (vph)				444	921	441	577	2335			1340		
v/s Ratio Prot							c0.29	0.26			c0.36		
v/s Ratio Perm				c0.47	0.47	0.41							
v/c Ratio				1.73	1.71	1.51	0.90	0.40			1.34		
Uniform Delay, d1				54.5	54.5	54.5	48.7	12.2			55.0		
Progression Factor				1.00	1.00	1.00	0.37	0.51			1.00		
Incremental Delay, d2				338.7	323.7	239.6	2.0	0.0			159.7		
Delay (s)				393.2	378.2	294.1	19.8	6.2			214.7		
Level of Service				F	F	F	B	A			F		
Approach Delay (s)		0.0			360.7			11.1			214.7		
Approach LOS		A			F			B			F		
Intersection Summary													
HCM 2000 Control Delay			239.9		HCM 2000 Level of Service						F		
HCM 2000 Volume to Capacity ratio			1.37										
Actuated Cycle Length (s)			150.0		Sum of lost time (s)					27.0			
Intersection Capacity Utilization			158.8%		ICU Level of Service					H			
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	334	774	643	1699	802	2128
v/c Ratio	1.21	1.41	2.03	1.55	0.86	0.77
Control Delay	175.0	240.4	499.9	286.6	9.8	4.3
Queue Delay	0.0	0.0	0.0	0.2	50.4	48.0
Total Delay	175.0	240.4	499.9	286.8	60.2	52.2
Queue Length 50th (ft)	~397	~533	~914	~833	161	99
Queue Length 95th (ft)	#559	#666	#1159	#930	m58	m9
Internal Link Dist (ft)		62		300		174
Turn Bay Length (ft)						
Base Capacity (vph)	276	548	317	1099	932	2763
Starvation Cap Reductn	0	0	0	0	365	1245
Spillback Cap Reductn	0	0	0	36	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.21	1.41	2.03	1.60	1.41	1.40

Intersection Summary

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

19: Menchaca Road & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↘	↑↑	↗					↑↑↑		↘	↑↑		
Traffic Volume (vph)	287	743	592	0	0	0	0	1003	534	682	2000	0	
Future Volume (vph)	287	743	592	0	0	0	0	1003	534	682	2000	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.0	6.0	6.0					5.0		5.0	5.0		
Lane Util. Factor	1.00	0.95	1.00					0.91		1.00	0.95		
Frbp, ped/bikes	1.00	1.00	0.99					1.00		1.00	1.00		
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00		
Frt	1.00	1.00	0.85					0.95		1.00	1.00		
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00		
Satd. Flow (prot)	1805	3574	1593					4831		1770	3574		
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00		
Satd. Flow (perm)	1805	3574	1593					4831		1770	3574		
Peak-hour factor, PHF	0.86	0.96	0.92	0.92	0.92	0.92	0.92	0.93	0.86	0.85	0.94	0.92	
Adj. Flow (vph)	334	774	643	0	0	0	0	1078	621	802	2128	0	
RTOR Reduction (vph)	0	0	74	0	0	0	0	69	0	0	0	0	
Lane Group Flow (vph)	334	774	569	0	0	0	0	1630	0	802	2128	0	
Confl. Bikes (#/hr)			1						1				
Heavy Vehicles (%)	0%	1%	0%	2%	2%	2%	2%	1%	1%	2%	1%	2%	
Turn Type	Perm	NA	Perm					NA		Prot	NA		
Protected Phases		4 8						13		19	19 13		
Permitted Phases	4 8		4 8										
Actuated Green, G (s)	23.0	23.0	23.0					32.0		79.0	116.0		
Effective Green, g (s)	23.0	23.0	23.0					32.0		79.0	116.0		
Actuated g/C Ratio	0.15	0.15	0.15					0.21		0.53	0.77		
Clearance Time (s)								5.0					
Vehicle Extension (s)								1.0					
Lane Grp Cap (vph)	276	548	244					1030		932	2763		
v/s Ratio Prot		0.22						c0.34		c0.45	0.60		
v/s Ratio Perm	0.19		c0.36										
v/c Ratio	1.21	1.41	2.33					1.58		0.86	0.77		
Uniform Delay, d1	63.5	63.5	63.5					59.0		30.7	9.5		
Progression Factor	1.00	1.00	1.00					1.00		0.26	0.41		
Incremental Delay, d2	123.4	196.2	612.7					266.7		0.8	0.1		
Delay (s)	186.9	259.7	676.2					325.7		8.8	4.1		
Level of Service	F	F	F					F		A	A		
Approach Delay (s)		398.7			0.0			325.7			5.4		
Approach LOS		F			A			F			A		
Intersection Summary													
HCM 2000 Control Delay			198.6									HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.40										
Actuated Cycle Length (s)			150.0									Sum of lost time (s)	27.0
Intersection Capacity Utilization			158.8%									ICU Level of Service	H
Analysis Period (min)			15										

c Critical Lane Group

Intersection												
Int Delay, s/veh	128.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	73	139	241	22	135	7	222	21	56	5	32	43
Future Vol, veh/h	73	139	241	22	135	7	222	21	56	5	32	43
Conflicting Peds, #/hr	14	0	9	9	0	14	6	0	11	11	0	6
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	87	87	50	76	50	80	75	60	60	56	75
Heavy Vehicles, %	0	0	7	0	0	0	5	0	0	0	0	0
Mvmt Flow	107	160	277	44	178	14	278	28	93	8	57	57

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	206	0	0	446	0	0	858	816	319	871	947	205
Stage 1	-	-	-	-	-	-	522	522	-	287	287	-
Stage 2	-	-	-	-	-	-	336	294	-	584	660	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.15	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.545	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1377	-	-	1125	-	-	~ 274	314	726	274	263	841
Stage 1	-	-	-	-	-	-	532	534	-	725	678	-
Stage 2	-	-	-	-	-	-	672	673	-	501	463	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1359	-	-	1115	-	-	~ 179	262	712	190	219	825
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 179	262	-	190	219	-
Stage 1	-	-	-	-	-	-	470	472	-	638	640	-
Stage 2	-	-	-	-	-	-	541	635	-	361	409	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.6	1.6	\$ 409.4	22.4
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	223	1359	-	-	1115	-	-	328
HCM Lane V/C Ratio	1.788	0.079	-	-	0.039	-	-	0.374
HCM Control Delay (s)	\$ 409.4	7.9	0	-	8.4	0	-	22.4
HCM Lane LOS	F	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	27.4	0.3	-	-	0.1	-	-	1.7

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



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	563	740	2953	468	466	1378
v/c Ratio	0.64	1.26	1.50	0.50	2.51	0.59
Control Delay	48.3	168.0	248.9	3.9	713.3	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.3	168.0	248.9	3.9	713.3	13.6
Queue Length 50th (ft)	226	~816	~1891	35	~635	324
Queue Length 95th (ft)	290	#1010	m#1635	m8	#722	384
Internal Link Dist (ft)	497		121			322
Turn Bay Length (ft)		125			125	
Base Capacity (vph)	881	586	1966	935	186	2336
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.64	1.26	1.50	0.50	2.51	0.59

Intersection Summary

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

1: S Lamar Blvd & W Oltorf Street
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted AM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖↗	↖	↕↕	↖	↖	↕↕
Traffic Volume (vph)	507	644	2540	374	368	1337
Future Volume (vph)	507	644	2540	374	368	1337
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1583	3539	1525	1770	3505
Flt Permitted	0.95	1.00	1.00	1.00	0.05	1.00
Satd. Flow (perm)	3400	1583	3539	1525	93	3505
Peak-hour factor, PHF	0.90	0.87	0.86	0.80	0.79	0.97
Adj. Flow (vph)	563	740	2953	468	466	1378
RTOR Reduction (vph)	0	1	0	88	0	0
Lane Group Flow (vph)	563	739	2953	380	466	1378
Confl. Peds. (#/hr)		4		2	2	
Confl. Bikes (#/hr)		1		5		
Heavy Vehicles (%)	3%	2%	2%	4%	2%	3%
Turn Type	Prot	pt+ov	NA	Perm	pm+pt	NA
Protected Phases	4	1 4	2		1	6
Permitted Phases		4		2	6	
Actuated Green, G (s)	35.0	50.0	75.0	75.0	90.0	90.0
Effective Green, g (s)	35.0	50.0	75.0	75.0	90.0	90.0
Actuated g/C Ratio	0.26	0.37	0.56	0.56	0.67	0.67
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	1.0		1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	881	586	1966	847	186	2336
v/s Ratio Prot	0.17	c0.47	0.83		c0.19	0.39
v/s Ratio Perm				0.25	c1.48	
v/c Ratio	0.64	1.26	1.50	0.45	2.51	0.59
Uniform Delay, d1	44.4	42.5	30.0	17.8	47.1	12.4
Progression Factor	1.00	1.00	0.66	0.32	1.00	1.00
Incremental Delay, d2	3.5	131.1	226.8	0.5	693.2	1.1
Delay (s)	47.9	173.6	246.5	6.3	740.2	13.5
Level of Service	D	F	F	A	F	B
Approach Delay (s)	119.3		213.6			197.1
Approach LOS	F		F			F

Intersection Summary			
HCM 2000 Control Delay	190.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.22		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	118.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	149	328	157	220	2768	116	57	2217
v/c Ratio	0.77	0.77	0.78	0.75	1.12	0.11	1.08	1.20
Control Delay	71.3	46.7	72.4	38.5	76.6	3.7	176.6	127.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.3	46.7	72.4	38.5	76.6	3.7	176.6	127.8
Queue Length 50th (ft)	113	194	112	137	~1471	13	~54	~1221
Queue Length 95th (ft)	136	194	170	m116	m#1212	m9	#86	#1160
Internal Link Dist (ft)		215	74		201			588
Turn Bay Length (ft)	75			50		125	50	
Base Capacity (vph)	193	548	341	295	2469	1016	53	1849
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.60	0.46	0.75	1.12	0.11	1.08	1.20

Intersection Summary

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

2: S Lamar Blvd & Bluebonnet Lane
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗			↖		↖	↑↑	↗	↖	↑↗	
Traffic Volume (vph)	110	41	221	0	50	70	200	2270	94	35	1811	4
Future Volume (vph)	110	41	221	0	50	70	200	2270	94	35	1811	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	0.98			0.99		1.00	1.00	0.96	1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.88			0.91		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1769	1614			1720		1787	3505	1412	1703	3469	
Flt Permitted	0.28	1.00			1.00		0.05	1.00	1.00	0.06	1.00	
Satd. Flow (perm)	512	1614			1720		98	3505	1412	100	3469	
Peak-hour factor, PHF	0.74	0.71	0.82	0.87	0.86	0.71	0.91	0.82	0.81	0.61	0.82	0.50
Adj. Flow (vph)	149	58	270	0	58	99	220	2768	116	57	2209	8
RTOR Reduction (vph)	0	79	0	0	25	0	0	0	22	0	0	0
Lane Group Flow (vph)	149	249	0	0	132	0	220	2768	94	57	2217	0
Confl. Peds. (#/hr)	1		4	4			1	7		6	6	7
Confl. Bikes (#/hr)							1					1
Heavy Vehicles (%)	2%	0%	2%	3%	0%	0%	1%	3%	10%	6%	4%	0%
Turn Type	pm+pt	NA			NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4						2		2	6		
Actuated Green, G (s)	28.9	28.9			13.9		95.1	95.1	95.1	72.0	72.0	
Effective Green, g (s)	28.9	28.9			13.9		95.1	95.1	95.1	72.0	72.0	
Actuated g/C Ratio	0.21	0.21			0.10		0.70	0.70	0.70	0.53	0.53	
Clearance Time (s)	6.0	6.0			6.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0			2.0		1.0	1.0	1.0	1.0	1.0	
Lane Grp Cap (vph)	193	345			177		295	2469	994	53	1850	
v/s Ratio Prot	0.05	c0.15			0.08		0.10	c0.79			c0.64	
v/s Ratio Perm	c0.11						0.43		0.07	0.57		
v/c Ratio	0.77	0.72			0.75		0.75	1.12	0.09	1.08	1.20	
Uniform Delay, d1	46.9	49.3			58.8		43.6	20.0	6.3	31.5	31.5	
Progression Factor	1.00	1.00			1.00		1.05	0.99	1.16	1.18	1.15	
Incremental Delay, d2	15.9	6.2			13.8		1.6	55.1	0.0	137.7	94.1	
Delay (s)	62.8	55.6			72.6		47.5	74.8	7.3	174.8	130.3	
Level of Service	E	E			E		D	E	A	F	F	
Approach Delay (s)		57.8			72.6			70.3			131.4	
Approach LOS		E			E			E			F	

Intersection Summary		
HCM 2000 Control Delay	92.5	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	1.16	F
Actuated Cycle Length (s)	135.0	Sum of lost time (s)
Intersection Capacity Utilization	109.4%	ICU Level of Service
Analysis Period (min)	15	H
c Critical Lane Group		



Lane Group	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1129	2280	10	612	1789
v/c Ratio	1.39	1.06	0.01	1.19	0.77
Control Delay	219.1	43.9	1.2	121.6	18.3
Queue Delay	0.0	9.3	0.0	0.0	0.4
Total Delay	219.1	53.2	1.2	121.6	18.7
Queue Length 50th (ft)	~747	~1150	0	~656	390
Queue Length 95th (ft)	#898	m456	m0	m#506	m336
Internal Link Dist (ft)		324			498
Turn Bay Length (ft)				100	
Base Capacity (vph)	813	2159	990	516	2314
Starvation Cap Reductn	0	45	0	0	0
Spillback Cap Reductn	0	0	0	0	167
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.39	1.08	0.01	1.19	0.83

Intersection Summary

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

3: S Lamar Blvd & Menchaca Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted AM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↔↔	↕↕	↗	↘	↕↕
Traffic Volume (vph)	0	1073	1710	6	520	1592
Future Volume (vph)	0	1073	1710	6	520	1592
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0
Lane Util. Factor		0.88	0.95	1.00	1.00	0.95
Frbp, ped/bikes		1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		2787	3471	1589	1787	3471
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		2787	3471	1589	1787	3471
Peak-hour factor, PHF	0.92	0.95	0.75	0.60	0.85	0.89
Adj. Flow (vph)	0	1129	2280	10	612	1789
RTOR Reduction (vph)	0	9	0	2	0	0
Lane Group Flow (vph)	0	1120	2280	8	612	1789
Confl. Peds. (#/hr)		1		4	4	
Heavy Vehicles (%)	2%	2%	4%	0%	1%	4%
Turn Type		pt+ov	NA	Perm	Prot	NA
Protected Phases		1 4	2 3		1 4	1 2
Permitted Phases				2 3		
Actuated Green, G (s)		39.0	84.0	84.0	39.0	90.0
Effective Green, g (s)		39.0	84.0	84.0	39.0	90.0
Actuated g/C Ratio		0.29	0.62	0.62	0.29	0.67
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		805	2159	988	516	2314
v/s Ratio Prot		c0.40	c0.66		0.34	0.52
v/s Ratio Perm				0.00		
v/c Ratio		1.39	1.06	0.01	1.19	0.77
Uniform Delay, d1		48.0	25.5	9.7	48.0	15.5
Progression Factor		1.00	0.46	0.18	0.82	1.14
Incremental Delay, d2		184.0	29.9	0.0	85.7	0.2
Delay (s)		232.0	41.5	1.7	124.9	17.8
Level of Service		F	D	A	F	B
Approach Delay (s)	232.0		41.4			45.1
Approach LOS	F		D			D
Intersection Summary						
HCM 2000 Control Delay			79.9		HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			1.29			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	24.0
Intersection Capacity Utilization			102.7%		ICU Level of Service	G
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	233	516	161	223	231	2107	72	66	1784
v/c Ratio	1.19	0.74	2.18	0.34	2.20	0.91	0.07	2.54	0.83
Control Delay	173.4	45.7	597.3	49.1	569.0	23.8	3.1	781.0	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	16.0	0.0	0.0	0.1
Total Delay	173.4	45.7	597.3	49.1	569.0	39.8	3.1	781.0	5.8
Queue Length 50th (ft)	~247	172	~226	89	~327	701	4	~96	391
Queue Length 95th (ft)	#239	222	#257	114	m#290	m575	m2	#115	106
Internal Link Dist (ft)		257		238		436			324
Turn Bay Length (ft)	90		100		125		160	100	
Base Capacity (vph)	195	701	74	654	105	2314	1045	26	2145
Starvation Cap Reductn	0	0	0	0	0	0	0	0	16
Spillback Cap Reductn	0	0	0	0	0	260	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.19	0.74	2.18	0.34	2.20	1.03	0.07	2.54	0.84

Intersection Summary

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

4: S Lamar Blvd & Barton Skyway/Lightsey Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	172	278	106	172	8	196	1559	67	37	1461	87
Future Volume (vph)	147	172	278	106	172	8	196	1559	67	37	1461	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.91		1.00	0.99		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1748	3226		1801	3523		1787	3471	1531	1805	3441	
Flt Permitted	0.57	1.00		0.21	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1052	3226		401	3523		1787	3471	1531	1805	3441	
Peak-hour factor, PHF	0.63	0.86	0.88	0.66	0.80	0.95	0.85	0.74	0.93	0.56	0.88	0.70
Adj. Flow (vph)	233	200	316	161	215	8	231	2107	72	66	1660	124
RTOR Reduction (vph)	0	104	0	0	2	0	0	0	24	0	4	0
Lane Group Flow (vph)	233	412	0	161	221	0	231	2107	48	66	1780	0
Confl. Peds. (#/hr)	2		4	4		2	2		4	4		2
Confl. Bikes (#/hr)			1						1			2
Heavy Vehicles (%)	3%	1%	0%	0%	1%	25%	1%	4%	4%	0%	4%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		8			8		5	5 6		7	6 7	
Permitted Phases	8			8					5 6			
Actuated Green, G (s)	25.0	25.0		25.0	25.0		8.0	90.0	90.0	2.0	84.0	
Effective Green, g (s)	25.0	25.0		25.0	25.0		8.0	90.0	90.0	2.0	84.0	
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.06	0.67	0.67	0.01	0.62	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0			6.0		
Vehicle Extension (s)	2.0	2.0		2.0	2.0		1.0			1.0		
Lane Grp Cap (vph)	194	597		74	652		105	2314	1020	26	2141	
v/s Ratio Prot		0.13			0.06		c0.13	c0.61		c0.04	0.52	
v/s Ratio Perm	0.22			c0.40					0.03			
v/c Ratio	1.20	0.69		2.18	0.34		2.20	0.91	0.05	2.54	0.83	
Uniform Delay, d1	55.0	51.4		55.0	47.8		63.5	19.1	7.7	66.5	20.0	
Progression Factor	1.00	1.00		1.00	1.00		0.86	1.17	1.84	0.69	0.15	
Incremental Delay, d2	129.3	6.4		570.8	1.4		542.8	0.7	0.0	759.4	1.8	
Delay (s)	184.3	57.8		625.8	49.2		597.7	23.1	14.3	805.2	4.9	
Level of Service	F	E		F	D		F	C	B	F	A	
Approach Delay (s)		97.1			291.0			77.9			33.4	
Approach LOS		F			F			E			C	
Intersection Summary												
HCM 2000 Control Delay			80.5				HCM 2000 Level of Service			F		
HCM 2000 Volume to Capacity ratio			1.33									
Actuated Cycle Length (s)			135.0				Sum of lost time (s)			24.0		
Intersection Capacity Utilization			106.5%				ICU Level of Service			G		
Analysis Period (min)			15									
c Critical Lane Group												






















Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	131	238	313	33	2796	296	1780
v/c Ratio	1.19	0.98	0.98	0.29	1.12	5.58	0.71
Control Delay	186.3	104.7	95.8	14.8	79.1	2088.5	14.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	186.3	104.7	95.8	14.8	79.1	2088.5	14.1
Queue Length 50th (ft)	~127	209	268	9	~1479	~482	521
Queue Length 95th (ft)	#145	207	231	20	757	m#530	m613
Internal Link Dist (ft)	270		212		208		469
Turn Bay Length (ft)		120		95		125	
Base Capacity (vph)	110	244	321	112	2505	53	2508
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.19	0.98	0.98	0.29	1.12	5.58	0.71

Intersection Summary

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

5: S Lamar Blvd & Private Driveway/Panther Trail
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	10	27	152	4	236	23	1765	195	225	1625	25
Future Volume (veh/h)	41	10	27	152	4	236	23	1765	195	225	1625	25
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1852	1900	1827	1811	1900	1900	1865	1900	1810	1843	1900
Adj Flow Rate, veh/h	73	16	42	238	7	306	33	2521	275	296	1747	33
Adj No. of Lanes	0	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.56	0.62	0.65	0.64	0.60	0.77	0.69	0.70	0.71	0.76	0.93	0.75
Percent Heavy Veh, %	0	0	8	4	0	5	0	2	1	5	3	8
Cap, veh/h	44	15	8	265	7	311	172	2319	248	53	2525	48
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.72	0.72	0.72	0.72	0.72	0.72
Sat Flow, veh/h	13	70	39	1314	34	1498	271	3228	346	94	3514	66
Grp Volume(v), veh/h	131	0	0	238	0	313	33	1362	1434	296	868	912
Grp Sat Flow(s),veh/h/ln	122	0	0	1314	0	1532	271	1771	1802	94	1751	1829
Q Serve(g_s), s	0.5	0.0	0.0	0.0	0.0	27.5	10.5	97.0	97.0	0.0	37.4	37.8
Cycle Q Clear(g_c), s	28.0	0.0	0.0	28.0	0.0	27.5	48.3	97.0	97.0	97.0	37.4	37.8
Prop In Lane	0.56		0.32	1.00		0.98	1.00		0.19	1.00		0.04
Lane Grp Cap(c), veh/h	67	0	0	265	0	318	172	1273	1295	53	1258	1314
V/C Ratio(X)	1.96	0.00	0.00	0.90	0.00	0.99	0.19	1.07	1.11	5.55	0.69	0.69
Avail Cap(c_a), veh/h	67	0	0	265	0	318	172	1273	1295	53	1258	1314
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.1	0.0	0.0	55.1	0.0	53.3	24.2	19.0	19.0	67.5	10.6	10.7
Incr Delay (d2), s/veh	480.3	0.0	0.0	34.4	0.0	46.9	2.5	46.3	59.8	2087.9	3.1	3.0
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	11.4	0.0	0.0	11.4	0.0	15.8	0.9	63.0	69.0	32.9	18.9	19.9
LnGrp Delay(d),s/veh	539.4	0.0	0.0	89.4	0.0	100.2	26.7	65.3	78.8	2155.4	13.7	13.7
LnGrp LOS	F			F		F	C	F	F	F	B	B
Approach Vol, veh/h		131			551			2829			2076	
Approach Delay, s/veh		539.4			95.5			71.7			319.1	
Approach LOS		F			F			E			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		102.0		33.0		102.0		33.0				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		97.0		28.0		97.0		28.0				
Max Q Clear Time (g_c+I1), s		99.0		30.0		99.0		30.0				
Green Ext Time (p_c), s		0.0		0.0		0.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	176.9											
HCM 2010 LOS	F											

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Driveway B/Private Driveway
 Queues Phase 3-2036 Site+Forecasted AM



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL2	SBT	NWL	NWR
Lane Group Flow (vph)	464	300	134	169	1497	160	1653	556	1832
v/c Ratio	1.89	0.67	0.78	0.50	1.24	1.10	0.57	2.74	1.71
Control Delay	445.0	19.2	70.1	21.3	152.8	156.5	24.8	817.8	350.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	445.0	19.2	70.1	21.3	152.8	156.5	24.8	817.8	350.9
Queue Length 50th (ft)	~597	39	91	34	~822	~152	277	~796	~1231
Queue Length 95th (ft)	#372	22	110	39	464	#187	314	#794	#1027
Internal Link Dist (ft)		165		155	240		328	179	
Turn Bay Length (ft)						160			
Base Capacity (vph)	245	445	172	341	1207	146	2892	203	1070
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.89	0.67	0.78	0.50	1.24	1.10	0.57	2.74	1.71

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Driveway B/Private Driveway
 HCM Signalized Intersection Capacity Analysis

Phase 3-2036 Site+Forecasted AM



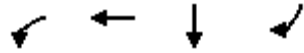
Movement	EBL	EBT	EBR2	WBL	WBT	WBR	NBT	SBL2	SBT	SBR	NWL	NWR
Lane Configurations	↖	↗		↖	↗		↑↑	↖	↑↑↑		↖	↗
Traffic Volume (vph)	246	11	217	91	22	78	898	107	1242	169	406	1263
Future Volume (vph)	246	11	217	91	22	78	898	107	1242	169	406	1263
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		5.5	7.0	5.5		7.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		0.95	1.00	0.86		1.00	0.88
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.86		1.00	0.88		1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1804	1632		1770	1655		3610	1736	6057		1703	2790
Flt Permitted	0.47	1.00		0.22	1.00		1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	898	1632		403	1655		3610	1736	6057		1703	2790
Peak-hour factor, PHF	0.53	0.62	0.77	0.68	0.62	0.58	0.60	0.67	0.90	0.62	0.73	0.74
Adj. Flow (vph)	464	18	282	134	35	134	1497	160	1380	273	556	1707
RTOR Reduction (vph)	0	214	0	0	106	0	0	0	27	0	0	137
Lane Group Flow (vph)	464	86	0	134	63	0	1497	160	1626	0	556	1695
Confl. Peds. (#/hr)	1						1	1		3	3	
Confl. Bikes (#/hr)							1			2		
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	4%	2%	20%	6%	2%
Turn Type	pm+pt	NA		pm+pt	NA		NA	Prot	NA		Prot	Prot
Protected Phases	7	4		3	8		2!	1	6		5	2!
Permitted Phases	4			8								
Actuated Green, G (s)	27.0	18.5		27.0	18.5		43.5	11.0	61.5		15.5	43.5
Effective Green, g (s)	27.0	18.5		27.0	18.5		43.5	11.0	61.5		15.5	43.5
Actuated g/C Ratio	0.21	0.14		0.21	0.14		0.33	0.08	0.47		0.12	0.33
Clearance Time (s)	6.5	6.5		6.5	6.5		5.5	7.0	5.5		7.5	5.5
Vehicle Extension (s)	1.0	3.0		3.0	3.0		3.0	2.0	2.0		3.0	3.0
Lane Grp Cap (vph)	245	232		173	235		1207	146	2865		203	933
v/s Ratio Prot	c0.12	0.05		0.05	0.04		0.41	c0.09	0.27		c0.33	c0.61
v/s Ratio Perm	c0.27			0.11								
v/c Ratio	1.89	0.37		0.77	0.27		1.24	1.10	0.57		2.74	1.82
Uniform Delay, d1	50.5	50.5		45.0	49.7		43.2	59.5	24.7		57.2	43.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	417.3	4.5		19.2	2.8		115.3	102.5	0.8		796.2	371.7
Delay (s)	467.8	55.0		64.2	52.5		158.6	162.0	25.5		853.5	415.0
Level of Service	F	E		E	D		F	F	C		F	F
Approach Delay (s)		305.7			57.7		158.6		37.5		517.1	
Approach LOS		F			E		F		D		F	

Intersection Summary		
HCM 2000 Control Delay	264.8	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	1.90	F
Actuated Cycle Length (s)	130.0	Sum of lost time (s)
Intersection Capacity Utilization	154.3%	33.0
Analysis Period (min)	15	ICU Level of Service
		H

! Phase conflict between lane groups.
 c Critical Lane Group



Movement	NWR2
Lane Configurations	
Traffic Volume (vph)	69
Future Volume (vph)	69
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frbp, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.55
Adj. Flow (vph)	125
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	1
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Lane Group	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	713	2311	977	413
v/c Ratio	0.68	1.07	0.82	0.26
Control Delay	6.2	51.0	59.0	0.4
Queue Delay	0.0	0.0	0.6	0.0
Total Delay	6.2	51.0	59.6	0.4
Queue Length 50th (ft)	553	~1241	241	0
Queue Length 95th (ft)	m0	m194	272	0
Internal Link Dist (ft)		23	453	
Turn Bay Length (ft)				
Base Capacity (vph)	1043	2168	1187	1564
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	43	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.68	1.07	0.85	0.26

Intersection Summary

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

7: S Lamar Blvd & Capity of Texas Hwy
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↕						↑↑↑	↗
Traffic Volume (vph)	0	0	0	665	2076	0	0	0	0	0	850	363
Future Volume (vph)	0	0	0	665	2076	0	0	0	0	0	850	363
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0	6.0						6.0	4.0
Lane Util. Factor				0.91	0.91						0.86	1.00
Frbp, ped/bikes				1.00	1.00						1.00	0.99
Flpb, ped/bikes				1.00	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1595	3383						6166	1564
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1595	3383						6166	1564
Peak-hour factor, PHF	0.92	0.92	0.92	0.84	0.93	0.92	0.92	0.92	0.92	0.92	0.87	0.88
Adj. Flow (vph)	0	0	0	792	2232	0	0	0	0	0	977	412
RTOR Reduction (vph)	0	0	0	38	38	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	675	2273	0	0	0	0	0	977	413
Confl. Peds. (#/hr)												1
Heavy Vehicles (%)	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	6%	2%
Turn Type				custom	NA						NA	Free
Protected Phases				1 2 4 8	1 2 4 8						5 6 7	
Permitted Phases				3	3							Free
Actuated Green, G (s)				86.0	86.0						33.0	135.0
Effective Green, g (s)				86.0	86.0						33.0	135.0
Actuated g/C Ratio				0.64	0.64						0.24	1.00
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)				1086	2305						1507	1564
v/s Ratio Prot				0.39	0.62						0.16	
v/s Ratio Perm				0.03	0.05							0.26
v/c Ratio				0.62	0.99						0.65	0.26
Uniform Delay, d1				14.7	23.9						45.8	0.0
Progression Factor				0.59	1.10						1.00	1.00
Incremental Delay, d2				0.1	3.2						2.2	0.4
Delay (s)				8.8	29.6						48.0	0.4
Level of Service				A	C						D	A
Approach Delay (s)		0.0			24.7			0.0			33.8	
Approach LOS		A			C			A			C	
Intersection Summary												
HCM 2000 Control Delay			27.6									HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio			1.18									
Actuated Cycle Length (s)			135.0							40.0		
Intersection Capacity Utilization			92.0%									ICU Level of Service F
Analysis Period (min)			15									















Lane Group	WBT	NBL	NBT
Lane Group Flow (vph)	2373	431	1357
v/c Ratio	1.70	0.48	0.51
Control Delay	350.7	2.3	3.6
Queue Delay	0.3	0.8	0.3
Total Delay	351.1	3.0	4.0
Queue Length 50th (ft)	~1113	12	62
Queue Length 95th (ft)	m#931	m9	m23
Internal Link Dist (ft)	133		295
Turn Bay Length (ft)			
Base Capacity (vph)	1393	898	2673
Starvation Cap Reductn	0	214	658
Spillback Cap Reductn	113	72	109
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.85	0.63	0.67

Intersection Summary

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

8: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↑	↑↑↑				
Traffic Volume (vph)	0	0	0	0	2254	0	498	933	0	0	0	0
Future Volume (vph)	0	0	0	0	2254	0	498	933	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0		6.0	6.0				
Lane Util. Factor					0.91		0.86	0.86				
Frbp, ped/bikes					1.00		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					1.00		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					5085		1552	4792				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					5085		1552	4792				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.95	0.79	0.89	0.76	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	2373	0	560	1228	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	47	47	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2373	0	384	1310	0	0	0	0
Confl. Peds. (#/hr)						1						
Heavy Vehicles (%)	2%	2%	2%	2%	2%	6%	0%	2%	2%	2%	2%	2%
Turn Type					NA		custom	NA				
Protected Phases					1 7 8		2 3 4 5	2 3 4 5				
Permitted Phases							6	6				
Actuated Green, G (s)					40.0		77.0	77.0				
Effective Green, g (s)					38.0		75.0	75.0				
Actuated g/C Ratio					0.28		0.56	0.56				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)					1431		931	2875				
v/s Ratio Prot					c0.47		0.17	c0.19				
v/s Ratio Perm							0.07	0.08				
v/c Ratio					1.66		0.41	0.46				
Uniform Delay, d1					48.5		17.3	17.9				
Progression Factor					1.04		0.20	0.27				
Incremental Delay, d2					298.2		0.0	0.0				
Delay (s)					348.9		3.5	4.9				
Level of Service					F		A	A				
Approach Delay (s)		0.0			348.9			4.5			0.0	
Approach LOS		A			F			A			A	
Intersection Summary												
HCM 2000 Control Delay			200.9				HCM 2000 Level of Service		F			
HCM 2000 Volume to Capacity ratio			1.05									
Actuated Cycle Length (s)			135.0				Sum of lost time (s)		40.0			
Intersection Capacity Utilization			99.6%				ICU Level of Service		F			
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	EBT	SBL	SBT
Lane Group Flow (vph)	1156	439	1371
v/c Ratio	1.20	0.47	0.45
Control Delay	147.8	4.2	4.2
Queue Delay	0.3	1.3	0.5
Total Delay	148.2	5.5	4.7
Queue Length 50th (ft)	~450	0	57
Queue Length 95th (ft)	#547	m19	m34
Internal Link Dist (ft)	69		291
Turn Bay Length (ft)			
Base Capacity (vph)	960	943	3046
Starvation Cap Reductn	0	300	1081
Spillback Cap Reductn	62	73	119
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.29	0.68	0.70

Intersection Summary

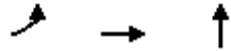
- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

9: S Lamar Blvd & Capity of Texas Hwy
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↑↑↑								↘	↑↑↑		
Traffic Volume (vph)	0	1052	0	0	0	0	0	0	0	449	1126	0	
Future Volume (vph)	0	1052	0	0	0	0	0	0	0	449	1126	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.0								6.0	6.0		
Lane Util. Factor		0.91								0.86	0.86		
Frbp, ped/bikes		1.00								1.00	1.00		
Flpb, ped/bikes		1.00								1.00	1.00		
Frt		1.00								1.00	1.00		
Flt Protected		1.00								0.95	1.00		
Satd. Flow (prot)		4988								1437	4777		
Flt Permitted		1.00								0.95	1.00		
Satd. Flow (perm)		4988								1437	4777		
Peak-hour factor, PHF	0.92	0.91	0.88	0.92	0.92	0.92	0.92	0.92	0.92	0.87	0.87	0.92	
Adj. Flow (vph)	0	1156	0	0	0	0	0	0	0	516	1294	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	38	38	0	
Lane Group Flow (vph)	0	1156	0	0	0	0	0	0	0	401	1333	0	
Confl. Bikes (#/hr)			1										
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	8%	2%	2%	
Turn Type		NA								custom	NA		
Protected Phases		4 5								1 2 6 8	1 2 6 8		
Permitted Phases										7	7		
Actuated Green, G (s)		26.0								86.0	86.0		
Effective Green, g (s)		26.0								86.0	86.0		
Actuated g/C Ratio		0.19								0.64	0.64		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)		960								979	3255		
v/s Ratio Prot		c0.23								0.26	c0.26		
v/s Ratio Perm										0.02	0.02		
v/c Ratio		1.20								0.41	0.41		
Uniform Delay, d1		54.5								12.0	12.0		
Progression Factor		1.00								0.45	0.47		
Incremental Delay, d2		101.9								0.1	0.0		
Delay (s)		156.4								5.5	5.6		
Level of Service		F								A	A		
Approach Delay (s)		156.4			0.0			0.0			5.6		
Approach LOS		F			A			A			A		
Intersection Summary													
HCM 2000 Control Delay			64.4		HCM 2000 Level of Service						E		
HCM 2000 Volume to Capacity ratio			0.73										
Actuated Cycle Length (s)			135.0		Sum of lost time (s)					40.0			
Intersection Capacity Utilization			83.7%		ICU Level of Service					E			
Analysis Period (min)			15										
c Critical Lane Group													





















Lane Group	EBL	EBT	NBT
Lane Group Flow (vph)	581	1208	1720
v/c Ratio	0.59	0.62	1.12
Control Delay	5.4	6.6	110.6
Queue Delay	21.4	36.4	0.1
Total Delay	26.8	43.0	110.6
Queue Length 50th (ft)	384	459	~496
Queue Length 95th (ft)	m14	m424	#574
Internal Link Dist (ft)		38	673
Turn Bay Length (ft)			
Base Capacity (vph)	985	1949	1529
Starvation Cap Reductn	408	818	0
Spillback Cap Reductn	0	0	33
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.01	1.07	1.15

Intersection Summary

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

10: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 						  				
Traffic Volume (vph)	443	1042	0	0	0	0	0	1220	326	0	0	0
Future Volume (vph)	443	1042	0	0	0	0	0	1220	326	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0						6.0				
Lane Util. Factor	0.91	0.91						0.86				
Frt	1.00	1.00						0.97				
Flt Protected	0.95	1.00						1.00				
Satd. Flow (prot)	1610	3259						6292				
Flt Permitted	0.95	1.00						1.00				
Satd. Flow (perm)	1610	3259						6292				
Peak-hour factor, PHF	0.64	0.95	0.92	0.92	0.92	0.92	0.92	0.91	0.86	0.92	0.92	0.92
Adj. Flow (vph)	692	1097	0	0	0	0	0	1341	379	0	0	0
RTOR Reduction (vph)	43	43	0	0	0	0	0	35	0	0	0	0
Lane Group Flow (vph)	538	1165	0	0	0	0	0	1685	0	0	0	0
Heavy Vehicles (%)	2%	6%	2%	2%	2%	2%	2%	0%	2%	2%	2%	2%
Turn Type	custom	NA						NA				
Protected Phases	4 5 6 8	4 5 6 8						1 2 3				
Permitted Phases	7	7										
Actuated Green, G (s)	80.0	80.0						39.0				
Effective Green, g (s)	80.0	80.0						39.0				
Actuated g/C Ratio	0.59	0.59						0.29				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	1025	2076						1817				
v/s Ratio Prot	0.31	c0.33						c0.27				
v/s Ratio Perm	0.03	0.03										
v/c Ratio	0.53	0.56						0.93				
Uniform Delay, d1	16.3	16.8						46.6				
Progression Factor	0.41	0.50						1.00				
Incremental Delay, d2	0.1	0.1						9.8				
Delay (s)	6.8	8.4						56.4				
Level of Service	A	A						E				
Approach Delay (s)		7.9			0.0			56.4			0.0	
Approach LOS		A			A			E			A	
Intersection Summary												
HCM 2000 Control Delay			31.7					HCM 2000 Level of Service		C		
HCM 2000 Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			135.0					Sum of lost time (s)		40.0		
Intersection Capacity Utilization			74.7%					ICU Level of Service		D		
Analysis Period (min)			15									
c Critical Lane Group												



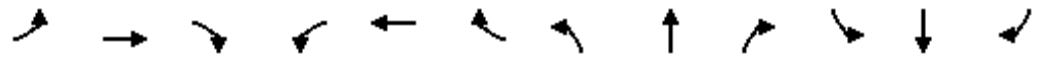
Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	545	1127	193	236	353	33
v/c Ratio	1.76	1.76	0.34	0.81	0.22	0.02
Control Delay	381.1	372.7	1.7	27.3	1.9	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	381.1	372.7	1.7	27.3	1.9	10.3
Queue Length 50th (ft)	~374	~387	0	40	7	1
Queue Length 95th (ft)	#564	#464	0	m49	m7	7
Internal Link Dist (ft)		364			236	206
Turn Bay Length (ft)						
Base Capacity (vph)	309	639	564	293	1667	1445
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.76	1.76	0.34	0.81	0.21	0.02

Intersection Summary

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

11: West Gate Blvd & US 290 WBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations				↙	↕	↗	↙	↕			↕	↗	
Traffic Volume (vph)	0	0	0	701	778	106	435	102	0	0	15	12	
Future Volume (vph)	0	0	0	701	778	106	435	102	0	0	15	12	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				5.5	5.5	5.5	5.5	6.0			6.0		
Lane Util. Factor				0.91	0.91	1.00	0.91	0.91			0.91		
Frbp, ped/bikes				1.00	1.00	0.99	1.00	1.00			1.00		
Flpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00		
Frt				1.00	1.00	0.85	1.00	1.00			0.93		
Flt Protected				0.95	0.99	1.00	0.95	0.97			1.00		
Satd. Flow (prot)				1610	3333	1562	1595	3280			4444		
Flt Permitted				0.95	0.99	1.00	0.73	0.76			1.00		
Satd. Flow (perm)				1610	3333	1562	1231	2581			4444		
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.84	0.55	0.92	0.88	0.92	0.92	0.88	0.75	
Adj. Flow (vph)	0	0	0	746	926	193	473	116	0	0	17	16	
RTOR Reduction (vph)	0	0	0	0	0	157	0	0	0	0	11	0	
Lane Group Flow (vph)	0	0	0	545	1127	36	236	353	0	0	22	0	
Confl. Peds. (#/hr)						1							
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	3%	0%	2%	2%	0%	17%	
Turn Type				Perm	NA	Perm	custom	NA			NA		
Protected Phases					4 5			1 2 6 7			1 2		
Permitted Phases				4 5		4 5	6 7						
Actuated Green, G (s)				12.0	12.0	12.0	15.5	41.5			20.5		
Effective Green, g (s)				12.0	12.0	12.0	15.5	30.5			20.5		
Actuated g/C Ratio				0.18	0.18	0.18	0.24	0.47			0.32		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				297	615	288	293	1211			1401		
v/s Ratio Prot											0.00		
v/s Ratio Perm				c0.34	0.34	0.02	c0.19	c0.14					
v/c Ratio				1.84	1.83	0.12	0.81	0.29			0.02		
Uniform Delay, d1				26.5	26.5	22.1	23.3	10.6			15.3		
Progression Factor				1.00	1.00	1.00	0.60	0.36			1.00		
Incremental Delay, d2				388.6	381.0	0.9	6.3	0.0			0.0		
Delay (s)				415.1	407.5	23.0	20.3	3.8			15.3		
Level of Service				F	F	C	C	A			B		
Approach Delay (s)		0.0			369.9			10.4			15.3		
Approach LOS		A			F			B			B		
Intersection Summary													
HCM 2000 Control Delay			280.1		HCM 2000 Level of Service						F		
HCM 2000 Volume to Capacity ratio			1.30										
Actuated Cycle Length (s)			65.0		Sum of lost time (s)					34.0			
Intersection Capacity Utilization			98.9%		ICU Level of Service					F			
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	75	1037	968	454	75	704
v/c Ratio	0.23	1.55	1.00	0.67	0.14	0.31
Control Delay	24.6	278.8	48.3	8.1	35.4	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.4
Total Delay	24.6	278.8	48.3	8.1	35.4	1.9
Queue Length 50th (ft)	26	~308	146	0	33	6
Queue Length 95th (ft)	46	#417	#282	78	m21	m0
Internal Link Dist (ft)		52	369			236
Turn Bay Length (ft)						
Base Capacity (vph)	333	669	968	680	514	2193
Starvation Cap Reductn	0	0	0	0	0	905
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	1.55	1.00	0.67	0.15	0.55

Intersection Summary

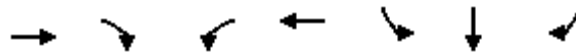
- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

12: West Gate Blvd & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	54	708	195	0	0	0	0	487	827	52	676	0	
Future Volume (vph)	54	708	195	0	0	0	0	487	827	52	676	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.0	6.0						6.0	6.0	5.5	5.5		
Lane Util. Factor	1.00	0.95						0.91	0.91	1.00	0.95		
Frbp, ped/bikes	1.00	1.00						0.99	0.99	1.00	1.00		
Flpb, ped/bikes	1.00	1.00						1.00	1.00	1.00	1.00		
Frt	1.00	0.97						0.93	0.85	1.00	1.00		
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1805	3386						3130	1436	1736	3539		
Flt Permitted	0.95	1.00						1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1805	3386						3130	1436	1736	3539		
Peak-hour factor, PHF	0.72	0.89	0.81	0.92	0.92	0.92	0.92	0.95	0.91	0.69	0.96	0.92	
Adj. Flow (vph)	75	796	241	0	0	0	0	513	909	75	704	0	
RTOR Reduction (vph)	0	49	0	0	0	0	0	244	346	0	0	0	
Lane Group Flow (vph)	75	988	0	0	0	0	0	724	108	75	704	0	
Confl. Peds. (#/hr)			2						1	1			
Heavy Vehicles (%)	0%	2%	4%	2%	2%	2%	2%	3%	1%	4%	2%	2%	
Turn Type	Split	NA						NA	Perm	Prot	NA		
Protected Phases	1 7	1 7						5 6		2 4	2 4 5 6		
Permitted Phases									5 6				
Actuated Green, G (s)	12.0	12.0						15.5	15.5	20.5	41.5		
Effective Green, g (s)	6.5	6.5						15.5	15.5	20.5	35.5		
Actuated g/C Ratio	0.10	0.10						0.24	0.24	0.32	0.55		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)	180	338						746	342	547	1932		
v/s Ratio Prot	0.04	c0.29						c0.23		0.04	c0.20		
v/s Ratio Perm									0.08				
v/c Ratio	0.42	2.92						0.97	0.32	0.14	0.36		
Uniform Delay, d1	27.5	29.2						24.5	20.4	15.9	8.4		
Progression Factor	1.00	1.00						1.00	1.00	2.17	0.28		
Incremental Delay, d2	0.6	873.9						26.4	2.4	0.0	0.0		
Delay (s)	28.0	903.2						50.9	22.8	34.5	2.4		
Level of Service	C	F						D	C	C	A		
Approach Delay (s)		844.2			0.0			41.9			5.5		
Approach LOS		F			A			D			A		
Intersection Summary													
HCM 2000 Control Delay			302.6		HCM 2000 Level of Service						F		
HCM 2000 Volume to Capacity ratio			1.37										
Actuated Cycle Length (s)			65.0		Sum of lost time (s)					34.0			
Intersection Capacity Utilization			98.9%		ICU Level of Service					F			
Analysis Period (min)			15										

c Critical Lane Group



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	2063	819	222	5672	207	212	720
v/c Ratio	0.64	0.29	0.81	1.38	1.06	1.02	0.46
Control Delay	19.9	0.3	48.2	201.9	151.6	143.3	1.0
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	0.0
Total Delay	19.9	0.3	48.2	202.2	151.6	143.3	1.0
Queue Length 50th (ft)	510	0	174	~3317	~278	~278	0
Queue Length 95th (ft)	551	0	m71	m1716	#374	204	0
Internal Link Dist (ft)	834			1419		192	
Turn Bay Length (ft)			950				
Base Capacity (vph)	3242	2777	275	4096	196	207	1553
Starvation Cap Reductn	0	0	0	720	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.29	0.81	1.68	1.06	1.02	0.46

Intersection Summary

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

13: Capital of Texas Hwy & Mopac SBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑↑	↑	↑↑↑					↑	↑	↑
Traffic Volume (vph)	0	1980	688	131	5275	0	0	0	0	231	64	655
Future Volume (vph)	0	1980	688	131	5275	0	0	0	0	231	64	655
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	4.0	7.0	7.0					6.5	6.5	4.0
Lane Util. Factor		0.91	0.88	1.00	0.91					0.95	0.95	1.00
Frbp, ped/bikes		1.00	0.99	1.00	1.00					1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.98	1.00
Satd. Flow (prot)		4988	2777	1752	5085					1649	1739	1553
Flt Permitted		1.00	1.00	0.06	1.00					0.95	0.98	1.00
Satd. Flow (perm)		4988	2777	103	5085					1649	1739	1553
Peak-hour factor, PHF	0.92	0.96	0.84	0.59	0.93	0.92	0.92	0.92	0.92	0.78	0.52	0.91
Adj. Flow (vph)	0	2062	819	222	5672	0	0	0	0	296	123	720
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2063	819	222	5672	0	0	0	0	207	212	720
Confl. Bikes (#/hr)			6									
Heavy Vehicles (%)	2%	4%	1%	3%	2%	2%	2%	2%	2%	4%	0%	4%
Turn Type		NA	Free	pm+pt	NA					Perm	NA	Free
Protected Phases		2		1	6						8	
Permitted Phases			Free	6						8		Free
Actuated Green, G (s)		117.0	180.0	145.0	145.0					21.5	21.5	180.0
Effective Green, g (s)		117.0	180.0	145.0	145.0					21.5	21.5	180.0
Actuated g/C Ratio		0.65	1.00	0.81	0.81					0.12	0.12	1.00
Clearance Time (s)		7.0		7.0	7.0					6.5	6.5	
Vehicle Extension (s)		4.0		2.0	4.0					2.0	2.0	
Lane Grp Cap (vph)		3242	2777	275	4096					196	207	1553
v/s Ratio Prot		0.41		0.09	c1.12							
v/s Ratio Perm			0.29	0.55						c0.13	0.12	0.46
v/c Ratio		0.64	0.29	0.81	1.38					1.06	1.02	0.46
Uniform Delay, d1		18.8	0.0	50.6	17.5					79.2	79.2	0.0
Progression Factor		1.00	1.00	1.06	1.81					1.00	1.00	1.00
Incremental Delay, d2		1.0	0.3	2.4	173.3					79.9	69.0	1.0
Delay (s)		19.8	0.3	56.1	205.0					159.1	148.2	1.0
Level of Service		B	A	E	F					F	F	A
Approach Delay (s)		14.2			199.4			0.0			57.1	
Approach LOS		B			F			A			E	
Intersection Summary												
HCM 2000 Control Delay			129.3			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.40									
Actuated Cycle Length (s)			180.0			Sum of lost time (s)				20.5		
Intersection Capacity Utilization			143.1%			ICU Level of Service				H		
Analysis Period (min)			15									

c Critical Lane Group






















Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	439	1967	3684	3691	2094	249	511
v/c Ratio	1.53	0.79	1.34	2.38	1.99	0.63	1.34
Control Delay	290.6	15.8	196.8	640.6	483.8	73.0	212.9
Queue Delay	0.0	0.0	3.6	0.0	0.0	0.0	0.0
Total Delay	290.6	15.8	200.4	640.6	483.8	73.0	212.9
Queue Length 50th (ft)	~680	434	~2071	~6951	~1360	272	~719
Queue Length 95th (ft)	m#881	m451	m797	m#3085	#1441	327	#711
Internal Link Dist (ft)		1419	756			675	
Turn Bay Length (ft)					300		
Base Capacity (vph)	286	2487	2740	1549	1050	395	382
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	1803	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.53	0.79	3.93	2.38	1.99	0.63	1.34

Intersection Summary

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

14: Mopac NBFR & Capital of Texas Hwy
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	404	1849	0	0	3426	3580	1968	199	383	0	0	0
Future Volume (veh/h)	404	1849	0	0	3426	3580	1968	199	383	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1827	0	0	1863	1845	1881	1900	1863			
Adj Flow Rate, veh/h	439	1967	0	0	3684	0	2094	249	0			
Adj No. of Lanes	1	2	0	0	3	1	3	1	1			
Peak Hour Factor	0.92	0.94	0.92	0.92	0.93	0.97	0.94	0.80	0.75			
Percent Heavy Veh, %	2	4	0	0	2	3	1	0	2			
Cap, veh/h	286	2488	0	0	2740	845	1053	396	330			
Arrive On Green	0.28	1.00	0.00	0.00	0.54	0.00	0.21	0.21	0.00			
Sat Flow, veh/h	1774	3563	0	0	5253	1568	5052	1900	1583			
Grp Volume(v), veh/h	439	1967	0	0	3684	0	2094	249	0			
Grp Sat Flow(s),veh/h/ln	1774	1736	0	0	1695	1568	1684	1900	1583			
Q Serve(g_s), s	25.0	0.0	0.0	0.0	97.0	0.0	37.5	21.5	0.0			
Cycle Q Clear(g_c), s	25.0	0.0	0.0	0.0	97.0	0.0	37.5	21.5	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	286	2488	0	0	2740	845	1053	396	330			
V/C Ratio(X)	1.53	0.79	0.00	0.00	1.34	0.00	1.99	0.63	0.00			
Avail Cap(c_a), veh/h	286	2488	0	0	2740	845	1053	396	330			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.68	0.68	0.00	0.00	1.00	0.00	1.00	1.00	0.00			
Uniform Delay (d), s/veh	63.3	0.0	0.0	0.0	41.5	0.0	71.3	64.9	0.0			
Incr Delay (d2), s/veh	251.6	1.8	0.0	0.0	157.5	0.0	448.6	2.4	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			
%ile BackOfQ(50%),veh/ln	34.2	0.6	0.0	0.0	85.1	0.0	61.2	11.5	0.0			
LnGrp Delay(d),s/veh	314.8	1.8	0.0	0.0	199.0	0.0	519.9	67.3	0.0			
LnGrp LOS	F	A			F		F	E				
Approach Vol, veh/h		2406			3684			2343				
Approach Delay, s/veh		58.9			199.0			471.8				
Approach LOS		E			F			F				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		136.0		44.0	32.0	104.0						
Change Period (Y+Rc), s		7.0		6.5	7.0	7.0						
Max Green Setting (Gmax), s		129.0		37.5	25.0	97.0						
Max Q Clear Time (g_c+I1), s		2.0		39.5	27.0	99.0						
Green Ext Time (p_c), s		6.9		0.0	0.0	0.0						
Intersection Summary												
HCM 2010 Ctrl Delay			234.8									
HCM 2010 LOS			F									



Lane Group	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	210	7008	174	740	5032
v/c Ratio	0.39	1.87	0.15	2.18	1.35
Control Delay	66.5	412.1	7.0	569.6	184.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	66.5	412.1	7.0	569.6	184.3
Queue Length 50th (ft)	125	~4594	54	~1409	~2858
Queue Length 95th (ft)	149	#4463	52	m#1485	m#2733
Internal Link Dist (ft)		1281			1273
Turn Bay Length (ft)			430	550	
Base Capacity (vph)	536	3757	1194	340	3721
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.39	1.87	0.15	2.18	1.35

Intersection Summary

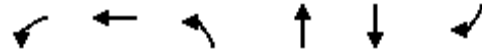
- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

15: Capital of Texas Hwy & Barton Creek Plaza Driveway
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted AM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗↗	↕↕↕	↘	↘	↕↕↕
Traffic Volume (vph)	0	164	6868	108	622	4780
Future Volume (vph)	0	164	6868	108	622	4780
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	7.0	7.0	6.0	7.0
Lane Util. Factor		0.88	0.91	1.00	1.00	0.91
Frbp, ped/bikes		1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		2842	5085	1615	1805	5036
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		2842	5085	1615	1805	5036
Peak-hour factor, PHF	0.92	0.78	0.98	0.62	0.84	0.95
Adj. Flow (vph)	0	210	7008	174	740	5032
RTOR Reduction (vph)	0	0	0	1	0	0
Lane Group Flow (vph)	0	210	7008	173	740	5032
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	2%	0%	2%	0%	0%	3%
Turn Type		Over	NA	Prot	Prot	NA
Protected Phases		5	6	6	5	6
Permitted Phases						
Actuated Green, G (s)		34.0	133.0	133.0	34.0	133.0
Effective Green, g (s)		34.0	133.0	133.0	34.0	133.0
Actuated g/C Ratio		0.19	0.74	0.74	0.19	0.74
Clearance Time (s)		6.0	7.0	7.0	6.0	7.0
Vehicle Extension (s)		2.0	4.0	4.0	2.0	4.0
Lane Grp Cap (vph)		536	3757	1193	340	3721
v/s Ratio Prot		0.07	c1.38	0.11	c0.41	1.00
v/s Ratio Perm						
v/c Ratio		0.39	1.87	0.14	2.18	1.35
Uniform Delay, d1		63.9	23.5	6.9	73.0	23.5
Progression Factor		1.00	1.00	1.00	1.05	0.97
Incremental Delay, d2		0.2	390.4	0.3	538.5	160.3
Delay (s)		64.1	413.9	7.1	615.3	183.0
Level of Service		E	F	A	F	F
Approach Delay (s)	64.1		404.1			238.4
Approach LOS	E		F			F
Intersection Summary						
HCM 2000 Control Delay			326.0		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.93			
Actuated Cycle Length (s)			180.0		Sum of lost time (s)	13.0
Intersection Capacity Utilization			178.0%		ICU Level of Service	H
Analysis Period (min)			15			
c Critical Lane Group						





















Lane Group	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	201	2071	122	408	487	239
v/c Ratio	0.29	1.41	0.27	0.45	1.22	0.52
Control Delay	27.9	219.2	11.0	14.3	163.1	20.4
Queue Delay	0.4	0.0	0.9	4.0	0.7	0.0
Total Delay	28.3	219.2	12.0	18.4	163.8	20.4
Queue Length 50th (ft)	116	~1283	48	216	~547	57
Queue Length 95th (ft)	m168	m#1387	m57	m166	#618	48
Internal Link Dist (ft)		522		175	200	
Turn Bay Length (ft)			70			90
Base Capacity (vph)	692	1473	511	893	399	462
Starvation Cap Reductn	0	0	214	393	0	0
Spillback Cap Reductn	190	0	0	0	26	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.40	1.41	0.41	0.82	1.31	0.52

Intersection Summary

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

16: US 290 WBFR & Victory Drive
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	177	1701	230	115	253	0	0	370	146
Future Volume (vph)	0	0	0	177	1701	230	115	253	0	0	370	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.5	5.5		5.5	4.5			4.5	4.5
Lane Util. Factor				1.00	0.95		1.00	1.00			1.00	1.00
Frbp, ped/bikes				1.00	1.00		1.00	1.00			1.00	0.98
Flpb, ped/bikes				1.00	1.00		1.00	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1597	3378		1769	1827			1759	1488
Flt Permitted				0.95	1.00		0.15	1.00			1.00	1.00
Satd. Flow (perm)				1597	3378		284	1827			1759	1488
Peak-hour factor, PHF	0.92	0.92	0.92	0.88	0.96	0.77	0.94	0.62	0.92	0.92	0.76	0.61
Adj. Flow (vph)	0	0	0	201	1772	299	122	408	0	0	487	239
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	125
Lane Group Flow (vph)	0	0	0	201	2061	0	122	408	0	0	487	114
Confl. Peds. (#/hr)						6	6					6
Confl. Bikes (#/hr)												4
Heavy Vehicles (%)	2%	2%	2%	13%	3%	11%	2%	4%	2%	2%	8%	6%
Turn Type				Split	NA		pm+pt	NA			NA	Perm
Protected Phases				7 8	7 8		2 10 1 2 6 10				1 6	
Permitted Phases							1 2 6 10					1 6
Actuated Green, G (s)				58.0	58.0		61.0	66.5			30.7	30.7
Effective Green, g (s)				58.0	58.0		50.5	55.0			30.7	30.7
Actuated g/C Ratio				0.43	0.43		0.37	0.41			0.23	0.23
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)				686	1451		373	744			400	338
v/s Ratio Prot				0.13	c0.61		0.06	c0.22			c0.28	
v/s Ratio Perm							0.06					0.08
v/c Ratio				0.29	1.42		0.33	0.55			1.22	0.34
Uniform Delay, d1				25.1	38.5		30.4	30.5			52.1	43.6
Progression Factor				1.07	1.05		0.52	0.59			1.00	1.00
Incremental Delay, d2				0.1	193.2		0.1	0.3			118.7	0.2
Delay (s)				26.9	233.7		15.9	18.2			170.8	43.8
Level of Service				C	F		B	B			F	D
Approach Delay (s)		0.0			215.4			17.6			129.0	
Approach LOS		A			F			B			F	
Intersection Summary												
HCM 2000 Control Delay			167.9									F
HCM 2000 Volume to Capacity ratio			1.29									
Actuated Cycle Length (s)			135.0						32.0			
Intersection Capacity Utilization			129.0%									H
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	2075	234	233	446	150
v/c Ratio	1.26	0.31	0.35	0.74	0.16
Control Delay	164.9	28.2	14.7	22.5	3.9
Queue Delay	0.3	0.0	0.0	2.4	2.0
Total Delay	165.2	28.2	14.7	24.8	5.9
Queue Length 50th (ft)	~851	137	65	186	13
Queue Length 95th (ft)	m#859	193	112	m160	m19
Internal Link Dist (ft)	53	253			175
Turn Bay Length (ft)			125	70	
Base Capacity (vph)	1641	751	662	605	926
Starvation Cap Reductn	0	0	0	71	641
Spillback Cap Reductn	146	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.39	0.31	0.35	0.84	0.53

Intersection Summary

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

17: Pack Saddle Pass & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (vph)	151	1611	66	0	0	0	0	201	193	388	135	0		
Future Volume (vph)	151	1611	66	0	0	0	0	201	193	388	135	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)		6.0						4.5	4.5	5.5	4.5			
Lane Util. Factor		0.91						1.00	1.00	1.00	1.00			
Frbp, ped/bikes		1.00						1.00	1.00	1.00	1.00			
Flpb, ped/bikes		1.00						1.00	1.00	1.00	1.00			
Frt		0.99						1.00	0.85	1.00	1.00			
Flt Protected		0.99						1.00	1.00	0.95	1.00			
Satd. Flow (prot)		4915						1845	1455	1703	1583			
Flt Permitted		0.99						1.00	1.00	0.51	1.00			
Satd. Flow (perm)		4915						1845	1455	922	1583			
Peak-hour factor, PHF	0.54	0.94	0.81	0.92	0.92	0.92	0.92	0.86	0.83	0.87	0.90	0.92		
Adj. Flow (vph)	280	1714	81	0	0	0	0	234	233	446	150	0		
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	74	0	0	0		
Lane Group Flow (vph)	0	2072	0	0	0	0	0	234	159	446	150	0		
Confl. Peds. (#/hr)			3						1	1				
Confl. Bikes (#/hr)			1											
Heavy Vehicles (%)	6%	4%	0%	2%	2%	2%	2%	3%	11%	6%	20%	2%		
Turn Type	Split	NA						NA	Prot	D.P+P	NA			
Protected Phases	8 10	8 10						1 2 6	1 2 6	7	1 2 6 7			
Permitted Phases										1 2 6				
Actuated Green, G (s)		45.0						55.5	55.5	74.0	78.5			
Effective Green, g (s)		45.0						50.0	50.0	69.5	73.0			
Actuated g/C Ratio		0.33						0.37	0.37	0.51	0.54			
Clearance Time (s)										5.5				
Vehicle Extension (s)										1.5				
Lane Grp Cap (vph)		1638						683	538	581	855			
v/s Ratio Prot		c0.42						0.13	0.11	c0.11	0.09			
v/s Ratio Perm										c0.29				
v/c Ratio		1.26						0.34	0.30	0.77	0.18			
Uniform Delay, d1		45.0						30.6	30.1	32.1	15.7			
Progression Factor		1.13						1.00	1.00	0.80	0.30			
Incremental Delay, d2		123.4						0.1	0.1	1.9	0.0			
Delay (s)		174.3						30.8	30.2	27.4	4.7			
Level of Service		F						C	C	C	A			
Approach Delay (s)		174.3			0.0			30.5			21.7			
Approach LOS		F			A			C			C			
Intersection Summary														
HCM 2000 Control Delay			123.9									HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio			1.07											
Actuated Cycle Length (s)			135.0							32.0			Sum of lost time (s)	
Intersection Capacity Utilization			129.0%										ICU Level of Service	H
Analysis Period (min)			15											
c Critical Lane Group														






















Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	648	1346	1019	787	1210	1454
v/c Ratio	2.52	2.54	2.70	4.63	0.45	1.62
Control Delay	719.0	721.2	789.3	1645.4	0.4	317.6
Queue Delay	0.3	0.2	0.0	0.0	7.8	1.6
Total Delay	719.3	721.4	789.3	1645.4	8.3	319.2
Queue Length 50th (ft)	~998	~1039	~1362	~1184	10	~641
Queue Length 95th (ft)	#1204	#1185	#1508	m#1020	m8	#693
Internal Link Dist (ft)		53			174	314
Turn Bay Length (ft)						
Base Capacity (vph)	257	530	378	170	2694	898
Starvation Cap Reductn	0	0	0	0	1441	0
Spillback Cap Reductn	6	14	0	0	0	211
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	2.58	2.61	2.70	4.63	0.97	2.12

Intersection Summary

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

18: US 290 WBFR & Menchaca Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted AM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	0	0	663	1158	866	669	1113	0	0	1030	228	
Future Volume (vph)	0	0	0	663	1158	866	669	1113	0	0	1030	228	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				6.0	6.0	6.0	5.0	5.0			5.0		
Lane Util. Factor				0.91	0.91	1.00	1.00	0.95			0.91		
Frbp, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00		
Flpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00		
Frt				1.00	1.00	0.85	1.00	1.00			0.97		
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00		
Satd. Flow (prot)				1595	3285	1599	1769	3574			4929		
Flt Permitted				0.95	1.00	1.00	0.17	1.00			1.00		
Satd. Flow (perm)				1595	3285	1599	317	3574			4929		
Peak-hour factor, PHF	0.92	0.92	0.92	0.87	0.94	0.85	0.85	0.92	0.92	0.92	0.86	0.89	
Adj. Flow (vph)	0	0	0	762	1232	1019	787	1210	0	0	1198	256	
RTOR Reduction (vph)	0	0	0	0	0	120	0	0	0	0	26	0	
Lane Group Flow (vph)	0	0	0	648	1346	899	787	1210	0	0	1428	0	
Confl. Peds. (#/hr)							1					1	
Confl. Bikes (#/hr)												1	
Heavy Vehicles (%)	2%	2%	2%	3%	5%	1%	2%	1%	2%	2%	2%	3%	
Turn Type				Perm	NA	Perm	custom	NA				NA	
Protected Phases					7 8			1 2 6 10				1 6	
Permitted Phases				7 8		7 8	2 10						
Actuated Green, G (s)				21.0	21.0	21.0	70.0	98.0				23.0	
Effective Green, g (s)				21.0	21.0	21.0	70.0	98.0				23.0	
Actuated g/C Ratio				0.16	0.16	0.16	0.54	0.75				0.18	
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)				257	530	258	170	2694				872	
v/s Ratio Prot								0.34				c0.29	
v/s Ratio Perm				0.41	0.41	c0.56	c2.48						
v/c Ratio				2.52	2.54	3.48	4.63	0.45				1.64	
Uniform Delay, d1				54.5	54.5	54.5	30.0	6.0				53.5	
Progression Factor				1.00	1.00	1.00	0.53	0.07				1.00	
Incremental Delay, d2				696.0	698.4	1127.9	1634.4	0.0				292.4	
Delay (s)				750.5	752.9	1182.4	1650.4	0.4				345.9	
Level of Service				F	F	F	F	A				F	
Approach Delay (s)		0.0			897.6			650.7				345.9	
Approach LOS		A			F			F				F	
Intersection Summary													
HCM 2000 Control Delay			697.2		HCM 2000 Level of Service						F		
HCM 2000 Volume to Capacity ratio			4.42										
Actuated Cycle Length (s)			130.0		Sum of lost time (s)					32.0			
Intersection Capacity Utilization			151.9%		ICU Level of Service					H			
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	313	594	272	2498	910	1080
v/c Ratio	0.91	0.88	0.65	1.41dr	1.95	0.43
Control Delay	82.4	66.7	28.8	139.2	449.6	7.8
Queue Delay	48.9	0.0	0.0	0.9	3.5	51.2
Total Delay	131.3	66.7	28.8	140.1	453.1	59.0
Queue Length 50th (ft)	261	258	92	~949	~1164	107
Queue Length 95th (ft)	#426	#349	193	#1040	m#432	m57
Internal Link Dist (ft)		62		300		174
Turn Bay Length (ft)						
Base Capacity (vph)	343	674	418	2041	467	2534
Starvation Cap Reductn	0	0	0	0	139	1714
Spillback Cap Reductn	76	0	0	541	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.17	0.88	0.65	1.67	2.77	1.32

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

19: Menchaca Road & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗					↑↑↑		↘	↑↑	
Traffic Volume (vph)	279	529	264	0	0	0	0	1446	839	737	1058	0
Future Volume (vph)	279	529	264	0	0	0	0	1446	839	737	1058	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0					5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00					0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99					1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.94		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1787	3505	1533					4811		1787	3505	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1787	3505	1533					4811		1787	3505	
Peak-hour factor, PHF	0.89	0.89	0.97	0.92	0.92	0.92	0.92	0.95	0.86	0.81	0.98	0.92
Adj. Flow (vph)	313	594	272	0	0	0	0	1522	976	910	1080	0
RTOR Reduction (vph)	0	0	122	0	0	0	0	7	0	0	0	0
Lane Group Flow (vph)	313	594	150	0	0	0	0	2491	0	910	1080	0
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	3%	4%	2%	2%	2%	2%	1%	1%	1%	3%	2%
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		8 10						1 2		6 7	1 2 6 7	
Permitted Phases	8 10		8 10									
Actuated Green, G (s)	26.0	26.0	26.0					55.0		33.0	93.0	
Effective Green, g (s)	26.0	26.0	26.0					55.0		33.0	93.0	
Actuated g/C Ratio	0.20	0.20	0.20					0.42		0.25	0.72	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	357	701	306					2035		453	2507	
v/s Ratio Prot		0.17						c0.52		c0.51	0.31	
v/s Ratio Perm	c0.18		0.10									
v/c Ratio	0.88	0.85	0.49					1.41dr		2.01	0.43	
Uniform Delay, d1	50.4	50.1	46.1					37.5		48.5	7.6	
Progression Factor	1.00	1.00	1.00					1.00		0.55	1.06	
Incremental Delay, d2	20.2	9.0	0.4					105.5		454.7	0.0	
Delay (s)	70.6	59.1	46.6					143.0		481.5	8.1	
Level of Service	E	E	D					F		F	A	
Approach Delay (s)		59.2			0.0			143.0			224.6	
Approach LOS		E			A			F			F	

Intersection Summary

HCM 2000 Control Delay	154.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.59		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	32.0
Intersection Capacity Utilization	151.9%	ICU Level of Service	H
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

Intersection

Int Delay, s/veh 123.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	199	189	17	178	4	188	12	129	2	25	37
Future Vol, veh/h	17	199	189	17	178	4	188	12	129	2	25	37
Conflicting Peds, #/hr	15	0	4	4	0	15	9	0	15	15	0	9
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	66	74	95	58	60	76	75	60	60	60	75
Heavy Vehicles, %	0	0	6	0	0	0	11	17	2	0	0	0
Mvmt Flow	34	302	255	18	307	7	247	16	215	3	42	49

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	329	0	0	561
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.1	-	-	4.1
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.2
Pot Cap-1 Maneuver	1242	-	-	1020
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1224	-	-	1016
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.5	\$ 382.1	19.8
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	274	1224	-	-	1016	-	-	337
HCM Lane V/C Ratio	1.746	0.028	-	-	0.018	-	-	0.28
HCM Control Delay (s)	\$ 382.1	8	0	-	8.6	0	-	19.8
HCM Lane LOS	F	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	31.3	0.1	-	-	0.1	-	-	1.1

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

21: S Lamar Blvd & Driveway A
 HCM Unsignalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted AM



Movement	EBL	EBR	NBL	NBT	SBT	SBR					
Lane Configurations											
Traffic Volume (veh/h)	0	0	0	2485	1518	197					
Future Volume (Veh/h)	0	0	0	2485	1518	197					
Sign Control	Stop			Free		Free					
Grade	0%			0%		0%					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92					
Hourly flow rate (vph)	0	0	0	2701	1650	214					
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type				None	None						
Median storage (veh)											
Upstream signal (ft)				408	941						
pX, platoon unblocked											
vC, conflicting volume	2432	520	1864								
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	2432	520	1864								
tC, single (s)	6.8	6.9	4.1								
tC, 2 stage (s)											
tF (s)	3.5	3.3	2.2								
p0 queue free %	100	100	100								
cM capacity (veh/h)	26	501	320								
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4		
Volume Total	0	675	675	675	675	471	471	471	450		
Volume Left	0	0	0	0	0	0	0	0	0		
Volume Right	0	0	0	0	0	0	0	0	214		
cSH	1700	1700	1700	1700	1700	1700	1700	1700	1700		
Volume to Capacity	0.00	0.40	0.40	0.40	0.40	0.28	0.28	0.28	0.26		
Queue Length 95th (ft)	0	0	0	0	0	0	0	0	0		
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Lane LOS	A										
Approach Delay (s)	0.0	0.0					0.0				
Approach LOS	A										
Intersection Summary											
Average Delay	0.0										
Intersection Capacity Utilization	39.3%			ICU Level of Service				A			
Analysis Period (min)	15										

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑↑	
Traffic Vol, veh/h	0	115	0	898	1098	39
Future Vol, veh/h	0	115	0	898	1098	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	125	0	976	1193	42

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	618	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-
Pot Cap-1 Maneuver	0	370	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	370	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.6	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	370	-	-
HCM Lane V/C Ratio	-	0.338	-	-
HCM Control Delay (s)	-	19.6	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	1.5	-	-

Intersection						
Int Delay, s/veh	4.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↑↑↑				
Traffic Vol, veh/h	0	100	2225	215	0	0
Future Vol, veh/h	0	100	2225	215	0	0
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	-	-	-
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	109	2418	234	0	0

Major/Minor	Minor1	Major1	
Conflicting Flow All	-	1326	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.14	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.92	-
Pot Cap-1 Maneuver	0	125	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	-	125	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB
HCM Control Delay, s	114.6	0
HCM LOS	F	

Minor Lane/Major Mvmt	NBT	NBRWBLn1
Capacity (veh/h)	-	125
HCM Lane V/C Ratio	-	0.87
HCM Control Delay (s)	-	114.6
HCM Lane LOS	-	F
HCM 95th %tile Q(veh)	-	5.4



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	726	610	2470	971	580	2866
v/c Ratio	0.82	0.79	1.56	1.07	1.50	1.20
Control Delay	55.5	38.0	277.1	53.5	269.6	119.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.5	38.0	277.1	53.5	269.6	119.7
Queue Length 50th (ft)	309	436	~1605	~307	~656	~1604
Queue Length 95th (ft)	362	604	m#1294	m167	#774	#1722
Internal Link Dist (ft)	497		121			322
Turn Bay Length (ft)		125			125	
Base Capacity (vph)	890	777	1588	904	387	2382
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.79	1.56	1.07	1.50	1.20

Intersection Summary

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

1: S Lamar Blvd & W Oltorf Street
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙↘	↙	↕↕	↙	↙	↕↕
Traffic Volume (vph)	624	573	2322	825	476	2665
Future Volume (vph)	624	573	2322	825	476	2665
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1615	3574	1542	1787	3574
Flt Permitted	0.95	1.00	1.00	1.00	0.06	1.00
Satd. Flow (perm)	3433	1615	3574	1542	116	3574
Peak-hour factor, PHF	0.86	0.94	0.94	0.85	0.82	0.93
Adj. Flow (vph)	726	610	2470	971	580	2866
RTOR Reduction (vph)	0	0	0	219	0	0
Lane Group Flow (vph)	726	610	2470	752	580	2866
Confl. Peds. (#/hr)		10		6	6	
Confl. Bikes (#/hr)				5		
Heavy Vehicles (%)	2%	0%	1%	2%	1%	1%
Turn Type	Prot	pt+ov	NA	Perm	pm+pt	NA
Protected Phases	4	1 4	2		1	6
Permitted Phases		4		2	6	
Actuated Green, G (s)	35.0	65.0	60.0	60.0	90.0	90.0
Effective Green, g (s)	35.0	65.0	60.0	60.0	90.0	90.0
Actuated g/C Ratio	0.26	0.48	0.44	0.44	0.67	0.67
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	1.0		1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	890	777	1588	685	386	2382
v/s Ratio Prot	0.21	c0.38	0.69		c0.28	0.80
v/s Ratio Perm				0.49	c0.72	
v/c Ratio	0.82	0.79	1.56	1.10	1.50	1.20
Uniform Delay, d1	47.0	29.2	37.5	37.5	46.4	22.5
Progression Factor	1.00	1.00	0.85	0.72	1.00	1.00
Incremental Delay, d2	8.2	7.8	250.2	46.6	239.3	95.7
Delay (s)	55.1	37.0	282.0	73.7	285.7	118.2
Level of Service	E	D	F	E	F	F
Approach Delay (s)	46.9		223.3			146.4
Approach LOS	D		F			F

Intersection Summary			
HCM 2000 Control Delay	162.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	120.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	179	454	164	298	2848	229	65	3006
v/c Ratio	0.72	0.95	0.63	1.80	1.20	0.22	1.16	1.51
Control Delay	58.3	70.8	56.6	381.6	117.8	8.2	123.0	256.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.3	70.8	56.6	381.6	117.8	8.2	123.0	256.8
Queue Length 50th (ft)	127	326	113	~372	~1627	64	~67	~1932
Queue Length 95th (ft)	163	166	151	m#284	m#1190	m48	m#56	m#1564
Internal Link Dist (ft)		215	74		201			588
Turn Bay Length (ft)	75			50		125	50	
Base Capacity (vph)	250	506	292	166	2368	1036	56	1992
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.90	0.56	1.80	1.20	0.22	1.16	1.51

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

2: S Lamar Blvd & Bluebonnet Lane
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↘			↘		↗	↕	↗	↘	↕	
Traffic Volume (vph)	136	57	286	0	64	72	250	2563	174	47	2883	2
Future Volume (vph)	136	57	286	0	64	72	250	2563	174	47	2883	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	0.97			0.98		1.00	1.00	0.95	1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.89			0.93		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1798	1634			1738		1787	3574	1528	1805	3539	
Flt Permitted	0.34	1.00			1.00		0.05	1.00	1.00	0.05	1.00	
Satd. Flow (perm)	650	1634			1738		93	3574	1528	100	3539	
Peak-hour factor, PHF	0.76	0.47	0.86	0.69	0.75	0.91	0.84	0.90	0.76	0.72	0.96	0.60
Adj. Flow (vph)	179	121	333	0	85	79	298	2848	229	65	3003	3
RTOR Reduction (vph)	0	59	0	0	22	0	0	0	25	0	0	0
Lane Group Flow (vph)	179	395	0	0	142	0	298	2848	204	65	3006	0
Confl. Peds. (#/hr)	12		12	12			12	8	9	9		8
Confl. Bikes (#/hr)			6				5		12			4
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%	1%	1%	0%	0%	2%	0%
Turn Type	pm+pt	NA			NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4						2		2	6		
Actuated Green, G (s)	34.6	34.6			18.6		89.4	89.4	89.4	76.0	76.0	
Effective Green, g (s)	34.6	34.6			18.6		89.4	89.4	89.4	76.0	76.0	
Actuated g/C Ratio	0.26	0.26			0.14		0.66	0.66	0.66	0.56	0.56	
Clearance Time (s)	6.0	6.0			6.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0			2.0		1.0	1.0	1.0	1.0	1.0	
Lane Grp Cap (vph)	251	418			239		166	2366	1011	56	1992	
v/s Ratio Prot	0.05	c0.24			0.08		c0.11	0.80			0.85	
v/s Ratio Perm	0.13						c1.07		0.13	0.65		
v/c Ratio	0.71	0.94			0.59		1.80	1.20	0.20	1.16	1.51	
Uniform Delay, d1	43.1	49.2			54.6		45.9	22.8	8.9	29.5	29.5	
Progression Factor	1.00	1.00			1.00		0.84	1.13	1.26	1.10	1.08	
Incremental Delay, d2	7.7	29.7			2.6		360.0	92.1	0.0	89.3	229.3	
Delay (s)	50.8	78.9			57.3		398.5	117.8	11.3	121.7	261.3	
Level of Service	D	E			E		F	F	B	F	F	
Approach Delay (s)		71.0			57.3			135.4			258.3	
Approach LOS		E			E			F			F	

Intersection Summary			
HCM 2000 Control Delay	180.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.66		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	128.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1024	2589	43	952	2850
v/c Ratio	1.25	1.16	0.04	1.84	1.19
Control Delay	164.0	91.2	1.3	414.1	101.7
Queue Delay	0.0	0.0	0.0	0.0	0.4
Total Delay	164.0	91.3	1.3	414.1	102.0
Queue Length 50th (ft)	~637	~1422	1	~1298	~1572
Queue Length 95th (ft)	#786	m#1435	m1	m#858	m154
Internal Link Dist (ft)		324			498
Turn Bay Length (ft)				100	
Base Capacity (vph)	817	2223	988	516	2385
Starvation Cap Reductn	0	41	0	0	0
Spillback Cap Reductn	0	0	0	0	345
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.25	1.19	0.04	1.84	1.40

Intersection Summary

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

3: S Lamar Blvd & Menchaca Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↔↔	↕↕	↗	↘	↕↕
Traffic Volume (vph)	0	942	2330	32	819	2622
Future Volume (vph)	0	942	2330	32	819	2622
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0
Lane Util. Factor		0.88	0.95	1.00	1.00	0.95
Frpb, ped/bikes		1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		2814	3574	1581	1787	3539
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		2814	3574	1581	1787	3539
Peak-hour factor, PHF	0.92	0.92	0.90	0.75	0.86	0.92
Adj. Flow (vph)	0	1024	2589	43	952	2850
RTOR Reduction (vph)	0	4	0	5	0	0
Lane Group Flow (vph)	0	1020	2589	38	952	2850
Confl. Peds. (#/hr)		7		6	6	
Confl. Bikes (#/hr)		1		9		
Heavy Vehicles (%)	2%	1%	1%	0%	1%	2%
Turn Type		pt+ov	NA	Perm	Prot	NA
Protected Phases		1 4	2 3		1 4	1 2
Permitted Phases				2 3		
Actuated Green, G (s)		39.0	84.0	84.0	39.0	91.0
Effective Green, g (s)		39.0	84.0	84.0	39.0	91.0
Actuated g/C Ratio		0.29	0.62	0.62	0.29	0.67
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		812	2223	983	516	2385
v/s Ratio Prot		0.36	c0.72		c0.53	c0.81
v/s Ratio Perm				0.02		
v/c Ratio		1.26	1.16	0.04	1.84	1.19
Uniform Delay, d1		48.0	25.5	9.9	48.0	22.0
Progression Factor		1.00	0.44	0.17	1.30	0.35
Incremental Delay, d2		125.1	75.7	0.0	380.9	88.2
Delay (s)		173.1	86.8	1.7	443.1	95.8
Level of Service		F	F	A	F	F
Approach Delay (s)	173.1		85.5			182.7
Approach LOS	F		F			F
Intersection Summary						
HCM 2000 Control Delay			147.1		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.54			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	24.0
Intersection Capacity Utilization			136.4%		ICU Level of Service	H
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	158	538	133	235	318	2406	116	136	2798
v/c Ratio	0.85	0.80	2.25	0.37	2.65	1.00	0.11	5.44	1.28
Control Delay	90.9	51.3	640.5	48.0	769.3	19.2	0.4	2016.5	138.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	37.9	0.0	0.0	0.1
Total Delay	90.9	51.3	640.5	48.0	769.3	57.1	0.4	2016.5	138.4
Queue Length 50th (ft)	136	191	~188	91	~472	1132	2	~227	~1635
Queue Length 95th (ft)	#247	210	#325	124	m#390	m534	m2	m#189	m#1210
Internal Link Dist (ft)		257		238		436			324
Turn Bay Length (ft)	90		100		125		160	100	
Base Capacity (vph)	185	675	59	636	120	2409	1088	25	2191
Starvation Cap Reductn	0	0	0	0	0	0	0	0	53
Spillback Cap Reductn	0	0	0	0	0	290	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.80	2.25	0.37	2.65	1.14	0.11	5.44	1.31

Intersection Summary

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

4: S Lamar Blvd & Barton Skyway/Lightsey Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	136	185	238	121	170	21	280	2165	102	102	2421	81
Future Volume (vph)	136	185	238	121	170	21	280	2165	102	102	2421	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.92		1.00	0.98		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1799	3265		1800	3520		1805	3574	1579	1736	3519	
Flt Permitted	0.55	1.00		0.17	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1042	3265		331	3520		1805	3574	1579	1736	3519	
Peak-hour factor, PHF	0.86	0.78	0.79	0.91	0.85	0.60	0.88	0.90	0.88	0.75	0.90	0.75
Adj. Flow (vph)	158	237	301	133	200	35	318	2406	116	136	2690	108
RTOR Reduction (vph)	0	95	0	0	11	0	0	0	24	0	2	0
Lane Group Flow (vph)	158	443	0	133	224	0	318	2406	92	136	2796	0
Confl. Peds. (#/hr)	3		5	5		3	5		18	18		5
Confl. Bikes (#/hr)			2						7			8
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	4%	2%	0%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		8			8		5	5 6		7	6 7	
Permitted Phases	8			8					5 6			
Actuated Green, G (s)	24.0	24.0		24.0	24.0		9.0	91.0	91.0	2.0	84.0	
Effective Green, g (s)	24.0	24.0		24.0	24.0		9.0	91.0	91.0	2.0	84.0	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.07	0.67	0.67	0.01	0.62	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0			6.0		
Vehicle Extension (s)	2.0	2.0		2.0	2.0		1.0			1.0		
Lane Grp Cap (vph)	185	580		58	625		120	2409	1064	25	2189	
v/s Ratio Prot		0.14			0.06		c0.18	0.67		c0.08	c0.79	
v/s Ratio Perm	0.15			c0.40					0.06			
v/c Ratio	0.85	0.76		2.29	0.36		2.65	1.00	0.09	5.44	1.28	
Uniform Delay, d1	53.8	52.8		55.5	48.7		63.0	21.9	7.6	66.5	25.5	
Progression Factor	1.00	1.00		1.00	1.00		1.18	0.59	0.11	0.70	0.20	
Incremental Delay, d2	36.6	9.3		632.5	1.6		744.7	5.2	0.0	2005.9	125.1	
Delay (s)	90.4	62.1		688.0	50.3		818.7	18.2	0.9	2052.8	130.2	
Level of Service	F	E		F	D		F	B	A	F	F	
Approach Delay (s)		68.5			280.8			107.1			219.3	
Approach LOS		E			F			F			F	
Intersection Summary												
HCM 2000 Control Delay			160.7				HCM 2000 Level of Service			F		
HCM 2000 Volume to Capacity ratio			1.71									
Actuated Cycle Length (s)			135.0				Sum of lost time (s)			24.0		
Intersection Capacity Utilization			137.5%				ICU Level of Service			H		
Analysis Period (min)			15									
c Critical Lane Group												






















Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	156	211	318	49	2699	329	2549
v/c Ratio	1.43	0.91	0.83	0.88	1.22	2.30	0.99
Control Delay	275.4	91.3	56.4	117.7	127.7	611.3	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	275.4	91.3	56.4	117.7	127.7	611.3	12.1
Queue Length 50th (ft)	~180	182	201	33	~1527	~435	158
Queue Length 95th (ft)	#182	#250	163	#104	#1651	m#318	m128
Internal Link Dist (ft)	270		212		208		469
Turn Bay Length (ft)		120		95		125	
Base Capacity (vph)	109	233	381	56	2217	143	2562
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.43	0.91	0.83	0.88	1.22	2.30	0.99

Intersection Summary

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

5: S Lamar Blvd & Private Driveway/Panther Trail
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	16	45	160	11	240	39	2360	185	286	2419	20
Future Volume (veh/h)	50	16	45	160	11	240	39	2360	185	286	2419	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1814	1900	1900	1880	1900	1827	1881	1900
Adj Flow Rate, veh/h	71	27	58	211	18	300	49	2484	215	329	2520	29
Adj No. of Lanes	0	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.70	0.60	0.78	0.76	0.60	0.80	0.79	0.95	0.86	0.87	0.96	0.69
Percent Heavy Veh, %	0	0	0	0	0	5	0	1	2	4	1	0
Cap, veh/h	39	20	12	233	18	294	62	2092	178	144	2600	30
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.63	0.63	0.63	0.05	0.72	0.72
Sat Flow, veh/h	0	95	56	1324	85	1419	127	3322	283	1740	3618	42
Grp Volume(v), veh/h	156	0	0	211	0	318	49	1315	1384	329	1242	1307
Grp Sat Flow(s),veh/h/ln	151	0	0	1324	0	1504	127	1786	1819	1740	1787	1873
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	28.0	9.2	85.0	85.0	7.0	86.5	87.8
Cycle Q Clear(g_c), s	28.0	0.0	0.0	28.0	0.0	28.0	85.0	85.0	85.0	7.0	86.5	87.8
Prop In Lane	0.46		0.37	1.00		0.94	1.00		0.16	1.00		0.02
Lane Grp Cap(c), veh/h	70	0	0	233	0	312	62	1124	1145	144	1284	1346
V/C Ratio(X)	2.23	0.00	0.00	0.91	0.00	1.02	0.79	1.17	1.21	2.29	0.97	0.97
Avail Cap(c_a), veh/h	70	0	0	233	0	312	62	1124	1145	144	1284	1346
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.5	0.0	0.0	55.6	0.0	53.5	66.7	25.0	25.0	47.5	17.5	17.7
Incr Delay (d2), s/veh	595.5	0.0	0.0	38.7	0.0	56.1	65.0	86.1	102.1	602.8	18.4	18.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.2	0.0	0.0	10.4	0.0	16.5	2.9	68.4	74.8	29.4	48.6	51.6
LnGrp Delay(d),s/veh	651.0	0.0	0.0	94.3	0.0	109.6	131.7	111.1	127.1	650.3	35.9	36.3
LnGrp LOS	F			F		F	F	F	F	F	D	D
Approach Vol, veh/h		156			529			2748			2878	
Approach Delay, s/veh		651.0			103.5			119.5			106.3	
Approach LOS		F			F			F			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	12.0	90.0		33.0		102.0		33.0				
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s	7.0	85.0		28.0		97.0		28.0				
Max Q Clear Time (g_c+I1), s	9.0	87.0		30.0		89.8		30.0				
Green Ext Time (p_c), s	0.0	0.0		0.0		4.7		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	125.3											
HCM 2010 LOS	F											

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Driveway B/Private Driveway
Queues

Phase 3-2036 Site+Forecasted PM



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL2	SBT	NWL	NWR
Lane Group Flow (vph)	693	613	222	214	842	252	2376	798	1763
v/c Ratio	3.33	1.46	1.28	0.58	0.70	1.66	0.78	3.71	1.62
Control Delay	1078.1	243.4	197.5	22.0	41.5	359.4	30.7	1247.5	311.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1078.1	243.4	197.5	22.0	41.5	359.4	30.7	1247.5	311.0
Queue Length 50th (ft)	~962	~538	~184	41	324	~308	472	~1209	~1152
Queue Length 95th (ft)	#1072	#506	#347	21	400	#453	520	#944	#1218
Internal Link Dist (ft)		165		155	240		328	179	
Turn Bay Length (ft)						160			
Base Capacity (vph)	208	421	174	366	1195	152	3035	215	1088
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	3.33	1.46	1.28	0.58	0.70	1.66	0.78	3.71	1.62

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

6: S Lamar Blvd/US 290 Off-Ramp & S Lamar Blvd & Brodie Oaks/Driveway B/Private Driveway
 HCM Signalized Intersection Capacity Analysis

Phase 3-2036 Site+Forecasted PM



Movement	EBL	EBT	EBR2	WBL	WBT	WBR	NBT	SBL2	SBT	SBR	NWL	NWR
Lane Configurations	↖	↗		↖	↗		↑↑	↖	↑↑↑		↖	↗
Traffic Volume (vph)	568	48	475	211	20	121	775	217	2040	122	495	1327
Future Volume (vph)	568	48	475	211	20	121	775	217	2040	122	495	1327
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		5.5	7.0	5.5		7.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		0.95	1.00	0.86		1.00	0.88
Frbp, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.87		1.00	0.88		1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1804	1623		1787	1613		3574	1805	6393		1805	2842
Flt Permitted	0.34	1.00		0.22	1.00		1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	638	1623		407	1613		3574	1805	6393		1805	2842
Peak-hour factor, PHF	0.82	0.72	0.87	0.95	0.55	0.68	0.92	0.86	0.93	0.67	0.62	0.86
Adj. Flow (vph)	693	67	546	222	36	178	842	252	2194	182	798	1543
RTOR Reduction (vph)	0	190	0	0	137	0	0	0	10	0	0	137
Lane Group Flow (vph)	693	423	0	222	77	0	842	252	2366	0	798	1626
Confl. Peds. (#/hr)	2		1	1		2				10	10	
Confl. Bikes (#/hr)			1			2				1		
Heavy Vehicles (%)	0%	0%	0%	1%	0%	2%	1%	0%	1%	0%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA		NA	Prot	NA		Prot	Prot
Protected Phases	7	4		3	8		2!	1	6		5	2!
Permitted Phases	4			8								
Actuated Green, G (s)	27.0	18.5		27.0	18.5		43.5	11.0	61.5		15.5	43.5
Effective Green, g (s)	27.0	18.5		27.0	18.5		43.5	11.0	61.5		15.5	43.5
Actuated g/C Ratio	0.21	0.14		0.21	0.14		0.33	0.08	0.47		0.12	0.33
Clearance Time (s)	6.5	6.5		6.5	6.5		5.5	7.0	5.5		7.5	5.5
Vehicle Extension (s)	1.0	3.0		3.0	3.0		3.0	2.0	2.0		3.0	3.0
Lane Grp Cap (vph)	208	230		174	229		1195	152	3024		215	950
v/s Ratio Prot	c0.22	0.26		0.08	0.05		0.24	c0.14	0.37		c0.44	c0.57
v/s Ratio Perm	c0.47			0.18								
v/c Ratio	3.33	1.84		1.28	0.34		0.70	1.66	0.78		3.71	1.71
Uniform Delay, d1	49.9	55.8		49.1	50.2		37.7	59.5	28.7		57.2	43.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1061.5	393.3		161.0	3.9		3.5	323.4	2.1		1231.6	324.7
Delay (s)	1111.4	449.0		210.1	54.1		41.2	382.9	30.7		1288.8	367.9
Level of Service	F	F		F	D		D	F	C		F	F
Approach Delay (s)		800.5			133.5		41.2		64.5		654.9	
Approach LOS		F			F		D		E		F	

Intersection Summary

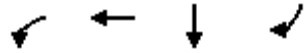
HCM 2000 Control Delay	384.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.47		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	33.0
Intersection Capacity Utilization	179.3%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group



Movement	NWR2
Lane Configurations	
Traffic Volume (vph)	132
Future Volume (vph)	132
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frbp, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.60
Adj. Flow (vph)	220
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	2
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Lane Group	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	839	1755	2198	457
v/c Ratio	1.04	1.09	0.95	0.29
Control Delay	39.9	59.6	51.4	0.5
Queue Delay	0.0	0.0	1.9	0.0
Total Delay	39.9	59.6	53.3	0.5
Queue Length 50th (ft)	~721	~884	540	0
Queue Length 95th (ft)	m361	m383	573	0
Internal Link Dist (ft)		23	453	
Turn Bay Length (ft)				
Base Capacity (vph)	803	1607	2325	1595
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	58	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.04	1.09	0.97	0.29

Intersection Summary

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

7: S Lamar Blvd & Capity of Texas Hwy
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↗						↑↑↑	↗
Traffic Volume (vph)	0	0	0	839	1304	0	0	0	0	0	1934	416
Future Volume (vph)	0	0	0	839	1304	0	0	0	0	0	1934	416
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0	6.0						6.0	4.0
Lane Util. Factor				0.91	0.91						0.86	1.00
Frbp, ped/bikes				1.00	1.00						1.00	0.99
Flpb, ped/bikes				1.00	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	0.99						1.00	1.00
Satd. Flow (prot)				1626	3376						6408	1595
Flt Permitted				0.95	0.99						1.00	1.00
Satd. Flow (perm)				1626	3376						6408	1595
Peak-hour factor, PHF	0.92	0.92	0.92	0.82	0.83	0.92	0.92	0.92	0.92	0.92	0.88	0.91
Adj. Flow (vph)	0	0	0	1023	1571	0	0	0	0	0	2198	457
RTOR Reduction (vph)	0	0	0	56	56	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	783	1699	0	0	0	0	0	2198	457
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	2%	2%	1%	2%	0%	2%	2%	2%	2%	2%	0%
Turn Type				custom	NA						NA	Free
Protected Phases				1 2 4 8	1 2 4 8						5 6 7	
Permitted Phases				3	3							Free
Actuated Green, G (s)				63.0	63.0						56.0	135.0
Effective Green, g (s)				63.0	63.0						56.0	135.0
Actuated g/C Ratio				0.47	0.47						0.41	1.00
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)				831	1725						2658	1595
v/s Ratio Prot				0.43	c0.45						c0.34	
v/s Ratio Perm				0.05	0.05							0.29
v/c Ratio				0.94	0.98						0.83	0.29
Uniform Delay, d1				34.3	35.5						35.2	0.0
Progression Factor				0.50	0.51						1.00	1.00
Incremental Delay, d2				2.6	3.8						3.1	0.5
Delay (s)				19.6	22.0						38.3	0.5
Level of Service				B	C						D	A
Approach Delay (s)		0.0			21.2			0.0			31.8	
Approach LOS		A			C			A			C	
Intersection Summary												
HCM 2000 Control Delay			26.6									C
HCM 2000 Volume to Capacity ratio			1.20									
Actuated Cycle Length (s)			135.0							40.0		
Intersection Capacity Utilization			102.4%									G
Analysis Period (min)			15									
c Critical Lane Group												















Lane Group	WBT	NBL	NBT
Lane Group Flow (vph)	2026	461	1435
v/c Ratio	1.86	0.47	0.48
Control Delay	417.5	7.6	9.2
Queue Delay	0.5	3.1	1.5
Total Delay	418.0	10.7	10.7
Queue Length 50th (ft)	~988	322	355
Queue Length 95th (ft)	#1069	m20	m23
Internal Link Dist (ft)	133		295
Turn Bay Length (ft)			
Base Capacity (vph)	1092	974	3001
Starvation Cap Reductn	0	397	1296
Spillback Cap Reductn	102	139	218
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	2.05	0.80	0.84

Intersection Summary

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

8: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↔	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1803	0	491	1180	0	0	0	0
Future Volume (vph)	0	0	0	0	1803	0	491	1180	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0		6.0	6.0				
Lane Util. Factor					0.91		0.86	0.86				
Frt					1.00		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					5085		1537	4874				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					5085		1537	4874				
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.89	0.89	0.82	0.91	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	2026	0	599	1297	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	40	40	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2026	0	421	1395	0	0	0	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	0%	2%	2%	2%	2%
Turn Type					NA		custom	NA				
Protected Phases					1 7 8		2 3 4 5	2 3 4 5				
Permitted Phases							6	6				
Actuated Green, G (s)					32.0		85.0	85.0				
Effective Green, g (s)					30.0		83.0	83.0				
Actuated g/C Ratio					0.22		0.61	0.61				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)					1130		1013	3213				
v/s Ratio Prot					c0.40		0.13	c0.14				
v/s Ratio Perm							0.14	0.15				
v/c Ratio					1.79		0.42	0.43				
Uniform Delay, d1					52.5		13.4	13.7				
Progression Factor					0.95		0.83	0.83				
Incremental Delay, d2					360.0		0.0	0.0				
Delay (s)					409.7		11.2	11.3				
Level of Service					F		B	B				
Approach Delay (s)		0.0			409.7			11.3			0.0	
Approach LOS		A			F			B			A	
Intersection Summary												
HCM 2000 Control Delay			217.1				HCM 2000 Level of Service			F		
HCM 2000 Volume to Capacity ratio			0.97									
Actuated Cycle Length (s)			135.0				Sum of lost time (s)		40.0			
Intersection Capacity Utilization			99.8%				ICU Level of Service		F			
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	EBT	SBL	SBT
Lane Group Flow (vph)	1830	735	2302
v/c Ratio	1.54	0.72	0.73
Control Delay	281.3	9.0	9.3
Queue Delay	0.2	2.5	1.2
Total Delay	281.5	11.5	10.5
Queue Length 50th (ft)	~823	277	129
Queue Length 95th (ft)	#904	m175	m145
Internal Link Dist (ft)	69		291
Turn Bay Length (ft)			
Base Capacity (vph)	1191	1018	3156
Starvation Cap Reductn	0	170	575
Spillback Cap Reductn	47	86	136
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.60	0.87	0.89

Intersection Summary

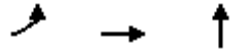
- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

9: S Lamar Blvd & Capity of Texas Hwy
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↑↑↑								↘	↑↑↑		
Traffic Volume (vph)	0	1629	0	0	0	0	0	0	0	1027	1702	0	
Future Volume (vph)	0	1629	0	0	0	0	0	0	0	1027	1702	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		2.0								6.0	6.0		
Lane Util. Factor		0.91								0.86	0.86		
Frbp, ped/bikes		1.00								1.00	1.00		
Flpb, ped/bikes		1.00								1.00	1.00		
Frt		1.00								1.00	1.00		
Flt Protected		1.00								0.95	0.99		
Satd. Flow (prot)		5187								1522	4838		
Flt Permitted		1.00								0.95	0.99		
Satd. Flow (perm)		5187								1522	4838		
Peak-hour factor, PHF	0.92	0.89	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.88	0.91	0.92	
Adj. Flow (vph)	0	1830	0	0	0	0	0	0	0	1167	1870	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	37	37	0	
Lane Group Flow (vph)	0	1830	0	0	0	0	0	0	0	698	2265	0	
Confl. Bikes (#/hr)			1										
Heavy Vehicles (%)	2%	0%	0%	2%	2%	2%	2%	2%	2%	2%	0%	0%	
Turn Type		NA								custom	NA		
Protected Phases		3 4 5								1 2 6 8	1 2 6 8		
Permitted Phases										7	7		
Actuated Green, G (s)		27.0								88.0	88.0		
Effective Green, g (s)		21.0								88.0	88.0		
Actuated g/C Ratio		0.16								0.65	0.65		
Clearance Time (s)													
Vehicle Extension (s)													
Lane Grp Cap (vph)		806								1059	3368		
v/s Ratio Prot		c0.35								0.42	c0.43		
v/s Ratio Perm										0.03	0.03		
v/c Ratio		2.27								0.66	0.67		
Uniform Delay, d1		57.0								14.4	14.6		
Progression Factor		1.00								0.78	0.82		
Incremental Delay, d2		575.7								0.3	0.1		
Delay (s)		632.7								11.5	12.1		
Level of Service		F								B	B		
Approach Delay (s)		632.7			0.0			0.0			12.0		
Approach LOS		F			A			A			B		
Intersection Summary													
HCM 2000 Control Delay			245.4		HCM 2000 Level of Service						F		
HCM 2000 Volume to Capacity ratio			1.17										
Actuated Cycle Length (s)			135.0		Sum of lost time (s)					40.0			
Intersection Capacity Utilization			80.1%		ICU Level of Service					D			
Analysis Period (min)			15										
c Critical Lane Group													





















Lane Group	EBL	EBT	NBT
Lane Group Flow (vph)	682	2088	2010
v/c Ratio	0.59	0.88	2.18
Control Delay	3.6	15.2	561.1
Queue Delay	52.9	46.8	0.7
Total Delay	56.5	62.0	561.8
Queue Length 50th (ft)	4	923	~817
Queue Length 95th (ft)	m16	m648	#804
Internal Link Dist (ft)		38	673
Turn Bay Length (ft)			
Base Capacity (vph)	1165	2362	922
Starvation Cap Reductn	582	805	0
Spillback Cap Reductn	7	3	108
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.17	1.34	2.47

Intersection Summary

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

10: S Lamar Blvd & Capity of Texas Hwy/Ben White Blvd
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 						  				
Traffic Volume (vph)	675	1952	0	0	0	0	0	1255	413	0	0	0
Future Volume (vph)	675	1952	0	0	0	0	0	1255	413	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0						6.0				
Lane Util. Factor	0.91	0.91						0.86				
Frbp, ped/bikes	1.00	1.00						1.00				
Flpb, ped/bikes	1.00	1.00						1.00				
Frt	1.00	1.00						0.96				
Flt Protected	0.95	1.00						1.00				
Satd. Flow (prot)	1643	3419						6271				
Flt Permitted	0.95	1.00						1.00				
Satd. Flow (perm)	1643	3419						6271				
Peak-hour factor, PHF	0.89	0.97	0.92	0.92	0.92	0.92	0.92	0.83	0.83	0.92	0.92	0.92
Adj. Flow (vph)	758	2012	0	0	0	0	0	1512	498	0	0	0
RTOR Reduction (vph)	45	33	0	0	0	0	0	37	0	0	0	0
Lane Group Flow (vph)	637	2055	0	0	0	0	0	1973	0	0	0	0
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	0%	1%	2%	2%	2%	2%	2%	0%	0%	2%	2%	2%
Turn Type	custom	NA						NA				
Protected Phases	4 5 6 8	4 5 6 8						1 2 3				
Permitted Phases	7	7										
Actuated Green, G (s)	93.0	93.0						26.0				
Effective Green, g (s)	93.0	93.0						26.0				
Actuated g/C Ratio	0.69	0.69						0.19				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	1204	2507						1207				
v/s Ratio Prot	0.36	c0.56						c0.31				
v/s Ratio Perm	0.03	0.04										
v/c Ratio	0.53	0.82						1.63				
Uniform Delay, d1	10.3	15.0						54.5				
Progression Factor	0.58	1.30						1.00				
Incremental Delay, d2	0.0	0.2						289.3				
Delay (s)	6.0	19.6						343.8				
Level of Service	A	B						F				
Approach Delay (s)		16.3			0.0			343.8			0.0	
Approach LOS		B			A			F			A	
Intersection Summary												
HCM 2000 Control Delay			154.0					HCM 2000 Level of Service		F		
HCM 2000 Volume to Capacity ratio			1.29									
Actuated Cycle Length (s)			135.0					Sum of lost time (s)		40.0		
Intersection Capacity Utilization			84.1%					ICU Level of Service		E		
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	1040	2122	36	212	255	236
v/c Ratio	3.66	3.64	0.09	0.42	0.16	0.22
Control Delay	1222.5	1208.2	0.5	8.5	1.3	27.5
Queue Delay	3.8	1.6	0.0	5.0	0.0	0.6
Total Delay	1226.2	1209.8	0.5	13.5	1.3	28.1
Queue Length 50th (ft)	~1727	~1760	0	23	5	38
Queue Length 95th (ft)	#1960	#1901	0	m19	m4	47
Internal Link Dist (ft)		364			236	206
Turn Bay Length (ft)						
Base Capacity (vph)	284	583	392	500	1593	1059
Starvation Cap Reductn	0	0	0	221	0	0
Spillback Cap Reductn	69	107	0	0	0	506
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	4.84	4.46	0.09	0.76	0.16	0.43

Intersection Summary

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

11: West Gate Blvd & US 290 WBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations				↙	↕	↗	↙	↕			↕↗↘			
Traffic Volume (vph)	0	0	0	1605	1258	25	382	34	0	0	111	59		
Future Volume (vph)	0	0	0	1605	1258	25	382	34	0	0	111	59		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)				5.5	5.5	5.5	5.5	6.0			6.0			
Lane Util. Factor				0.91	0.91	1.00	0.91	0.91			0.91			
Frbp, ped/bikes				1.00	1.00	0.99	1.00	1.00			0.99			
Flpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00			
Frt				1.00	1.00	0.85	1.00	1.00			0.95			
Flt Protected				0.95	0.98	1.00	0.95	0.96			1.00			
Satd. Flow (prot)				1643	3374	1487	1625	3264			4773			
Flt Permitted				0.95	0.98	1.00	0.60	0.63			1.00			
Satd. Flow (perm)				1643	3374	1487	1024	2158			4773			
Peak-hour factor, PHF	0.92	0.92	0.92	0.88	0.94	0.70	0.90	0.79	0.92	0.92	0.74	0.69		
Adj. Flow (vph)	0	0	0	1824	1338	36	424	43	0	0	150	86		
RTOR Reduction (vph)	0	0	0	0	0	30	0	0	0	0	68	0		
Lane Group Flow (vph)	0	0	0	1040	2122	6	212	255	0	0	168	0		
Confl. Peds. (#/hr)							2					2		
Confl. Bikes (#/hr)						2								
Heavy Vehicles (%)	2%	2%	2%	0%	1%	7%	1%	5%	2%	2%	0%	6%		
Turn Type				Perm	NA	Perm	custom	NA				NA		
Protected Phases					4 5			1 2 6 7				1 2		
Permitted Phases				4 5		4 5	6 7							
Actuated Green, G (s)				22.0	22.0	22.0	63.5	96.5				27.5		
Effective Green, g (s)				22.0	22.0	22.0	63.5	85.5				27.5		
Actuated g/C Ratio				0.17	0.17	0.17	0.49	0.66				0.21		
Clearance Time (s)														
Vehicle Extension (s)														
Lane Grp Cap (vph)				278	570	251	500	1419				1009		
v/s Ratio Prot												0.04		
v/s Ratio Perm				c0.63	0.63	0.00	c0.21	c0.12						
v/c Ratio				3.74	3.72	0.02	0.42	0.18				0.17		
Uniform Delay, d1				54.0	54.0	45.0	21.5	8.6				41.9		
Progression Factor				1.00	1.00	1.00	0.37	0.24				1.00		
Incremental Delay, d2				1242.2	1229.6	0.2	0.0	0.0				0.0		
Delay (s)				1296.2	1283.6	45.2	8.0	2.1				41.9		
Level of Service				F	F	D	A	A				D		
Approach Delay (s)		0.0			1273.7			4.8				41.9		
Approach LOS		A			F			A				D		
Intersection Summary														
HCM 2000 Control Delay			1047.3									HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio			1.19											
Actuated Cycle Length (s)			130.0								34.0			
Intersection Capacity Utilization			123.0%										ICU Level of Service	H
Analysis Period (min)			15											
c Critical Lane Group														



Lane Group	EBL	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	43	1252	825	385	157	1845
v/c Ratio	0.06	0.92	1.21	0.83	0.30	1.00
Control Delay	24.4	48.3	146.3	33.8	60.3	49.4
Queue Delay	0.0	0.0	0.0	0.0	2.3	38.8
Total Delay	24.4	48.3	146.4	33.8	62.7	88.2
Queue Length 50th (ft)	22	517	~408	121	103	~520
Queue Length 95th (ft)	35	545	#547	217	m36	m4
Internal Link Dist (ft)		52	369			236
Turn Bay Length (ft)						
Base Capacity (vph)	722	1365	680	462	520	1846
Starvation Cap Reductn	0	0	0	0	251	807
Spillback Cap Reductn	6	0	5	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.92	1.22	0.83	0.58	1.78

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

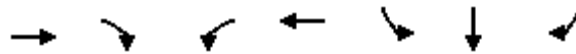
Queue shown is maximum after two cycles.

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

12: West Gate Blvd & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (vph)	29	735	337	0	0	0	0	400	639	129	1624	0		
Future Volume (vph)	29	735	337	0	0	0	0	400	639	129	1624	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	6.0	6.0						6.0	6.0	5.5	5.5			
Lane Util. Factor	1.00	0.95						0.91	0.91	1.00	0.95			
Frpb, ped/bikes	1.00	1.00						0.99	0.99	1.00	1.00			
Flpb, ped/bikes	1.00	1.00						1.00	1.00	1.00	1.00			
Frt	1.00	0.96						0.93	0.85	1.00	1.00			
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00			
Satd. Flow (prot)	1805	3404						3162	1433	1805	3610			
Flt Permitted	0.95	1.00						1.00	1.00	0.95	1.00			
Satd. Flow (perm)	1805	3404						3162	1433	1805	3610			
Peak-hour factor, PHF	0.67	0.83	0.92	0.92	0.92	0.92	0.92	0.91	0.83	0.82	0.88	0.92		
Adj. Flow (vph)	43	886	366	0	0	0	0	440	770	157	1845	0		
RTOR Reduction (vph)	0	4	0	0	0	0	0	120	208	0	0	0		
Lane Group Flow (vph)	43	1248	0	0	0	0	0	705	177	157	1845	0		
Confl. Peds. (#/hr)			1						1	1				
Confl. Bikes (#/hr)			1						1					
Heavy Vehicles (%)	0%	1%	1%	2%	2%	2%	2%	1%	1%	0%	0%	0%		
Turn Type	Split	NA						NA	Perm	Prot	NA			
Protected Phases	1 7	1 7						5 6		2 4	2 4 5 6			
Permitted Phases									5 6					
Actuated Green, G (s)	52.0	52.0						23.5	23.5	37.5	66.5			
Effective Green, g (s)	46.5	46.5						23.5	23.5	37.5	60.5			
Actuated g/C Ratio	0.36	0.36						0.18	0.18	0.29	0.47			
Clearance Time (s)														
Vehicle Extension (s)														
Lane Grp Cap (vph)	645	1217						571	259	520	1680			
v/s Ratio Prot	0.02	c0.37						c0.22		0.09	c0.51			
v/s Ratio Perm									0.12					
v/c Ratio	0.07	1.03						1.23	0.68	0.30	1.10			
Uniform Delay, d1	27.5	41.8						53.2	49.8	36.0	34.8			
Progression Factor	1.00	1.00						1.00	1.00	1.65	1.39			
Incremental Delay, d2	0.0	32.4						119.9	13.7	0.1	45.2			
Delay (s)	27.5	74.1						173.1	63.4	59.5	93.6			
Level of Service	C	E						F	E	E	F			
Approach Delay (s)		72.6			0.0			138.2			90.9			
Approach LOS		E			A			F			F			
Intersection Summary														
HCM 2000 Control Delay			98.4									HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio			1.26											
Actuated Cycle Length (s)			130.0								34.0		Sum of lost time (s)	
Intersection Capacity Utilization			123.0%										ICU Level of Service	H
Analysis Period (min)			15											
c	Critical Lane Group													



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	3939	2028	404	3846	433	447	430
v/c Ratio	1.21	0.72	1.84	0.97	1.65	1.65	0.27
Control Delay	129.3	1.6	413.1	27.7	352.4	350.6	0.4
Queue Delay	0.6	0.0	0.0	43.2	0.0	0.0	0.0
Total Delay	129.9	1.6	413.1	71.0	352.4	350.6	0.4
Queue Length 50th (ft)	~2071	0	~682	1761	~776	~802	0
Queue Length 95th (ft)	#2090	0	m#540	m1511	#960	#1017	0
Internal Link Dist (ft)	834			1419		192	
Turn Bay Length (ft)			950				
Base Capacity (vph)	3252	2814	220	3966	262	271	1595
Starvation Cap Reductn	0	0	0	604	0	0	0
Spillback Cap Reductn	865	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.65	0.72	1.84	1.14	1.65	1.65	0.27

Intersection Summary

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

13: Capital of Texas Hwy & Mopac SBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑↑	↑	↑↑↑					↑	↑	↑
Traffic Volume (vph)	0	3781	1906	319	3692	0	0	0	0	443	321	331
Future Volume (vph)	0	3781	1906	319	3692	0	0	0	0	443	321	331
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	4.0	7.0	7.0					6.5	6.5	4.0
Lane Util. Factor		0.91	0.88	1.00	0.91					0.95	0.95	1.00
Frbp, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	0.99
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		5136	2814	1787	5136					1715	1774	1595
Flt Permitted		1.00	1.00	0.03	1.00					0.95	0.99	1.00
Satd. Flow (perm)		5136	2814	62	5136					1715	1774	1595
Peak-hour factor, PHF	0.92	0.96	0.94	0.79	0.96	0.92	0.92	0.92	0.92	0.86	0.88	0.77
Adj. Flow (vph)	0	3939	2028	404	3846	0	0	0	0	515	365	430
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	3939	2028	404	3846	0	0	0	0	433	447	430
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	1%	1%	1%	1%	2%	2%	2%	2%	0%	1%	0%
Turn Type		NA	Free	pm+pt	NA					Perm	NA	Free
Protected Phases		2		1	6						8	
Permitted Phases			Free	6						8		Free
Actuated Green, G (s)		114.0	180.0	139.0	139.0					27.5	27.5	180.0
Effective Green, g (s)		114.0	180.0	139.0	139.0					27.5	27.5	180.0
Actuated g/C Ratio		0.63	1.00	0.77	0.77					0.15	0.15	1.00
Clearance Time (s)		7.0		7.0	7.0					6.5	6.5	
Vehicle Extension (s)		4.0		2.0	4.0					2.0	2.0	
Lane Grp Cap (vph)		3252	2814	220	3966					262	271	1595
v/s Ratio Prot		0.77		c0.18	0.75							
v/s Ratio Perm			0.72	c1.23						c0.25	0.25	0.27
v/c Ratio		1.21	0.72	1.84	0.97					1.65	1.65	0.27
Uniform Delay, d1		33.0	0.0	71.1	18.6					76.2	76.2	0.0
Progression Factor		1.00	1.00	1.13	1.43					1.00	1.00	1.00
Incremental Delay, d2		98.1	1.6	378.0	1.2					310.2	308.2	0.4
Delay (s)		131.1	1.6	458.6	27.7					386.4	384.5	0.4
Level of Service		F	A	F	C					F	F	A
Approach Delay (s)		87.1			68.7			0.0			259.1	
Approach LOS		F			E			A			F	
Intersection Summary												
HCM 2000 Control Delay			99.9			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.83									
Actuated Cycle Length (s)			180.0			Sum of lost time (s)				20.5		
Intersection Capacity Utilization			146.5%			ICU Level of Service				H		
Analysis Period (min)			15									

c Critical Lane Group






















Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	501	4137	2846	3168	1415	151	546
v/c Ratio	1.45	1.62	1.10	1.98	1.33	0.38	1.43
Control Delay	244.8	298.6	79.5	460.9	208.4	64.6	250.6
Queue Delay	0.0	0.0	2.2	0.0	0.0	0.0	0.0
Total Delay	244.8	298.6	81.7	460.9	208.4	64.6	250.6
Queue Length 50th (ft)	~750	~3676	~1382	~3972	~767	156	~807
Queue Length 95th (ft)	m#518	m#2651	m563	m#1503	#801	226	#913
Internal Link Dist (ft)		1419	756			675	
Turn Bay Length (ft)					300		
Base Capacity (vph)	346	2561	2596	1599	1060	395	381
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	589	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.45	1.62	1.42	1.98	1.33	0.38	1.43

Intersection Summary

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

14: Mopac NBFR & Capital of Texas Hwy
 HCM 2010 Signalized Intersection Summary

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	441	3889	0	0	2789	2915	1217	133	448	0	0	0
Future Volume (veh/h)	441	3889	0	0	2789	2915	1217	133	448	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1881	0	0	1881	1881	1900	1900	1881			
Adj Flow Rate, veh/h	501	4137	0	0	2846	0	1415	151	0			
Adj No. of Lanes	1	2	0	0	3	1	3	1	1			
Peak Hour Factor	0.88	0.94	0.92	0.92	0.98	0.92	0.86	0.88	0.82			
Percent Heavy Veh, %	2	1	0	0	1	1	0	0	1			
Cap, veh/h	346	2562	0	0	2596	808	1063	396	333			
Arrive On Green	0.23	0.95	0.00	0.00	0.51	0.00	0.21	0.21	0.00			
Sat Flow, veh/h	1774	3668	0	0	5305	1599	5103	1900	1599			
Grp Volume(v), veh/h	501	4137	0	0	2846	0	1415	151	0			
Grp Sat Flow(s),veh/h/ln	1774	1787	0	0	1712	1599	1701	1900	1599			
Q Serve(g_s), s	31.0	129.0	0.0	0.0	91.0	0.0	37.5	12.3	0.0			
Cycle Q Clear(g_c), s	31.0	129.0	0.0	0.0	91.0	0.0	37.5	12.3	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	346	2562	0	0	2596	808	1063	396	333			
V/C Ratio(X)	1.45	1.62	0.00	0.00	1.10	0.00	1.33	0.38	0.00			
Avail Cap(c_a), veh/h	346	2562	0	0	2596	808	1063	396	333			
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	0.00	1.00	1.00	0.00			
Uniform Delay (d), s/veh	67.6	4.2	0.0	0.0	44.5	0.0	71.3	61.3	0.0			
Incr Delay (d2), s/veh	204.0	276.9	0.0	0.0	50.1	0.0	155.5	0.2	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			
%ile BackOfQ(50%),veh/ln	36.7	152.6	0.0	0.0	54.8	0.0	32.9	6.5	0.0			
LnGrp Delay(d),s/veh	271.6	281.1	0.0	0.0	94.6	0.0	226.7	61.5	0.0			
LnGrp LOS	F	F			F		F	E				
Approach Vol, veh/h		4638			2846			1566				
Approach Delay, s/veh		280.1			94.6			210.8				
Approach LOS		F			F			F				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		136.0		44.0	38.0	98.0						
Change Period (Y+Rc), s		7.0		6.5	7.0	7.0						
Max Green Setting (Gmax), s		129.0		37.5	31.0	91.0						
Max Q Clear Time (g_c+I1), s		131.0		39.5	33.0	93.0						
Green Ext Time (p_c), s		0.0		0.0	0.0	0.0						
Intersection Summary												
HCM 2010 Ctrl Delay			209.8									
HCM 2010 LOS			F									



Lane Group	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	501	5755	78	448	7499
v/c Ratio	0.93	1.52	0.07	1.32	1.98
Control Delay	96.6	257.7	3.1	200.7	461.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	96.6	257.7	3.1	200.7	461.0
Queue Length 50th (ft)	335	~3454	10	~681	~5044
Queue Length 95th (ft)	346	#3389	14	m#459	m#3523
Internal Link Dist (ft)		1281			1273
Turn Bay Length (ft)			430	550	
Base Capacity (vph)	536	3794	1159	340	3794
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.93	1.52	0.07	1.32	1.98

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

15: Capital of Texas Hwy & Barton Creek Plaza Driveway
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗↗	↕↕↕	↘	↘	↕↕↕
Traffic Volume (vph)	0	386	5352	50	345	7124
Future Volume (vph)	0	386	5352	50	345	7124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	7.0	7.0	6.0	7.0
Lane Util. Factor		0.88	0.91	1.00	1.00	0.91
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		2842	5136	1553	1805	5136
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		2842	5136	1553	1805	5136
Peak-hour factor, PHF	0.92	0.77	0.93	0.64	0.77	0.95
Adj. Flow (vph)	0	501	5755	78	448	7499
RTOR Reduction (vph)	0	0	0	12	0	0
Lane Group Flow (vph)	0	501	5755	66	448	7499
Heavy Vehicles (%)	2%	0%	1%	4%	0%	1%
Turn Type		Over	NA	Prot	Prot	NA
Protected Phases		5	6	6	5	6
Permitted Phases						
Actuated Green, G (s)		34.0	133.0	133.0	34.0	133.0
Effective Green, g (s)		34.0	133.0	133.0	34.0	133.0
Actuated g/C Ratio		0.19	0.74	0.74	0.19	0.74
Clearance Time (s)		6.0	7.0	7.0	6.0	7.0
Vehicle Extension (s)		2.0	4.0	4.0	2.0	4.0
Lane Grp Cap (vph)		536	3794	1147	340	3794
v/s Ratio Prot		0.18	1.12	0.04	c0.25	c1.46
v/s Ratio Perm						
v/c Ratio		0.93	1.52	0.06	1.32	1.98
Uniform Delay, d1		71.9	23.5	6.4	73.0	23.5
Progression Factor		1.00	1.00	1.00	0.93	1.03
Incremental Delay, d2		23.4	234.0	0.1	150.8	439.8
Delay (s)		95.3	257.5	6.5	218.7	464.0
Level of Service		F	F	A	F	F
Approach Delay (s)	95.3		254.1			450.2
Approach LOS	F		F			F
Intersection Summary						
HCM 2000 Control Delay			357.6		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.84			
Actuated Cycle Length (s)			180.0		Sum of lost time (s)	13.0
Intersection Capacity Utilization			143.5%		ICU Level of Service	H
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	193	1773	172	206	701	129
v/c Ratio	0.21	0.89	0.91	0.32	1.63	0.29
Control Delay	15.6	32.9	69.5	16.9	325.9	11.5
Queue Delay	68.7	0.0	0.0	1.6	5.2	0.0
Total Delay	84.2	32.9	69.5	18.5	331.1	11.5
Queue Length 50th (ft)	81	672	78	80	~883	11
Queue Length 95th (ft)	m118	m742	m62	m87	#1107	39
Internal Link Dist (ft)		522		175	200	
Turn Bay Length (ft)			70			90
Base Capacity (vph)	925	1986	190	642	431	441
Starvation Cap Reductn	0	0	0	284	0	0
Spillback Cap Reductn	762	0	0	0	162	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.18	0.89	0.91	0.58	2.61	0.29

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

16: US 290 WBFR & Victory Drive
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↙	↕		↘	↕			↕	↘
Traffic Volume (vph)	0	0	0	187	1493	173	98	163	0	0	624	97
Future Volume (vph)	0	0	0	187	1493	173	98	163	0	0	624	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.5	5.5		5.5	4.5			4.5	4.5
Lane Util. Factor				1.00	0.95		1.00	1.00			1.00	1.00
Frbp, ped/bikes				1.00	1.00		1.00	1.00			1.00	0.98
Flpb, ped/bikes				1.00	1.00		1.00	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1612	3448		1805	1827			1792	1476
Flt Permitted				0.95	1.00		0.14	1.00			1.00	1.00
Satd. Flow (perm)				1612	3448		271	1827			1792	1476
Peak-hour factor, PHF	0.92	0.92	0.92	0.97	0.95	0.86	0.57	0.79	0.92	0.92	0.89	0.75
Adj. Flow (vph)	0	0	0	193	1572	201	172	206	0	0	701	129
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	0	0	0	86
Lane Group Flow (vph)	0	0	0	193	1766	0	172	206	0	0	701	43
Confl. Peds. (#/hr)						1	6					6
Confl. Bikes (#/hr)												3
Heavy Vehicles (%)	2%	2%	2%	12%	2%	8%	0%	4%	2%	2%	6%	7%
Turn Type				Split	NA		pm+pt	NA			NA	Perm
Protected Phases				7 8	7 8		2	1 2 6			1 6	
Permitted Phases							1 2 6					1 6
Actuated Green, G (s)				77.0	77.0		42.0	47.5			32.5	32.5
Effective Green, g (s)				77.0	77.0		37.5	42.0			32.5	32.5
Actuated g/C Ratio				0.57	0.57		0.28	0.31			0.24	0.24
Clearance Time (s)							5.5					
Vehicle Extension (s)							1.5					
Lane Grp Cap (vph)				919	1966		183	568			431	355
v/s Ratio Prot				0.12	c0.51		c0.07	0.11			c0.39	
v/s Ratio Perm							0.19					0.03
v/c Ratio				0.21	0.90		0.94	0.36			1.63	0.12
Uniform Delay, d1				14.2	25.5		42.7	36.1			51.2	40.1
Progression Factor				1.06	1.04		0.88	0.49			1.00	1.00
Incremental Delay, d2				0.0	5.7		41.2	0.1			292.4	0.1
Delay (s)				15.1	32.2		78.7	17.8			343.6	40.1
Level of Service				B	C		E	B			F	D
Approach Delay (s)		0.0			30.5			45.5			296.4	
Approach LOS		A			C			D			F	
Intersection Summary												
HCM 2000 Control Delay			101.8									F
HCM 2000 Volume to Capacity ratio			1.20									
Actuated Cycle Length (s)			135.0						26.0			
Intersection Capacity Utilization			152.3%									H
Analysis Period (min)			15									
c Critical Lane Group												

























Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	3121	211	173	697	208
v/c Ratio	1.54	0.32	0.31	1.29	0.23
Control Delay	273.1	33.6	20.4	157.6	3.5
Queue Delay	0.0	0.0	0.0	0.4	3.4
Total Delay	273.1	33.6	20.4	157.9	6.9
Queue Length 50th (ft)	~1431	134	64	~331	19
Queue Length 95th (ft)	m#1274	176	108	m248	m15
Internal Link Dist (ft)	53	253			175
Turn Bay Length (ft)			125	70	
Base Capacity (vph)	2032	668	561	541	918
Starvation Cap Reductn	0	0	0	25	611
Spillback Cap Reductn	0	15	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.54	0.32	0.31	1.35	0.68

Intersection Summary

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

17: Pack Saddle Pass & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted PM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  							 	 	 		
Traffic Volume (vph)	91	2691	115	0	0	0	0	169	142	606	185	0	
Future Volume (vph)	91	2691	115	0	0	0	0	169	142	606	185	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.0						4.5	4.5	5.5	4.5		
Lane Util. Factor		0.91						1.00	1.00	1.00	1.00		
Frbp, ped/bikes		1.00						1.00	1.00	1.00	1.00		
Flpb, ped/bikes		1.00						1.00	1.00	1.00	1.00		
Frt		0.99						1.00	0.85	1.00	1.00		
Flt Protected		1.00						1.00	1.00	0.95	1.00		
Satd. Flow (prot)		5071						1900	1468	1719	1759		
Flt Permitted		1.00						1.00	1.00	0.51	1.00		
Satd. Flow (perm)		5071						1900	1468	926	1759		
Peak-hour factor, PHF	0.81	0.94	0.79	0.92	0.92	0.92	0.92	0.80	0.82	0.87	0.89	0.92	
Adj. Flow (vph)	112	2863	146	0	0	0	0	211	173	697	208	0	
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	48	0	0	0	
Lane Group Flow (vph)	0	3117	0	0	0	0	0	211	125	697	208	0	
Confl. Bikes (#/hr)			3						1				
Heavy Vehicles (%)	10%	1%	0%	2%	2%	2%	2%	0%	10%	5%	8%	2%	
Turn Type	Split	NA						NA	Prot	D.P+P	NA		
Protected Phases	8	8						1 2 6	1 2 6	7	1 2 6 7		
Permitted Phases										1 2 6			
Actuated Green, G (s)		54.0						47.5	47.5	65.0	69.5		
Effective Green, g (s)		54.0						42.0	42.0	60.5	64.0		
Actuated g/C Ratio		0.40						0.31	0.31	0.45	0.47		
Clearance Time (s)		6.0								5.5			
Vehicle Extension (s)		1.5								1.5			
Lane Grp Cap (vph)		2028						591	456	517	833		
v/s Ratio Prot		c0.61						0.11	0.09	c0.17	0.12		
v/s Ratio Perm										c0.43			
v/c Ratio		1.54						0.36	0.28	1.35	0.25		
Uniform Delay, d1		40.5						36.0	35.0	38.6	21.2		
Progression Factor		1.02						1.00	1.00	0.72	0.19		
Incremental Delay, d2		242.4						0.1	0.1	157.9	0.0		
Delay (s)		283.7						36.2	35.2	185.8	4.1		
Level of Service		F						D	D	F	A		
Approach Delay (s)		283.7		0.0				35.7			144.1		
Approach LOS		F		A				D			F		
Intersection Summary													
HCM 2000 Control Delay			233.5									HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.51										
Actuated Cycle Length (s)			135.0									Sum of lost time (s)	26.0
Intersection Capacity Utilization			152.3%									ICU Level of Service	H
Analysis Period (min)			15										
c Critical Lane Group													






















Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	756	1571	788	514	934	1818
v/c Ratio	1.75	1.75	1.42	0.81	0.40	1.34
Control Delay	377.9	373.7	230.7	17.6	6.1	199.4
Queue Delay	0.6	0.3	0.0	53.8	51.1	0.0
Total Delay	378.4	374.0	230.7	71.4	57.2	199.4
Queue Length 50th (ft)	~1202	~1250	~912	96	71	~844
Queue Length 95th (ft)	#1478	#1394	#1169	m67	m50	#940
Internal Link Dist (ft)		53			174	314
Turn Bay Length (ft)						
Base Capacity (vph)	433	899	555	637	2358	1357
Starvation Cap Reductn	0	0	0	253	1522	0
Spillback Cap Reductn	25	53	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.85	1.86	1.42	1.34	1.12	1.34

Intersection Summary

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

18: US 290 WBFR & Menchaca Road
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted PM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	0	0	1166	1022	764	437	850	0	0	1462	229	
Future Volume (vph)	0	0	0	1166	1022	764	437	850	0	0	1462	229	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				6.0	6.0	6.0	6.0	5.0			5.0		
Lane Util. Factor				0.91	0.91	1.00	1.00	0.95			0.91		
Frt				1.00	1.00	0.85	1.00	1.00			0.98		
Flt Protected				0.95	0.98	1.00	0.95	1.00			1.00		
Satd. Flow (prot)				1626	3372	1615	1805	3574			5025		
Flt Permitted				0.95	0.98	1.00	0.95	1.00			1.00		
Satd. Flow (perm)				1626	3372	1615	1805	3574			5025		
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.97	0.85	0.91	0.92	0.92	0.95	0.82	
Adj. Flow (vph)	0	0	0	1240	1087	788	514	934	0	0	1539	279	
RTOR Reduction (vph)	0	0	0	0	0	124	0	0	0	0	18	0	
Lane Group Flow (vph)	0	0	0	756	1571	664	514	934	0	0	1800	0	
Heavy Vehicles (%)	2%	2%	2%	1%	1%	0%	0%	1%	2%	2%	1%	0%	
Turn Type				Perm	NA	Perm	Prot	NA			NA		
Protected Phases					8 9		4 13	1 4 13				1	
Permitted Phases				8 9		8 9							
Actuated Green, G (s)				41.0	41.0	41.0	53.0	98.0			40.0		
Effective Green, g (s)				41.0	41.0	41.0	48.0	98.0			40.0		
Actuated g/C Ratio				0.27	0.27	0.27	0.32	0.65			0.27		
Clearance Time (s)											5.0		
Vehicle Extension (s)											1.0		
Lane Grp Cap (vph)				444	921	441	577	2335			1340		
v/s Ratio Prot							c0.28	0.26			c0.36		
v/s Ratio Perm				0.46	0.47	0.41							
v/c Ratio				1.70	1.71	1.51	0.89	0.40			1.34		
Uniform Delay, d1				54.5	54.5	54.5	48.5	12.2			55.0		
Progression Factor				1.00	1.00	1.00	0.37	0.51			1.00		
Incremental Delay, d2				325.8	322.2	239.6	1.8	0.0			159.7		
Delay (s)				380.3	376.7	294.1	19.5	6.2			214.7		
Level of Service				F	F	F	B	A			F		
Approach Delay (s)		0.0			356.7			10.9			214.7		
Approach LOS		A			F			B			F		
Intersection Summary													
HCM 2000 Control Delay			237.8		HCM 2000 Level of Service						F		
HCM 2000 Volume to Capacity ratio			1.35										
Actuated Cycle Length (s)			150.0		Sum of lost time (s)					27.0			
Intersection Capacity Utilization			160.4%		ICU Level of Service					H			
Analysis Period (min)			15										
c Critical Lane Group													



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	334	858	673	1694	802	2128
v/c Ratio	1.21	1.57	2.12	1.54	0.86	0.77
Control Delay	175.0	303.1	541.0	284.1	9.8	4.3
Queue Delay	0.0	0.0	0.0	0.1	50.4	48.0
Total Delay	175.0	303.1	541.0	284.2	60.2	52.2
Queue Length 50th (ft)	~397	~623	~976	~829	161	99
Queue Length 95th (ft)	#559	#758	#1225	#926	m59	m9
Internal Link Dist (ft)		62		300		174
Turn Bay Length (ft)						
Base Capacity (vph)	276	548	317	1100	932	2763
Starvation Cap Reductn	0	0	0	0	364	1241
Spillback Cap Reductn	0	0	0	36	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.21	1.57	2.12	1.59	1.41	1.40

Intersection Summary

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

19: Menchaca Road & US 290 EBFR
 HCM Signalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↘	↑↑	↗					↑↑↑		↘	↑↑		
Traffic Volume (vph)	287	824	619	0	0	0	0	998	534	682	2000	0	
Future Volume (vph)	287	824	619	0	0	0	0	998	534	682	2000	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.0	6.0	6.0					5.0		5.0	5.0		
Lane Util. Factor	1.00	0.95	1.00					0.91		1.00	0.95		
Frpb, ped/bikes	1.00	1.00	0.99					1.00		1.00	1.00		
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00		
Frt	1.00	1.00	0.85					0.95		1.00	1.00		
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00		
Satd. Flow (prot)	1805	3574	1593					4830		1770	3574		
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00		
Satd. Flow (perm)	1805	3574	1593					4830		1770	3574		
Peak-hour factor, PHF	0.86	0.96	0.92	0.92	0.92	0.92	0.92	0.93	0.86	0.85	0.94	0.92	
Adj. Flow (vph)	334	858	673	0	0	0	0	1073	621	802	2128	0	
RTOR Reduction (vph)	0	0	74	0	0	0	0	70	0	0	0	0	
Lane Group Flow (vph)	334	858	599	0	0	0	0	1624	0	802	2128	0	
Confl. Bikes (#/hr)			1						1				
Heavy Vehicles (%)	0%	1%	0%	2%	2%	2%	2%	1%	1%	2%	1%	2%	
Turn Type	Perm	NA	Perm					NA		Prot	NA		
Protected Phases		4 8						13		19	19 13		
Permitted Phases	4 8		4 8										
Actuated Green, G (s)	23.0	23.0	23.0					32.0		79.0	116.0		
Effective Green, g (s)	23.0	23.0	23.0					32.0		79.0	116.0		
Actuated g/C Ratio	0.15	0.15	0.15					0.21		0.53	0.77		
Clearance Time (s)								5.0					
Vehicle Extension (s)								1.0					
Lane Grp Cap (vph)	276	548	244					1030		932	2763		
v/s Ratio Prot		0.24						c0.34		c0.45	0.60		
v/s Ratio Perm	0.19		c0.38										
v/c Ratio	1.21	1.57	2.46					1.58		0.86	0.77		
Uniform Delay, d1	63.5	63.5	63.5					59.0		30.7	9.5		
Progression Factor	1.00	1.00	1.00					1.00		0.26	0.41		
Incremental Delay, d2	123.4	263.3	667.6					264.2		0.8	0.1		
Delay (s)	186.9	326.8	731.1					323.2		8.8	4.1		
Level of Service	F	F	F					F		A	A		
Approach Delay (s)		447.6			0.0			323.2			5.4		
Approach LOS		F			A			F			A		
Intersection Summary													
HCM 2000 Control Delay			215.4									HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.42										
Actuated Cycle Length (s)			150.0									Sum of lost time (s)	27.0
Intersection Capacity Utilization			160.4%									ICU Level of Service	H
Analysis Period (min)			15										

c Critical Lane Group

Intersection												
Int Delay, s/veh	130.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	73	144	241	22	134	7	222	21	56	5	32	43
Future Vol, veh/h	73	144	241	22	134	7	222	21	56	5	32	43
Conflicting Peds, #/hr	14	0	9	9	0	14	6	0	11	11	0	6
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	87	87	50	76	50	80	75	60	60	56	75
Heavy Vehicles, %	0	0	7	0	0	0	5	0	0	0	0	0
Mvmt Flow	107	166	277	44	176	14	278	28	93	8	57	57

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	204	0	0	452	0	0	862	820	325	875	951	203
Stage 1	-	-	-	-	-	-	528	528	-	285	285	-
Stage 2	-	-	-	-	-	-	334	292	-	590	666	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.15	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.545	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1380	-	-	1119	-	-	~ 272	312	721	272	262	843
Stage 1	-	-	-	-	-	-	528	531	-	727	679	-
Stage 2	-	-	-	-	-	-	674	675	-	497	460	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1362	-	-	1109	-	-	~ 177	260	707	188	218	827
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 177	260	-	188	218	-
Stage 1	-	-	-	-	-	-	466	469	-	639	641	-
Stage 2	-	-	-	-	-	-	543	637	-	358	406	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.5			1.6			\$ 416.8			22.5		
HCM LOS							F			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	221	1362	-	-	1109	-	-	327
HCM Lane V/C Ratio	1.805	0.079	-	-	0.04	-	-	0.376
HCM Control Delay (s)	\$ 416.8	7.9	0	-	8.4	0	-	22.5
HCM Lane LOS	F	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	27.6	0.3	-	-	0.1	-	-	1.7

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

21: S Lamar Blvd & Driveway A
 HCM Unsignalized Intersection Capacity Analysis

Brodie Oaks Center TIA
 Phase 3-2036 Site+Forecasted PM



Movement	EBL	EBR	NBL	NBT	SBT	SBR					
Lane Configurations											
Traffic Volume (veh/h)	0	0	0	2791	2379	115					
Future Volume (Veh/h)	0	0	0	2791	2379	115					
Sign Control	Stop			Free		Free					
Grade	0%			0%		0%					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92					
Hourly flow rate (vph)	0	0	0	3034	2586	125					
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type				None	None						
Median storage (veh)											
Upstream signal (ft)				408	941						
pX, platoon unblocked											
vC, conflicting volume	3407	709	2711								
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	3407	709	2711								
tC, single (s)	6.8	6.9	4.1								
tC, 2 stage (s)											
tF (s)	3.5	3.3	2.2								
p0 queue free %	100	100	100								
cM capacity (veh/h)	5	377	148								
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4		
Volume Total	0	758	758	758	758	739	739	739	494		
Volume Left	0	0	0	0	0	0	0	0	0		
Volume Right	0	0	0	0	0	0	0	0	125		
cSH	1700	1700	1700	1700	1700	1700	1700	1700	1700		
Volume to Capacity	0.00	0.45	0.45	0.45	0.45	0.43	0.43	0.43	0.29		
Queue Length 95th (ft)	0	0	0	0	0	0	0	0	0		
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Lane LOS	A										
Approach Delay (s)	0.0	0.0					0.0				
Approach LOS	A										
Intersection Summary											
Average Delay	0.0										
Intersection Capacity Utilization	43.8%			ICU Level of Service				A			
Analysis Period (min)	15										

Intersection						
Int Delay, s/veh	29.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑↑	
Traffic Vol, veh/h	0	249	0	775	2101	23
Future Vol, veh/h	0	249	0	775	2101	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	271	0	842	2284	25

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	- 1155	-	0 - 0
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	- 7.14	-	- - -
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	- 3.92	-	- - -
Pot Cap-1 Maneuver	0 ~ 163	0	- - -
Stage 1	0	0	- - -
Stage 2	0	0	- - -
Platoon blocked, %			- - -
Mov Cap-1 Maneuver	- ~ 163	-	- - -
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	NB	SB
HCM Control Delay, s	\$ 372.1	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT EBLn1	SBT	SBR
Capacity (veh/h)	- 163	-	-
HCM Lane V/C Ratio	- 1.66	-	-
HCM Control Delay (s)	- \$ 372.1	-	-
HCM Lane LOS	- F	-	-
HCM 95th %tile Q(veh)	- 18.8	-	-

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

Intersection						
Int Delay, s/veh	12.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑ ↑↑	↑ ↑↑			
Traffic Vol, veh/h	0	216	1594	126	0	0
Future Vol, veh/h	0	216	1594	126	0	0
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	-	-	-
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	235	1733	137	0	0

Major/Minor	Minor1	Major1	
Conflicting Flow All	-	935	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.14	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.92	-
Pot Cap-1 Maneuver	0 ~ 229	-	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	- ~ 229	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB
HCM Control Delay, s	111.8	0
HCM LOS	F	

Minor Lane/Major Mvmt	NBT	NBRWBLn1
Capacity (veh/h)	-	- 229
HCM Lane V/C Ratio	-	- 1.025
HCM Control Delay (s)	-	- 111.8
HCM Lane LOS	-	- F
HCM 95th %tile Q(veh)	-	- 9.8

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